Proceedings of

International Symposium on Psychology and Behavior in China's Social Transformation under the Background of Informatization

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Preface

The International Symposium on Psychology and Behavior in China's Social Transformation under the Background of Informatization (ISPBC '15), was held in September 18-20, 2015 in Jiaxing, Zhejiang, China. The symposium brought about 215 experts and participants from many universities, government offices and enterprises. Hosted by the Department of Psychology, Zhejiang University and co-hosted by the Branch of China Social Psychology of Chinese Psychological Society, the Social Psychology Society of Zhejiang province, Jiaxing University, and the Psychological Society of Jiaxing, joined by Hope College, Western Illinois University, Jacksonville State University, and Unilever Company. This symposium provided a forum for discussion on a variety of topics on social problems and solutions. Participants also studied Chinese typical prototypes in terms of psychology and behaviors in current China that are undergoing social transformation changes. The goal of the forum was to engage innovational thinking and look for ideas to support continuous economic development of China.

Highlights of the day and a half symposium included keynote speeches by well known experts and scholars from the USA, China and Unilever Co. Conference Co-Chair, Professor David G. Myer from Hope College, Holland Michigan, USA, made an exceptional speech, "A Social Psychology of the Internet". He analyzed the benefits and detriments of the internet based on statistics on the mobile phone, Internet, and social media worldwide, including China. The internet enhances social connections, and e-commerce, but on the other hand, it also takes time away from face-to-face relationships, deindividuation (enabling bullying), and especially, self-segregation, leading to polarization and so on.

Professor Guillermo Francia from Jacksonville State University in the USA addressed the need to study human behavior in risky-choice situations with the ultimate goal of advancing a trustworthy cyberspace. He described Agent-Based Models (ABMs) and scenarios that could be used to simulate cyber risks and decision making processes. Steven I. Dworkin, professor from Western Illinois University in the USA, presented how informatization is influencing the acceptance and support of psychological research, and discussed the issue of "the reproducibility of psychological science", putting forward a very important point of view on the research of psychology. In addition, scientist Ilse Gortemaker, a researcher of Sensation, Perception and Behavior at Unilever in the Netherlands, outlined how Unilever uses science and expertise in the area of consumer behavior and behavior change to help achieve Unilever's vision to make sustainable behavior commonplace.

The Chinese scholars also presented interesting viewpoints with high academic significance. Professor Xinyue Zhou from Sun Yat-Sen University in Guangzhou, delivered the keynote address, "How Residential Mobility Impeded Self-Control and Behavior with Big Data from Six Studies". Professor Mowei Shen of Zhejiang University, Professor Shenghua Jin from Beijing Normal University, Bin Zuo, professor of Huazhong Normal University, and Pei Wang, professor from Shanghai Normal University, pointed out the importance and value in studying psychological and behavioral change in China's social transformation under the background of informatization from different perspectives.

One of the key conclusions from ISPBC '15 was that Chinese people are facing many social issues and problems that have arisen from China's transitional period. People are beginning to see the diminishing of large gains economically from the opening-up approaches, not to mention the problems created by the challenges of technology, as well as the ageing population, and looming exhaustion of surplus rural labor, and so on. For example, one scholar said that her mother felt left behind by new things appears every day; the mobile web, fast internet, the internet of things and cloud computing affect every aspect of people's lives. The discussions among scholars and participants set the thought process about how to help people deal with these issues and problems, and how to prepare them to respond to such challenges. More responsibilities knock at the door of psychologists.

The symposium did serve as a platform for the international community to work together to develop a common vision to strengthen the studies in terms of psychology and the application of professional psychology in various fields.

Among the many papers submitted for the proceeding, 36 articles were selected to be be included in this International Symposium on Psychology and Behavior in China's Social Transformation under the Background of Informatization Proceeding. We would like to thank American Scholars Press, USA for their support and work from faculty to make this Proceeding possible.

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Keynote Speech I

A Social Psychology of the Internet

David G. Myers
Hope College, USA
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[Abstract] *Today's world is digitally connected. This connectivity offers many benefits, including enhanced social connections, e-commerce, and new relationships, including romantic relationships. The Internet is also enabling new methods of data collection and "big data" research. But social psychologists have also noted some costs, including deindividuation (enabling bullying), time diversion from face-to-face relationships, and, especially, self-segregation that leads to social polarization.*

Introduction

It is one of social psychology's biggest lessons: We human have a deep need to belong. We flourish when connected to others in close, supportive relationships. When isolated – as in solitary confinement – we suffer. We are social animals. In today's world, technology is connecting us in new and very big ways. In China, reports the World Bank, mobile phone users have soared from 30% of people in 2005 to 92% in 2014. Worldwide, Internet use has skyrocketed from few people in 2000 to nearly 45% in 2015 – and to fully half of people in China.

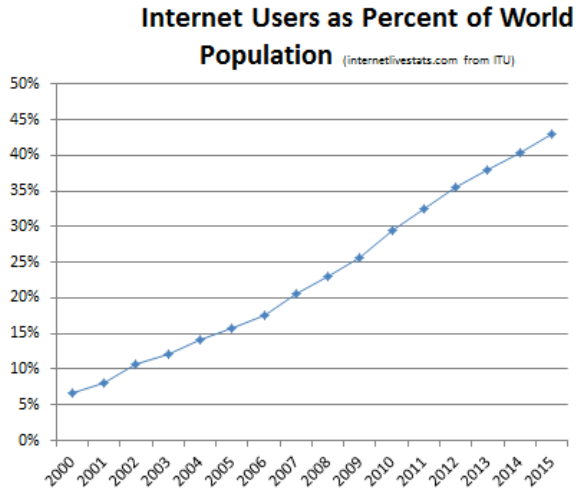

Figure 1. **Internet Users** (% of World Population **)**

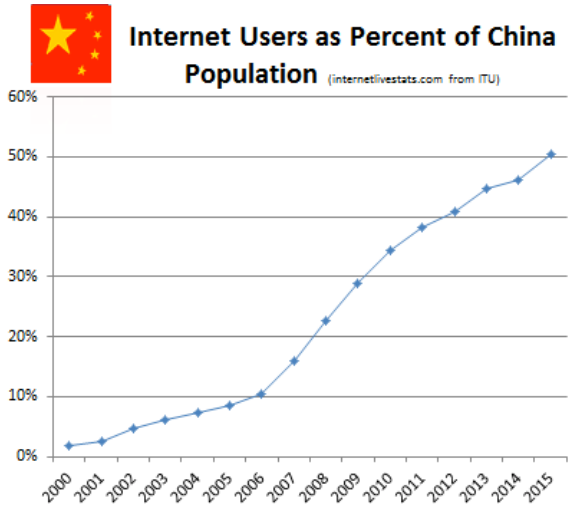

Figure 2. **Internet Users** (% of China's Population**)**

Facebook, whose mission is "to make the world more open and connected," now has 1.5 billion subscribers – 1 billion of whom, for the first time in late August 2016, used Facebook in a single day. QQ has more than 800 million users of its instant messaging service. In the United States, "a typical teen sends and receives 30 texts per day," reports the Pew Research Center (2015). Moreover, reports Pew, most teens prefer messaging – "fingered speech" –to phone calling.

The Internet's Social Benefits

"A more open and connected world is a better world," messaged Facebook founder Mark Zuckerberg after that first 1 billion-user day. "It brings stronger relationships with those you love, a stronger economy with more opportunities, and a stronger society that reflects all our values." Indeed, the Internet is shrinking the global village. E-commerce and telecommuting save us time. Digitally, we find more information than in any library. And, increasingly, people find their romantic partners online, especially if seeking same-sex partners:

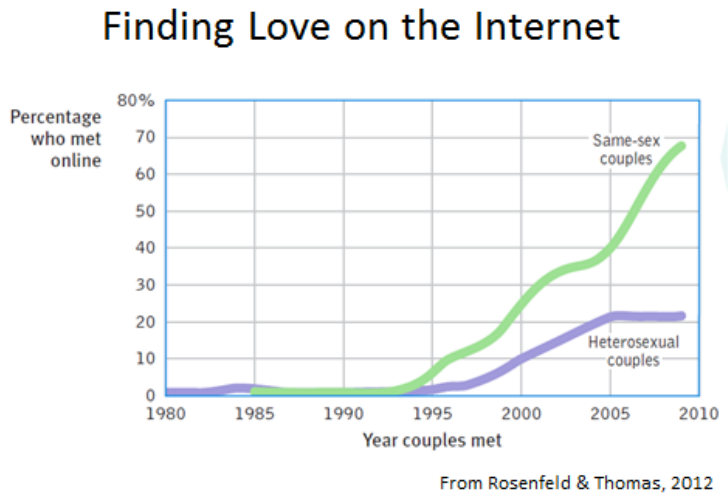

Figure 3. **Finding Love on the Internet**

Although no online matchmaking scheme is particularly effective (Finkel, et al., 2012), Internet-formed friendships and romances are *more* likely to last (Bergh & McKenna, 2004). One reason for the greater durability of online romances is the greater self-disclosure they foster, with more attention to shared values and interests and less attention to looks and location (Joinson, 2001; Bargh & McKenna, 2004).

The Internet's Social Costs

The benefits of our digitally connected world do come with some risks and social costs. These include:

- *Deindividuation.* Faceless anonymity enables sexual exploitation, piracy, hate speech, and the meanness of cyberbullying.
- *Time diversion from face-to-face relationships.* Internet addictions to gambling and pornography may disrupt and drain time from healthy relationships and productive work.
- *"Slacktivism."* The effortless signing of online petitions or sharing of prosocial videos may substitute feel-good Internet clicks for real, costly helping.
- Perhaps the biggest social cost of the Internet, however, is its enabling of *self-segregation*, resulting in *group polarization*. With increased information choices, people selectively expose themselves to think-alike media and bloggers. As studies of group polarization repeatedly demonstrate, people in like-minded groups tend to reinforce their shared views and shift toward the extreme. The Internet echo chamber is a perfect example: It serves as a social amplifier that feeds and strengthens shared views. Sometimes this is for good, as peacemakers become more pacifistic and cancer survivors find mutual support. But sometimes it works for evil. Racists

become even more racist. Conspiracy fears grow. Hostile people become terrorists. The bottom line: Separation + conversation → polarization. Thus, the Internet often deepens social divisions.

Internet-Enabled Research

For social scientists, the Internet offers a vast new field for research. Sixteen million people have responded to online Implicit Association Tests (measuring unconscious attitudes, at implicit.harvard.edu). ProlificAcademic.co.uk and Amazon Turk are enabling researchers to engage participants from well beyond their own institutions. And "big data" archives are providing huge data samples. A few favorite examples follow.

Individualized Names

Social psychologist Jean Twenge and her colleagues (2010) report that the growing individualism of the United States is reflected in the increased uniqueness of first names – and the corresponding diminishing proportion of babies given one of the ten most common names.

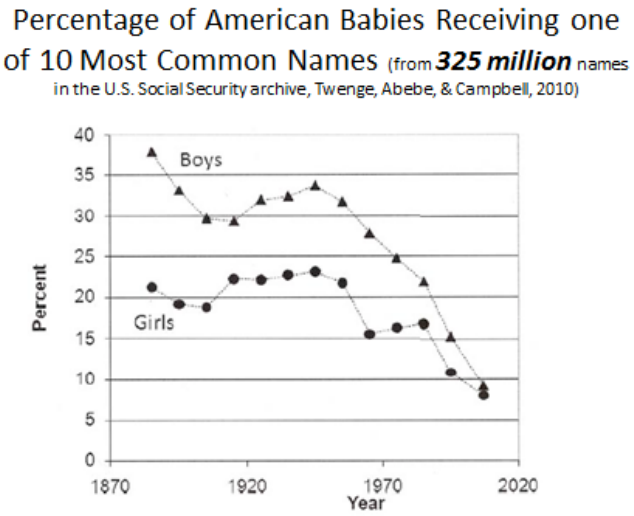

Figure 4. **Percentage of American Babies Receiving One of the Ten Most Common Names**

Baseball Aggression

Many laboratory studies have found increased aggressive behavior in hot environments. To explore the phenomenon in the real world, Richard Larrick and colleagues (2011) calculated the probability of a baseball pitcher hitting the batter, as a function of both the day's temperature and a possible revenge factor (whether, and how often, his teammates had been hit by the opposing pitcher during that game).

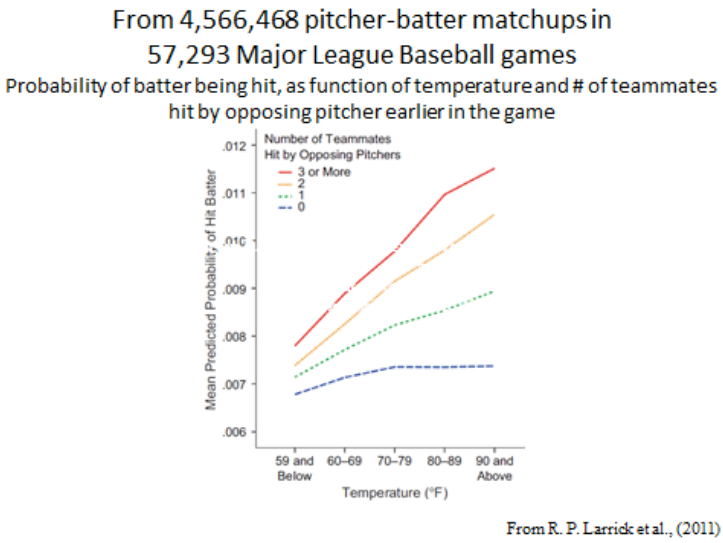

Figure 5. **Probability of a Batter Being Hit, as a Function of Temperature and # of Teammates Hit by Pitchers**

The History of Ideas

Google has digitized 5.2 million English language books, which we can search via ngrams.googlelabs.com. One sample search confirms that "homosexuality" is a twentieth-century concept, and that "sexual orientation" is a late twentieth-century term:

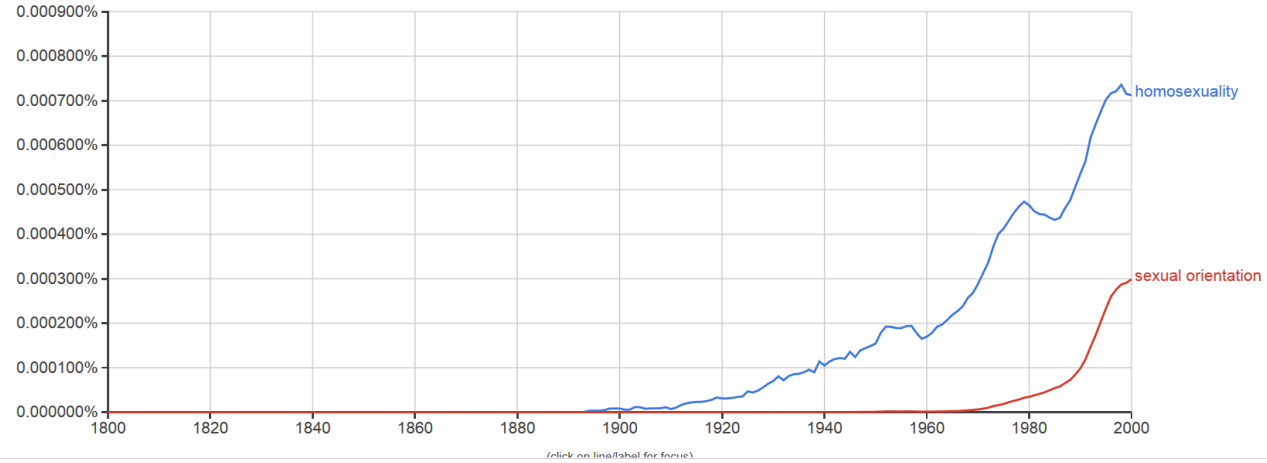

Figure 6. **"Homosexuality" as a 20th Century Concept vs. "Sexual Orientation" as a Late 20th Centtury Term**

Another sample search displays, again, the increasing individualism of the western world:

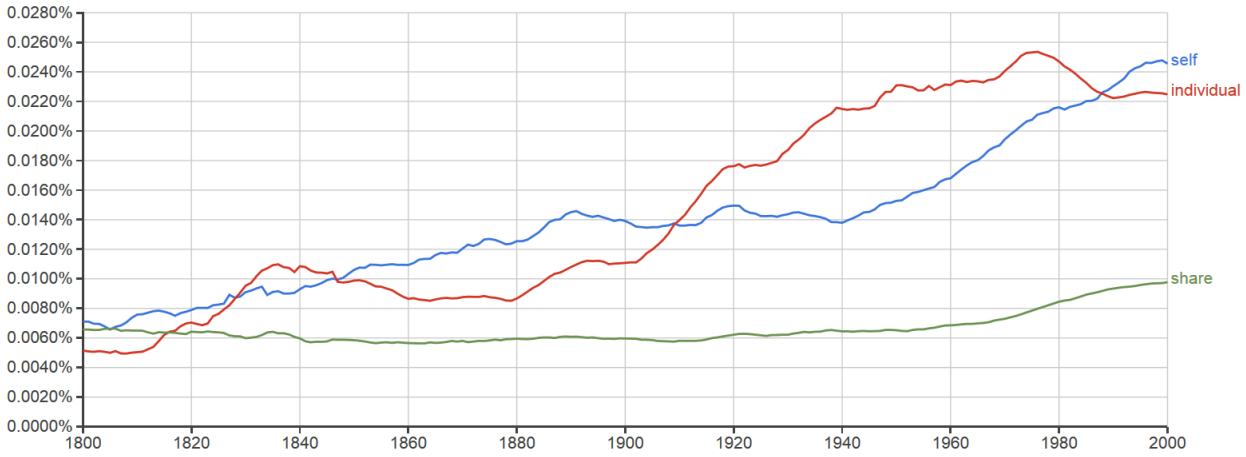

Figure 7. **Sample Search Showing Increase of Individualism in the Western World**

Facebook also offers an enormous data archive. One of its social scientists (Kramer, 2010) calibrated for me the relative frequency of positive over negative emotions in "billions" of Facebook posts, by day of the week. Other researchers confirmed the greater happiness of weekends, and of the evening hours, in 509 million Twitter messages.

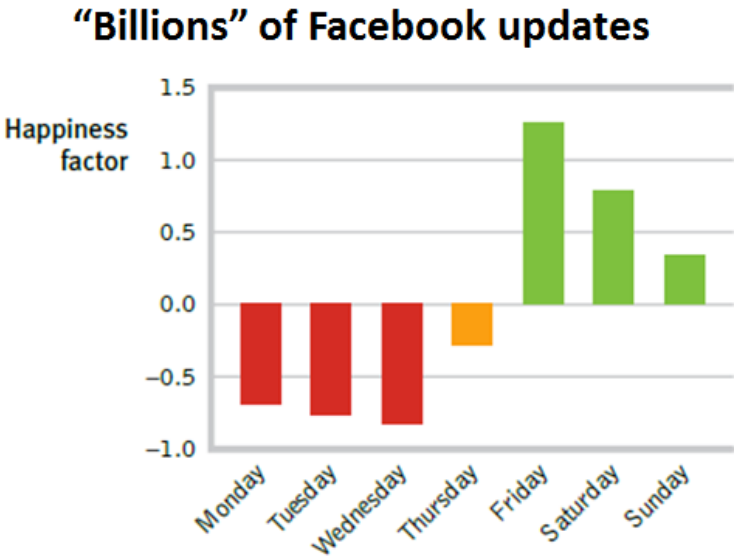

Figure 9. **Relative Frequency of Positive Over Negative Emotions in "Billions" of Facebook Posts**

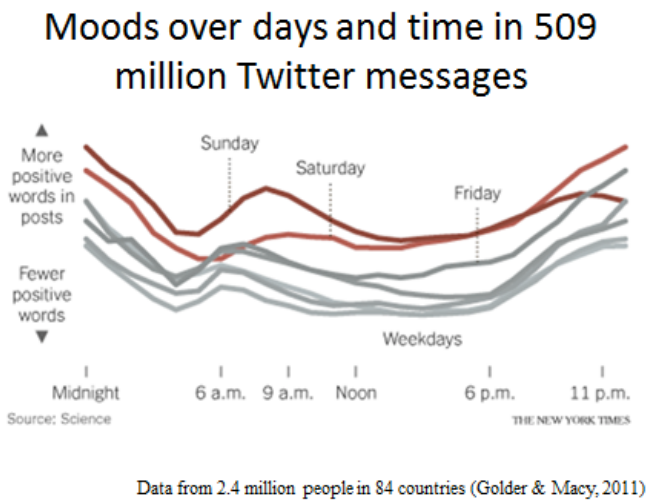

Figure 10. **Moods Over Days in Time in Twitter Messages**

Big Data Survey Archives

The Gallup Organization surveys 1000 Americans daily and several hundred thousand people from across the planet in its "World Poll." And the U.S. General Social Survey (gss.norc.org) enables students to explore its surveys of more than 50,000 Americans since 1972. As an example from each, here are data showing that life satisfaction tends to be lower among people in highly religious *countries*…but higher among highly religious *individuals.* (For more examples of this "religious engagement paradox" see davidmyers.org/davidmyers/assets/ReligParadox.docx.) This is but one of several examples of how aggregate data (such as across countries or states) differ from data comparing individuals. The differences appear to be attributable to other uncontrolled differences among the countries, such as in income level (which is lower in highly religious countries).

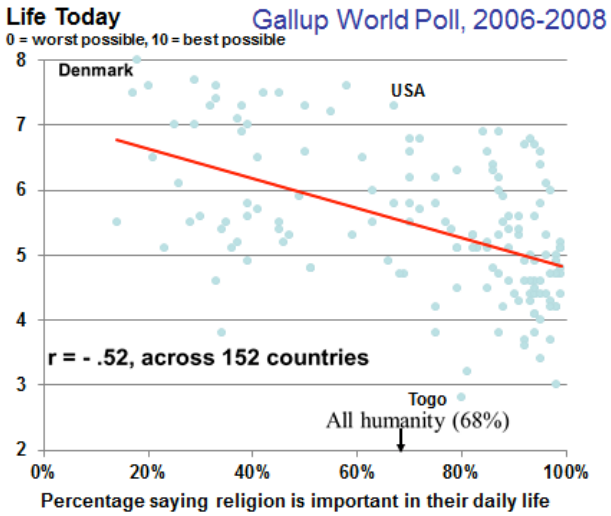

Figure 11. **Life Satisfaction Among People in Highly Religious Countries**

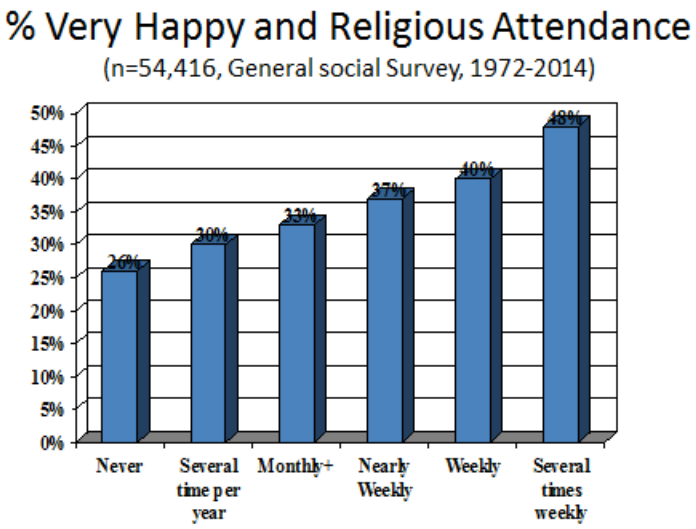

Figure 12. **Life Satisfaction Among Highly Religious Individuals**

Questions for Future Research

Researchers have been exploring some interesting questions about the Internet and social relations:

1. Do social network sites make us more or less socially isolated?
2. Do people's social network profiles reflect their actual personalities?
3. Does social networking promote narcissism (self-focus and self-importance)?
4. How can people be helped to balance online and real-world time?

Conclusion

- Today's world, in China and beyond, is a rapidly evolving digitally networked world.
- With it come many benefits, including enhanced connections, e-commerce, and new relationships.
- But the online world also entails some costs, including deindividuation, time diversion, and self-segregation→social polarization.
- The Internet is enabling new methods of data collection and "big data" research.
- Interesting questions await further research.

References

Bargh, J. A., & McKenna, K. Y. A. (2004).The Internet and social life. *Annual Review of Psychology, 55,* 573-590.

Finkel, E. J., Eastwick, P. W., Karney, B. R., Reis, H. T., & Sprecher, S. (2012). Online dating: A critical analysis from the perspective of psychological science. *Psychological Science, 13,* 3-66.

Golder, S. A., & Macy, M. W. (2011). Diurnal and seasonal mood vary with work, sleep, and day-length across diverse cultures. *Science, 333,* 1878-1881.

Joinson, A. N. (2001). Self-disclosure in computer-mediated communication: The role of self-awareness and visual anonymity. *European Journal of Social Psychology, 31,* 177-192.

Kramer, A. (2010). Personal communication. Data Science. Facebook, Inc.

Larrick, R. P., Timmerman, T. A., Carton, A. M., & Abrevaya, J. (2011).Temper, temperature, and temptation: Heat-related retaliation in baseball. *Psychological Science, 22,* 423-428.

Pew (2015, April 9). Teens, social media & technology overview 2015. Amanda Lenhart report. Retrieved from www.pewinternet.org/2015/04/09/teens-social-media-technology-2015.

Rosenfeld, M. J., & Thomas, R. J.(2012). Searching for a mate: The rise of the internet as a social intermediary. *American Sociological Review, 77,* 523-547.

Twenge, J. M., Abebe, E. M., & Campbell, W. K. (2010). Fitting in or standing out: Trends in American parents' choices for children's names, 1880–2007. *Social Psychological and Personality Science, 1,* 19-25.

Biography

Dr. David Guy Myers is a well-known Professor of Psychology at Hope College in Michigan, United States and the author of 17 books, including popular textbooks entitled *Psychology*, *Exploring Psychology*, *Social Psychology* and general-audience books dealing with issues related to the Christian faith, as well as scientific psychology. In addition, he has published chapters in over 60 books and numerous scholarly research articles in professional journals.

Myers has received fellowships and grants from the U.S. Public Health Service and the National Science Foundation and is a fellow of the American Psychological Association, the American Psychological Society, and the American Association of Applied and Preventive Psychology. He is one of the most important authors of psychology textbooks and is the recipient of honorary doctorates from three different educational institutions.

Keynote Speech II

Making Sustainable Living Commonplace: The Importance of Behavior Change

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[Abstract] *Unilever is one of the world's leading suppliers of fast-moving consumer goods and is pioneering a new, more sustainable way of doing business. The Unilever Sustainable Living Plan, which is at the heart of Unilever's business model, outlines how Unilever will achieve their sustainable growth ambition. Creating a sustainable future will require changes in behavior across society. This short communication outlines how Unilever uses the science in the area of consumer behavior and behavior change to help achieve Unilever's vision to make sustainable behavior commonplace.*

Introduction

Unilever is a global company of a wide range of fast-moving consumer goods, such as deodorants, soaps, laundry detergents, toothpastes, tea, soups, bouillon cubes and margarines. The products Unilever produces are sold in over 190 countries and used by two billion consumers every day. With this scale, we not only have the opportunity to make sustainable living common place, but also a big responsibility to do so. Hence, Unilever is pioneering a new, more sustainable way of doing business. The ambition is to double the size of the business in conjunction with reducing the environmental footprint of Unilever's products and increasing positive social impact (Unilever Sustainable Living Plan, 2010). The Unilever Sustainable Living Plan, which was launched in 2010, outlines how Unilever will achieve their sustainable growth ambition. It sets out three overarching goals to be achieved by 2020: 1) help more than a billion people take action to improve their health and well-being; 2) halve the environmental footprint of the making and use of our products; and 3) help enhance the livelihoods of millions of people as we grow our business (Unilever Sustainable Living Plan, 2010).

A large proportion of the environmental impact of Unilever's products (such as laundry detergent and shampoo) is associated with consumer use, i.e. the impact is defined by the amount of water and greenhouse gases (energy) consumers use in combination with Unilever products. For example, more than half of the proportion of greenhouse gases impact is defined by the amount of hot water that is used when washing clothes and showering. Although various smart technical product solutions are being developed, changes in consumer behavior are believed to be required as well, because the health and environmental impact will be defined by whether consumers will buy and use sustainability-led innovations in the intended way (Inspiring Sustainable Living, 2011; Steg & Vlek, 2009). For example, a one rinse laundry detergent developed for water-scarce markets to enable consumers to save water when washing clothes by hand, did not result in the envisioned water savings in its first instance. Consumers kept using three buckets of water to rinse their laundry instead of the required one bucket of water with the new detergent. Consequently, the brand team developed an additional behavior change campaign to encourage consumers to adjust their laundry routine in order to save valuable water for other household purposes (such as for cooking and sanitation).

Helping consumers to make changes in their daily lives is not without challenges. Actually, adopting more healthier and pro-environmental behaviors (such as eating a healthier diet or household water conservation) can be quite difficult for people as it often requires a lot of self-control not to perform the routinized less sustainable behaviors. Simply providing sound scientific evidence that something is better for the environment (or health) is for that reason often not enough to break existing habits (Abrahamse, Steg, Vlek & Rothengatter, 2005; Steg &Vlek, 2009).

Although not easy, it is not impossible to develop effective behavior change interventions. Best practice in behavior change tells us that the more targeted the intervention, the more effective it will be (Steg &Vlek, 2009; Kok, Lo, Peters, & Ruiter, 2011; Lehman & Geller, 2004; Sweet & Fortier, 2010; Osbaldiston & Schott, 2012). Several scholars argue that an intervention will be more successful when it: a) aims at one risk behaviour, b) focuses on the most important determinants of that behavior, c) applies the right behavior change techniques, and d) systematically evaluates the impact of the intervention (Steg & Vlek, 2009; Kok, Lo, Peters, and Ruiter, 2011; Lehman and Geller, 2004). Based on these insights and based on a broad variety of theories of behavior and behavior change, a team of internal and external Unilever experts created a simple and user-friendly best practice model of behavior change - Unilever's Five Levers for Change - to help Unilever change behavior.

Unilever's Five Levers for Change

Overall, the aim of the Unilever's Five Levers for Change is to offer practitioners a structured toolkit to help them think through the different steps to develop effective behavior change interventions. These steps include: a) defining the behavior change challenge, b) gathering in-depth understanding of the consumer, c) creating ideas based on the main barriers and triggers of the behavior, d) implementing the program, and e) evaluating the intervention. The essence of the toolkit is the Five Levers for Change model (Figure 1). The model is a set of behavior change principles compressed from scientific literature that are believed to motivate consumers to change their behavior (Inspiring Sustainable Living, 2011; Claessen, Bates, Sherlock, Seeparsand & Wright, 2008).

The first lever, '*Make it understood*', focuses on raising awareness of own behavior to increase relevance to do things differently. The focus of the second lever, '*Make it easy*', is on strengthening the belief that one is able to perform the behavior (self-efficacy) through providing skills, tools and products that make the behavior as convenient as possible. The third lever, '*Make it desirable*', is about making the behavior fit with the actual or aspirational self-image of the target group, for example, via using peers or celebrities as role models. The fourth lever, '*Make it rewarding*', is one of the most basic principles of behavior as most of our behavior is reward driven. Therefore, the focus of this lever is on providing immediate and consumer relevant reward(s), plus providing the evidence that the behavior will also deliver the promised reward(s). Finally, the fifth lever, '*Make it a habit*', focuses on increasing the likelihood of a sustained change in behavior via reinforcing and reminding people to perform the behavior (Inspiring Sustainable Living, 2011; Claessen, Bates, Sherlock, Seeparsand & Wright, 2008).

***Figure 1*. Unilever's Five Levers for Change Model**

The Unilever Lifebuoy soap hand washing program is one example of a behavior change intervention that was developed based on the above mentioned behavior change principles. The purpose of the Lifebuoy 'School of 5' handwashing campaign was to encourage children to wash their hands with soap at key occasions each day in order to reduce diarrheal disease (Nicholson, et al., 2014). The social marketing program consisted of a combination of behavior change strategies as there was more than one barrier to the behavior. For each of the five levers, the team developed activities to motivate children to wash their hands with soap (Figure 2). For example, a glow germ demonstration was developed to make children aware that their hands were not as clean as they thought when not washed with soap, but there were also positive role models in the form of comic superhero characters (who could activate superpowers via washing their hands with soap) and small rewards and reminders were developed to make hand washing with soap truly desirable and rewarding for children (Nicholson, et al., 2014).

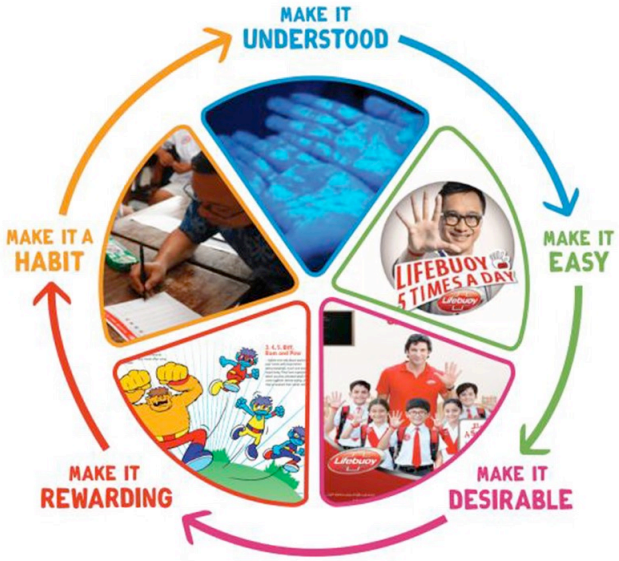

***Figure 2*. Lifebuoy Handwashing Behavior Change Program**

A randomized control trial to evaluate the effective of the intervention in low-income Indian households revealed that the Lifebuoy hand washing program was highly effective in increasing

handwashing frequency in children (Nicholson, et al., 2014). Furthermore, the research by Nicholson and colleagues (2014) showed a 25% reduction in diarrheal disease and a 15% reduction in acute respiratory infections among children in the intervention group compared to those in the control condition. These results indicate that interventions that are designed using a structured approach such as the Five Levers for Change and are based on scientific principles of behavior change can be effective in changing people's behavior. And even more importantly, it can also can result in significant health effects. A larger scale impact on public health will require public-private partnerships to roll-out these types of behavior change program to a broader audience (Nicholson, et al., 2014).

Multiple Behavior Changes

Finally, Unilever's next challenge in the area of behavior change is to achieve multiple behaviour changes, i.e. how to change more behaviors of more consumers at lower costs. As mentioned previously, behavior change best-practice is to develop an intervention targeted at one specific risk behavior. However, the complex environmental and health issues we currently face as a society often require more than one target group and more than one risk behavior to be changed. For example, cardiovascular disease, in addition to smoking and an unhealthy diet, is also associated with physical inactivity (World Heart Federation, 2016). Setting up interventions for each single (risk) behavior would be demanding, both in time and costs. Furthermore, research seems to suggest that people tend to be inconsistent in their sustainability behaviors (Kahn & Dhar, 2006).

This implies that an intervention that successfully increases the occurrence of one pro-environmental behavior (such as recycling paper) unintentionally can lead to an increase of a less environmentally friendly behaviour (such as car driving) (Truelove, Carrico, Weber, Raimi, & Vandenbergh, 2014). Therefore, there is a need to build new theories on how change in one behavior can positively spill over to change in another behavior and how new behaviors can spread from one group to other groups. Building new science requires partnerships with academics in the field. In this context, a research collaboration has been set up between Unilever and Zhejiang University (China) in the area of social diffusion of information to better understand what factors influence information sharing within groups of people. The insights derived from this type of research will help Unilever and others to speed up the spread of new sustainability behaviors (such as water conservation) from early adopters to later adopter groups.

Conclusion

In conclusion, making sustainable living commonplace will require changes in behavior across society. For sure encouraging people to adopt more sustainable behaviors is not an easy task, but it is possible. The Lifebuoy 'School of 5' hand washing campaign demonstrated that when applying a structured approach based on scientific understanding of human behavior, such as Unilever's Five Levers for Change, behavior change interventions can effectively result in change. Finally, building partnerships is crucial to develop new and scalable behavior change interventions. Above all, because motivating consumers to adopt new sustainability behaviors is not something Unilever or any other organisation can do on its own, it needs be done in partnerships with academics, NGO's, suppliers and governments.

Acknowledgements

The document is based on the work and input from a range of people. Specifically, I would like thank Suzanne Einother, Hilde Hendrickx, Sarah Mcdonald, Rene Lion, BV Pradeep, and Richard Wright.

References

Abrahamse, W., Steg, L., Vlek, C., & Rothengatter, T. (2005). A review of intervention studies aimed at household energy conservation. *Journal of environmental psychology*, *25*(3), 273-291.

Claessen, J. P., Bates, S., Sherlock, K., Seeparsand, F., & Wright, R. (2008). Designing interventions to improve tooth brushing. *International Dental Journal*, *58*(S5), 307-320.

Inspiring sustainable living: expert insights into consumer behaviour & Unilever's five levers for change. (2011, November). *Unilever*. Retrieved from https://www.unilever.com/Images/slp_5-levers-for-change_tcm13-387353_tcm244-409796_en.pdf.

Khan, U., & Dhar, R. (2006). Licensing effect in consumer choice. *Journal of Marketing Research*, *43*(2), 259-266.

Kok, G., Lo, S. H., Peters, G. J. Y., & Ruiter, R. A. (2011). Changing energy-related behavior: An intervention mapping approach. *Energy Policy*, *39*(9), 5280-5286.

Lehman, P. K., & Geller, E. S. (2005). Behavior analysis and environmental protection: Accomplishments and potential for more. *Behavior and Social Issues*, *13*(1), 13-32.

Nicholson, J. A., Naeeni, M., Hoptroff, M., Matheson, J. R., Roberts, A. J., Taylor, D., Sidibe, M., Weir, A. J., Damle, S. G., & Wright, R. L. (2014). An investigation of the effects of a hand washing intervention on health outcomes and school absence using a randomised trial in Indian urban communities. *Tropical Medicine & International Health*, *19*(3), 284-292.

Osbaldiston, R., & Schott, J. P. (2012). Environmental sustainability and behavioral science: Meta-analysis of proenvironmental behavior experiments. *Environment and Behavior*, *44*(2), 257-299.

Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology*, *29*(3), 309-317.

Sweet, S. N., & Fortier, M. S. (2010). Improving physical activity and dietary behaviours with single or multiple health behaviour interventions? A synthesis of meta-analyses and reviews. *International Journal of Environmental Research and Public Health*, *7*(4), 1720-1743.

Truelove, H. B., Carrico, A. R., Weber, E. U., Raimi, K. T., & Vandenbergh, M. P. (2014). Positive and negative spillover of pro-environmental behavior: An integrative review and theoretical framework. *Global Environmental Change*, *29*, 127-138.

Unilever sustainable living plan: Small actions big difference. (2010, November). *Unilever*. Retrieved from https://www.unilever.com/Images/unileversustainablelivingplan_tcm13-387356_tcm244-409855_en.pdf.

World Heart Federation. (2016). Cardiovascular disease risk factors. Retrieved from http://www.world-heart-federation.org/cardiovascular-health/cardiovascular-disease-risk-factors.

Biography

Ilse Gortemaker is a Lead Scientist at Unilever Research and Development in Vlaardingen, The Netherlands. She joined Unilever in 1999 and has over 16 years of research experience in consumer behavior and behavior change. The aim of her current role at Unilever is to identify, drive and build new science in the area of Sustainable Behavior together with leading edge external research partners. Correspondence concerning this article should be addressed to Ilse Gortemaker, Olivier van Noortlaan 120, 3133 AT Vlaardingen, The Netherlands.

Keynote Speech III

Social and Behavioral Modeling for a Trustworthy Cyberspace: A Research Framework

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[Abstract] *The ever-increasing dependence of society on the interconnectivity of computing and communicating devices poses serious challenges to government entities, businesses, and individuals. Among these challenges is the protection of critical information – a prize that is paramount to both attackers and defenders. In the midst of these two adversaries is the user, who is constantly inundated with choices concerning issues on the risk, motivation, incentives, ethics, and the legality of cybersecurity. In this paper, we propose a research framework on the study of human behavior in risky-choice situations with the ultimate goal of advancing a trustworthy cyberspace. In doing so, we suggest the development of a behavioral model of how users make decisions involving risk in cyberspace and the validation of the model using Agent-Based Modeling (ABM) and simulation. Specifically, we propose the probability-discounting framework – an established risky-choice procedure in the behavioral sciences – to improve our understanding of the decision-making processes involved in risky cyberspace behavior (see Madden & Bickel, 2010, for a review of the discounting framework). Prospect theory (Kahneman & Tversky, 1979) predicts that cyberspace users should be more responsive to conditions involving potential monetary losses than those only involving potential monetary gains.*

Introduction

To our knowledge, however, no such analyses have been applied to risky behavior in cyberspace. We also suggest the design and implementation of Agent-Based Models (ABMs) (Epstein, 2006) and scenarios that can be used to simulate cyber risks and decision making processes. We hope to assess various theoretical, social, and behavioral models such as expected utility, hyperbolic discounting, and cumulative prospect theory using computer simulations to generate data that are compared with those that are empirically gathered. Based on the data analyses at each iteration, we will continuously improve the ABMs to match the empirical data. Our ultimate goal is to devise Agent-Based Models that best represent the cyber risk decision-making processes in light of probability discounting and value incentives.

A Need

The motivation for the on-going research is based on the need for a solid understanding of the nature of decision making in the cybersecurity domain. The field of behavioral economics has emerged over the last 30+ years as a key behavioral and social science discipline that has greatly improved our understanding of human judgment and decision making in many areas (e.g., financial decision making, substance abuse, obesity, risky sexual behavior).

Using a combination of behavioral and microeconomic principles and procedures, researchers in behavioral economics have found that consumer choice and decision making in various domains defy the

assumption of a rationally behaving agent, assumed by normative and classical economic theory. In contrast, behavioral economics shows that human choice and decision-making tends to be irrational and is strongly influenced by various psychological and perceptual factors. Perhaps most importantly, this improved understanding has led to the development of more optimal intervention strategies aimed at promoting healthier, safer decision making (e.g., Thaler & Benartzi, 2004). Accordingly, the field of behavioral economics has a strong potential to inform our understanding of how both economic and psychological factors interact to affect risky decisions in cyberspace.

Researchers have also realized that, given social systems that are strongly interactive and sensitive to initial conditions, it is very difficult to predict their global outcomes (Borrill & Tesfatsion, 2011). Thus, there is also a strong need for computational simulation models to augment empirical studies on risky behavior in cyberspace.

Behavioral Economics and Trust in Cyberspace

There are a number of empirical regularities documented in the behavioral economics literature that should ultimately be considered in promoting a trustworthy cyberspace, including the availability heuristic, hyperbolic discounting, loss aversion, and the status quo bias, to name a few (Kahneman & Tversky, 2000). Goodman & Lin (2007), for example, have suggested how the availability heuristic can be exploited to increase cybersecurity concerns among users, thus improving cyber safety. Similarly, Farahmand, et al. (2008) have constructed a behavioral economic model to account for perceived risks to information security. Kesan & Shah (2006) have described how research on the status quo bias can explain and help improve the choice of users' security settings. Finally, Bolton, et al. (2004) provide an account of the psychology of trust that is informed by behavioral economics. Specifically, they provide evidence that buyer and seller trust in anonymous online markets is a function of the interaction between social preferences (e.g., fairness) and feedback mechanisms (e.g., reputation statistics).

Utility Functions and Prospect Theory

In economics, utility functions have been used to describe and explain the behavior of consumers (users) within a system of constraint. Traditional, normative economic theory posits that human behavior is rational (e.g., stable preferences and choice patterns, utility maximization), whereas behavioral economists have come to the conclusion that human behavior is best described as irrational. By incorporating psychological factors and processes into utility functions, behavioral economists have been able to describe human behavior with much more accuracy, and this increased precision has led to improvements in altering human behavior for the benefit of society (e.g., Kahneman & Tversky, 2000; Thaler & Benartzi, 2004). One of the areas in which behavioral economics has vastly increased our understanding of human behavior is in the area of *risky decision making*. A prominent behavioral economic theory of risky decision making is Prospect Theory (Kahneman & Tversky, 1979; Tversky & Kahneman, 1992). This theory states that the value function for decision making under uncertainty predicts different degrees of risk sensitivity, depending on the sign or domain of the outcome (e.g., people are risk-prone with monetary losses, but risk-averse with monetary gains). Although this research has substantial implications for decision making involving cybersecurity outcomes, to date, there has been little attempt to evaluate the predictions of prospect theory as it relates to risky decisions in cyberspace (but see, Verendel, 2008). We propose that an adequate understanding of decision making in cyberspace

will require consideration of behavioral economic theories and methods, as exemplified by Prospect Theory and its more modern incarnations.

Discounting (Devaluation) of Outcomes

Recent research in behavioral economics also shows that how much an individual values rewarding and punishing outcomes (e.g., gaining and losing $100) is a systematic function of (a) the time until the occurrence of the outcome and (b) the likelihood of the outcome occurrence; these are empirical phenomena that have been referred to as temporal (delay) discounting and probability discounting, respectively. The concepts of temporal and probability discounting have substantial implications for a range of deficits in decision making, including impulsivity and risky behavior (Madden & Bickel, 2010). Unfortunately, most of the research on discounting has been limited to the temporal domain (i.e., temporal or delay discounting). Substantially less research has been devoted to the study of probability discounting and its potential application to human behavior (Loewenstein & Prelec, 1992; Rachlin, et al. 1991). Furthermore, there have been no prior applications of the probability discounting framework to empirically assess the nature of decision-making among users in cyberspace. This is somewhat surprising given that an understanding of the nature of risky behavior among cyberspace users will be required to effectively promote safe decision making in cyberspace.

Accordingly, a major aim of the ongoing research project is to develop a probability-discounting framework for users making risky decisions in cyberspace. Once the basic framework is established, we will adapt and extend this model to evaluate the experimental factors that alter the degree of risk taking among cyberspace users. At least three objectives will be met through the development and extension of a probability discounting framework for decision making with cybersecurity outcomes. First, it will allow us to study the nature of risky behavior in cyberspace, which will lay the groundwork for further extensions of this framework to other emerging issues in cyberspace. This could subsequently inform our efforts to combat the cybersecurity problems we face at the individual, group, and societal levels. Second, the probability-discounting framework for studying cybersecurity decision making will allow us to evaluate some of the key predictions of Prospect Theory and other prominent behavioral economic theories of decision making under uncertainty. Finally, we will evaluate the applicability of various behavioral and neuroeconomic equations (e.g., double-exponential, quasi-hyperbolic, hyperboloid) to model the empirically obtained data. Model fitting and building is an essential endeavor in the decision sciences because the extent to which a particular model can describe the data has important practical implications, as various models invoke fundamentally different decision-making mechanisms, and different decision-making mechanisms suggest that different approaches will be needed to address decision makers in cyberspace.

Incentives and Motivations for Cybersecurity

There has been a fair amount of research on incentivizing cybersecurity. Fryer, Moore, & Chown (2013) conclude that the costs of imposing liability as a means of incentivizing internet security is not economically viable. In Wellman, Kim, & Duong (2013), incentives for compliance with network protocols have been studied. The study utilized a simulation-based approach to game-theoretic analysis of protocol compliance, concluding that the benefits of protocol compliance are strong for network nodes that are under attack. Baryshnikov (2012) provides a study on the investment level of mitigating the risks

of cyber vulnerabilities. The findings strongly support the generality of Gordon-Loeb's 1/e rule on IT security investment (Gordon & Loeb, 2002).

Modeling and Simulation of Human Behavior

Simulation analysis is a problem solving technique that utilizes statistical sampling theory to model complex probabilistic physical systems (Hoover & Perry, 1989). With the advent of fast and powerful computing devices, the simulation of increasingly complex models that resembles realistic system behavior is quite attainable.

Models of human behavior for various applications such as crowd evacuation (Pelechanoi & Badler, 2006), mobile computing virus propagation (Gao & Liu, 2013), and plan recognition (Mao, Gratch, & Li, 2012) have been proposed and studied. Ustun (2009) described a closely related work on the modeling and simulation of physical security in light of human behavior. Another relevant work by Bai, et al. (2012) involves the simulation and modeling of trustworthy process management using a stakeholder-oriented approach.

A game-theoretic approach to modeling information security investment with two independent decision parameters, a protection level and a self-insurance level, was pursued by Grossklags, et al. (2008). A related work on the economics of security, coined as the Compliance Budget paradigm, was introduced by Beautement, et al. (2008).

Agent-Based Modeling

The Agent-Based Modeling (ABM) technique, a combination of constructive and classical modeling approaches, incorporates a collection of autonomous entities, so called agents, with built-in properties and functionalities (corresponding to data and methods, respectively in object-oriented computing), which interact in a computational world (Borill & Tesfatsion, 2011). In this approach, society can be regarded as a collection of distributed computational devices and, as a whole, social dynamics or interactions, as a type of computation (Epstein, 2006). Successful applications of agent-based modeling and simulation include domains of business, economics, biology, military, society, and infrastructures (Macal & North, 2005).

In an ongoing research project, we are designing and implementing agent-based models and scenarios that can be used to simulate cyber risks and decision-making processes. We will validate various theoretical, social, and behavioral models such as expected utility, hyperbolic discounting, and cumulative prospect theory using computer simulations to generate data that are compared with empirical data. By comparing behavior data gathered during the experiments with those computed by simulation, we can assess the models of human behavior upon which decisions on cyber risks are made. Epstein (2006) stated that the common goal of descriptive ABM research is to provide generative explanations for observed empirical regularities. Such is our goal for this research project.

In order to facilitate maximum utilization and widespread adoption, we plan to build upon a free and open source agent-based modeling toolkit, the Recursive Porous Agent Simulation Toolkit (Repast) (Repast Suite, 2014). The Repast modeling environment provides a sophisticated scheduler for both time step and discrete-event simulations and enables storing and displaying event states (Macal & North 2005).

Conclusion

We presented a research framework on the study of human behavior in risky-choice situations with the ultimate goal of advancing a trustworthy cyberspace. In doing so, we began to develop and describe a

behavioral model of how users make decisions involving risk in cyberspace, and we aim to validate the behavioral model using Agent-Based Modeling (ABM) and simulation. Our aim is to resolve the following research questions:

a) What is the nature of probability discounting among users making risky decisions in cyberspace, and to what extent do the empirical data generalize to other issues in the cybersecurity domain as well as other domains (e.g., financial decision making)?

b) What factors alter the degree of risk-seeking and risk-aversion for users making security decisions in cyberspace?

c) What model (or models) best describe the risky cyberspace decision-making process(es) evidenced?

d) Do new, alternative decision-making models provide a better description and explanation for the empirical data on risk in cyberspace?

e) Could ABM research provide generative explanations for observed empirical regularities on cybertrust?

f) How well do agent-based models represent the cyber risk decision-making processes in light of probability discounting and value incentives?

References

Bai, X., Huang, L., Zhang, H., & Koolmanojwong, S. (2012). Hybrid modeling and simulation for trustworthy software process management: A stakeholder-oriented approach. *Journal of Software: Evolution and Process, 24*(7), 721-740.

Baryshnikov, Y. (2012). IT security investment and Gordon-Loeb's 1/e rule. *11th Workshop on the Economics of Information Security (WEIS2012).* Berlin, Germany.

Beautement, A., Sasse, M. A., & Wonham, M. (2009). The compliance budget: Managing security behaviour in organizations. *Proceedings of the 2008 Workshop on New Security Paradigms* (pp. 47-58). ACM.

Bolton, G., Katok, E., & Ockenfels, A. (2004). How effective are electronic reputation mechanisms? An experimental investigation. *Management Science, 50*(11), 1587-1602.

Borrill, P., & Tesfatsion, L. (2011). Agent-based modeling: The right matehmatics for the social sciences? In J. Davis, & D. W. Hands, (Eds.). *Elgar Companion to Recent Economic Methodology.* Cheltenham, UK: Edward Elgar Publishers.

Epstein, J. (2006). *Generative social science: Studies in agent-based computational modeiling.* Princenton, NJ: Princeton University Press.

Farahmand, F., Attallah, M., & Konsynski, B. (2008). Incentives and perceptions of information security risks. *Proceedings of the 29th International Conference on Information Systems (ICIS).* Paris, France.

Fryer, H., Moore, R., & Chown, T. (2013). On the viability of using liability to incentivize internet security. *12th Workshop on the Economics of Information Security (WEIS 2013).* Washington, D.C.

Gao, C., & Liu, J. (2013). Modeling and restraining mobile virus propagation. *IEEE Trans. on Mobile Computing, 12*(3), 529-541.

Goodman, S., & Lin, H. S. (2007). *Toward a safer and more secure cyberspace.* Washington, D.C.: National Research Council and National Academy of Engineering.

Gordon, L., & Loeb, M. (2002). The economics of information security investment. *ACM Trans on Information and Systems Security, 5*(4), 438-457.

Grossklags, J., Christin, N., & Chuang, J. (2008). Secure or insure? A game-theoretic analysis of information security games. *Proc. of the 17th International Conference on World Wide Web,* (pp. 209-218). Beijing, China: ACM.

Hoover, S., & Perry, R. F. (1989). *Simulation. A problem solving approach.* Addison-Wesley Publishing Co., Inc.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica, 47*, 263-291.

Kahneman, D., & Tversky, A. (2000). *Choices, values, and frames.* Cambridge, MA: Cambridge University Press.

Kesan, J., & Shah, R. (2006). Setting software defaults: Perspectives from law, computer science and behavioral economics. *Notre Dame Law Review, 82*(2), 583-634.

Loewenstein, G., & Prelec, D. (1992). Anomalies in intertemporal choice: Evidence and an interpretation. *The Quarterly Journal of Economics, 107*(2), 573-597.

Macal, C., & North, M. J. (2005). Tutorial on agent-based modeling and simulation. In M. Kuhl, F. Steiger, F. Armstrong, & J. Joines, (Eds.). *Proceedings of the 2005 Winter Simulation Conference.*

Madden, G., & Bickel, W. K. (2010). *Impulsitivity: The behavioral and neurological science of discounting.* Washington, D.C.: American Psychological Association.

Mao, W., Gratch, J., & Li, X. (2012). Probabilistic Plan Inference for Group Behavior Prediction. *IEEE Intelligent Systems*, 27-36.

Pelechanoi, N., & Badler, N. I. (2006). Modeling crowd and trained leader behavior during building evacuation. *IEEE Computer Graphics and Applications*, 80-86.

Rachlin, H., Raineri, A., & Cross, D. (1991). Subjective probability and delay. *Journal of the Experimental Analysis of Behavior, 55*, 223-244.

Repast Suite. (2014). Retrieved January 06, 2014, from Sourceforge: http://repast.sourceforge.net

Thaler, R. H., & Benartzi, S. (2004). Save more tomorrow: Using behavioral economics to increase employee saving. *Journal of Political Economy, 112*(S1), S164-S187.

Tversky, A., & Kahneman, D. (1992). Advances in prospect theory: Cumulative representation of uncertainty. *Journal of Risk and Uncertainty, 5*, 297-323.

Ustun, V. (2009). *Human behavior representation in physical security systems simulation.* Auburn, AL: Auburn University.

Verendel, V. (2008). *A prospect theory approach to security.* Chalmers University of Technology/Goteborg University.

Wellman, M., Kim, T. H., & Duong, Q. (2013). Analyzing incentives for protocol compliance in complex domains: A case study of introduction-based routing. *12th Workshop on the Economics of Information Security (WEIS 2013).* Washington, D.C.

Biographies

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Mexico Tech. Before joining JSU in 1994, he was the chairman of the Computer Science department at Kansas Wesleyan University in Salina, Kansas. In 1996, Dr. Francia is a recipient of one of the five national Microsoft Awards in Innovation in Higher Education. His research interests include Computer Security, Digital Forensics, Database and Data Mining, Embedded Systems, Computer Networks, Software Testing, Neural Networks and Parallel Processing.

Dr. Todd McKerchar, Ph.D., BCBA-D (Board Certified Behavior Analyst-Doctoral), Associate Professor of Psychology, Jacksonville State University, Alabama, USA. He got his PhD in Behavioral Psychology from University of Kansas. He is intrigued with applying concepts and procedures from behavioral economics to better understand human choice and behavioral decision making. With his colleagues and students, he conducts studies on temporal and probability discounting processes. The goals of this research are to (a) determine how these processes are affected by experimental manipulation (e.g., amount, sign) and (b) describe the quantitative characteristics of the functions that best describe these processes. Ultimately, such work may have implications for the understanding of impulsive and risky behavior. Some of his other interests include the history, theory, and philosophy of behavior analysis and their relation to other psychological systems.

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Language and Migrant Children's Self-Recognition of Identity

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[Abstract] *Language experiences of children migrating from the countryside to cities influence their beliefs of language and their recognition of identity. This study approaches a case study of migrant children in the seaport city of China, Ningbo, from the sociological, socio-psychological and psychological perspectives, which reveals: (1) It is "hukou" not language that plays a decisive part in one's self-recognition; (2) the chain migration reinforces the migrant children's use of their hometown dialect and recognition of regional identity.*

[Keywords] *migrant children; identity; language; Mandarin; the Ningbo dialect; China*

Introduction

This study approaches self-recognition of identity among migrant children in China, particularly who have migrated with their parents from the underdeveloped countryside to the city of Ningbo, a prosperous port in Zhejiang Province, in southeast China. There are an increasing number of news reports and research papers focusing on the psycho-social problems of unattended children who are left in their underdeveloped rural hometowns, however, those children who live with their parents working in cities (termed as "migrant workers") have not received the same attention as those unattended although they also have to experience a difficult period psychologically to adapt to city life.

The *2012 Report on Development of Chinese Internal Immigrants* reveals that about 17% of China's population (about 230 million people) have moved from rural areas to China's towns and cities. It was reported there were 4300,000 migrant workers in Ningbo in 2011, resulting in an extremely high number of migrant workers relative to registered citizens (76:100) (Shen & Fan, 2012). The statistics published in the *2011 Report of Development of Population in Ningbo* shows that 265,000 children were attending elementary and junior middle schools in public schools and special private schools for migrant children.

What has driven this author to so this research is that my parents have six rooms for rent in the outskirts of Ningbo, where every local family has several rooms for rent. Whenever I go and visit my parents, I find interesting things. In these crowded suburbs and rural areas adjacent to the city of Ningbo, a small room of about 10 square meters means the bedroom, living room, kitchen and bathroom to the migrant workers. The children usually do not have their own bedrooms. Such living conditions are obviously inferior to the local people. Meanwhile, most of the migrant children cannot speak the Ningbo dialect. The migrant workers usually have a circle of their own and the migrant children seldom play with the local kids even if they live in the same village.

Research Questions

These interesting phenomena imply a formation of insiders and outsiders for migrant children. How they look at their own identities, thus, becomes a core question. This study particularly focuses on migrant children's language use and the perception of their own identity to explore the possible social and psychological causes in this regard. What languages do the migrant children speak in school and in their families? What has made them live in such a rather closed circle even when they are in the same class and

in the same village with local kids? Do the migrant children from the same provinces or speaking the same dialect form an ingroup in some sense?

Theoretical Framework

Giles and his co-researchers (1977) argued that language status is a powerful indicator of language vitality and affects a minority group's attitude towards language. Blommaert (2006) further observes that even slight differences in a dialect enable both children and their teachers to differentiate between "us" and 'them" in terms of ethnicity, social status and perceived level of education. As to accounting for interethnic behavior and the link between language use and construction of identity. Landry and Allard (1994) put forward a model of additive and subtractive bilingualism, which consists of three layers of analysis (sociological, socio-psychological and psychological) to explain the objective, interactional and subjective factors affecting language use. They argue that an individual's experiences with other members of the ethnolinguistic group are vital to the link between objective factors (sociological level) and subjective factors (psychological level).

This model establishes the relationship between the individual's language use and the society. The interactive and complementary processes involved in this relationship leads to many types of bilingualism. According to Landry and Allard (1994), there is addictive bilingualism and subtractive bilingualism. Addictive bilingualism develops when conditions favor the development and maintenance of the first language while learning and using a second language. Subtractive bilingualism occurs when learning a second language is associated with loss of one's first language and culture.

Based on this assumption, Hamid (2011) believes that an individual's network of linguistic contact should be investigated in this social context of family because family is the primary unit of social organization. For this study, I also assume school plays an equally important role in the individual's linguistic contact because the migrant children I probed are school kids. They spend most of their time at school with their peers and teachers and form a steady interpersonal relationship with them.

This study involves three languages: Mandarin, the Ningbo dialect and the kids' hometown dialects. As I observed before this study, the vast majority of the migrant kids cannot speak the Ningbo dialect. They usually speak Mandarin at school, and Mandarin and their hometown dialects with their parents and relatives from their hometown. Therefore, this study is in nature on bilingualism. The third language, the Ningbo dialect, can be considered as a complementary part of this study. Of course, it is also very interesting to explore the very small number of kids who can speak the Ningbo dialect and to see on what occasions, and with whom, the kids speak it and to find whether they consider themselves as a Ningbo citizen.

Data and Method

Migrant children in this study refer to those who do not have Ningbo "hukou" (an official status as a resident of Ningbo municipality). Data was collected for this study over a 90-day period from three classes of 139 migrant children in three special schools for the children of migrant children and 10 classes of 139 migrant children in the public schools (where the local kids and the migrant children study together) in Yinzhou, Haishu and Jiangbei, three of the five metropolitan districts of Ningbo. The methodology of data collection included written questionnaires for these children and one-to-one interviews with 46 students, respectively, in these two groups. I also interviewed 10 teachers and 26 parents, respectively, in these two groups. I intended to compare these two groups to see whether there

were any differences in their use of Mandarin and dialects, in the hope of having a better understanding of the relationship between language use and contexts and their influence on the construction of identity.

Results and Discussions

Since the questionnaires were done in class under the guidance of their teachers, all 278 questionnaires with their names were returned to me and the students answered all of the questions. The results of the questionnaires are as follows in Table 1:

Table 1. ***Language Use of Migrant Children***

Questions	**Migrant Children in Special Schools**	**Migrant Children in Public Schools**
Born in Ningbo	5	12
Ningbo dialect	0	2
All Mandarin in school	139	139
All Mandarin at home	0	0
Partly Mandarin, partly dialect with parents	128	137
All dialects with parents	11	2
All Mandarin with kids speaking the same dialect at home	34	46
All dialect with kids speaking the same dialect at home	21	10
Partly Mandarin, partly dialect with kids speaking the same dialect at home	84	83
Close friends with local kids	0	1
Villagers and relatives migrating to Ningbo	126	34
Willingness to return to hometown	2	0
Willingness to stay in cities	137	139
Self-recognition of Ningbonese	0	0
Self-recognition of a person from hometown	138	101
Having no idea of identity	1	38

From the above table, it can be seen that all of the migrant children speak Mandarin at school, and most of them speak both Mandarin and their hometown dialects with their parents. None of them consider them themselves as a Ningbo citizen even though 17 students in these two groups were born in Ningbo. In general, they have very strong willingness to stay in cities.

Compared with those in special schools, there are more migrant children in the public schools who were born in Ningbo. More migrant children in the public schools speak Mandarin with their peers from the same hometown and have no idea of their won identities. On the other hand, more migrant children in special schools have relatives also migrating to Ningbo and speak merely their dialects with their parents and their peers from the same hometown.

The questionnaires presented me with some inspiring questions again. Why do those in special schools have the tendency to be more accustomed to speaking their dialects? The answer may lie in that they have more relatives in Ningbo. In the interviews with the parents at their homes, I found that those migrant children usually live in the same village with their relatives and some of the families even share rooms with their relatives. They still live in the Chinese traditional way of extended family. Usually, when someone in the extended family finds a job in the cities and then he/she will provide his/her relatives or villagers with the information of other potential job vacancies. Then these previous immigrants will usually provide their relatives or villagers with transportation, initial accommodations

and even employment in the city they are in. This is termed as chain migration according to McDonald & McDonald (1964). In some villages adjacent to the city of Ningbo, it is not rare to see that the relatives and villagers from another province live in a compact community and form a rather closed circle of their own, as if they were still in their hometown.

For the children who are in this compact community, they have a strong sense of belonging to their hometown. They are most likely to speak their hometown dialects with their peers living in the same community. I observed a kid who lives with his grandparents who are unable to speak good Mandarin. When I was in their home, I heard them speak their dialect without any Mandarin, but the kid communicates with his parents in both Mandarin and their dialect. When asked whether he could speak the Ningbo dialect or not, his answer was definitely no, but he would like to stay in the cities in the future.

Then I had a further talk with the child and came to understand that he felt that the local kids were unwilling to communicate with the migrant kids like him and he sometimes had a feeling of separation. Therefore, in fact, for most of the migrant kids, it seems that they have no opportunities to acquire the Ningbo dialect when I found that the small supermarket in the village was run by one of his relatives. Later, I also learned that there were more migrant workers than the registered Ningbo citizens and most of the Ningbo citizens still living in the village were the aged, most of whose next generation have moved to the city or apartments in the suburbs around the city. Even if their sons, daughters and grandchildren remain in the village, they try every means to send their kids to the public schools in the city to receive better education.

I also went to visit the two kids who can speak the Ningbo dialect, which I hoped would provide some insights into the complexity between language and identity. It is not surprising to find that these two kids have native relatives, one of whom was raised among the local kids. However, in spite of that, when asked about their identity, they seemed confused by my question and replied that they never thought about that. Later, they said they believed they were Chinese and that was enough. I talked with their parents respectively about this afterwards. In their opinions, the identity of a Ningbo citizen depends on whether they have “hukou” or not, which may account for why none of the migrant children do not think that they are Ningbonese even though 17 of them were born in Ningbo and two of them can speak the Ningbo dialect.

From the table, we can see that the kids in special schools have a comparatively clear sense of regional belonging rather than those in public schools. It is astonishing to see in the statistics that 38 migrant children in the public schools don’t have any idea of regional identity, while merely one student in the special schools does so. In the context of the public schools, the migrant children are in mixed classes with the local kids. Most of the teachers respect each student and the class teacher usually visits each student’s parents before a semester begins or after a semester ends. Generally speaking, there are more colorful extracurricular activities in the public schools than the special school in Ningbo and the parents of the migrant kids in the public schools are richer than those in the special schools. While talking about the future with the parents of the two kids who can speak the Ningbo dialect, they both expressed their plans to buy a small apartment in the city of Ningbo to become officially registered citizens, hoping that their sons would not feel alienated from the local kids. Some of the kids’ parents in the public schools felt this same way. Compared with the parents in the special schools, more parents in the public schools have plans to own real estate in Ningbo. This may explain why more kids in the public schools do not have a self-recognition of their regional identity from their hometown.

As far as the Ningbo dialect is concerned, all the interviewees did not think that it stood for the symbol of a Ningbonese because there are many local kids who are unable to speak this dialect, although most of the local kids can understand it. At the same time, a standard accent of Mandarin is considered as the symbol of better education and people who can speak good Mandarin usually have more opportunities to be hired and promoted in companies. This explains why the parents do not encourage their kids to learn the Ningbo dialect, but insist on dialogue with their kids partly in Mandarin even if majority of the parents have received no more than nine years' education themselves and can not speak it very well. Therefore, apart from its wide use as a standard language in China, the motivation to learn Mandarin well is also governed by pragmatic reasons, such as the importance of Mandarin in terms of the job market.

Interviews with some girl students also revealed their frustrations when they are unable to find proper expressions in their hometown dialect. After many years' exposure to television programs, they found that it was more comfortable to express themselves in Mandarin. Besides, some students expressed their unwillingness to communicate with their parents in any language, because their parents urged them to learn, learn and learn. However, this should be considered a factor not only attributed to the migrant parents, but to all "tiger" parents in China.

It seems that it is not easy for migrant children to form friendships with the local kids. There was only one child that believed that she has a local friend. When discussing her local friend in the interview, the fifteen-year-old girl shyly said that it was her cousin in Ningbo. They often do their homework and play games together after class and over weekends.

It was also inspiring when I saw a kid who talked to his teacher after class in their hometown dialect although it was not commonly seen. Mandarin is required in class, however, their use of the dialect can merely be considered as a personal choice rather than public behavior. The student used some kind of "linguistic intimacy" to establish a closer relationship with the teacher.

Conclusion

The above analysis shows that "hukou", not language, plays a decisive part in one's self-recognition of identity among migrant children in Ningbo. The wider use of Mandarin, its practical function and the official request of using it in class decides the more prestigious status among migrant kids. As shown by a previous study of migrant children in Ningbo, chain migration reinforces construction of regional identity from their hometown among the young generation, which is maintained by celebrating traditional festivals and sharing social resources (Wang, 2012). It is also visible that there is not much friendship between the migrant kids and the local kids in the public schools due to the considerations of social, economical and sub-cultural factors and a lack of common background between these two groups

However, these conclusions are based on research that merely covered 278 migrant kids in thirteen schools in a particular seaport of China. Wider samplings in more cities may provide more convincing results in the future studies in this regard.

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References

Blommaert, J. (2006). *Encyclopedia of language and linguistics*, (pp. 510-522). Berlin, Germany: Springer.

CPFPA. (2012). Committee of population and family plan announced "2012 Report on Development of Chinese Internal Immigrants". Retrieved on Aug. 7, 2012 from http://www.gov.cn/jrzg/2012-08/07/content_2199409.htm.

DPN. (2012). Report of development of population in Ningbo, 2011 (Abstract). Retrieved on Aug. 7, 2012 from http://gtog.ningno.gov.cn/art/2012/6/20/art_13266_917749.html.

Giles, H., Bourhis, R. Y., & Tayor, D. M. (1977). Towards a theory of language acquisition. *Journal of Multilingual and Multicultural Development, 3*, 17-40.

Hamid, S. (2011). *Language use and identity.* Bern, Switzerland: Peter Lang.

Landry, R., & Allard, R. (1994). Additive bilingualism, schooling and special education: A minority group perspective. *Canadian Journal for Exceptional Children*, *3*(4), 89-106.

McDonald, J. S., & McDonald, L. D. (1964). Caught in a "West/China Dichotomy": Doing critical sociolinguistic ethnography in Zhejiang schools. *Journal of Language, Identity, and Education*, *10*, 164-185.

Shen, L., & Fan, L. (2012). The percentage of migrant worker to registered citizens up to 76:100. Retrieved on Jan. 20, 2012 from http://news.cnnb.com.cn/system/2012/06/20/007357889.html.

Wang, G. (2012). Language use and identity: Migrant children in Ningbo, China. *Proceedings of the Second International Conference on Law, Language and Discourse: Multiculturalism, Multimodality and Multidimensionality.* Marietta, USA: The American Scholars Press.

The Relationship Between Leader Motivating Language and Employee Personal Initiative: A Moderated Mediation Model

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[Abstract] *Based on Motivating Language Theory, the present study built a moderated mediation model to examine multiple mediating effects of affect-based and cognition-based trust on the relationship between leader motivating language (ML) and employee personal initiative (PI), and the moderating effect of leader feedback availability on the second stage of indirect effects. This model was verified with a sample of 237 supervisor-subordinate dyads from the Yangzi delta area of China. Conducting a series of analyses with PROCESS, we only found a significant mediating effect of affect-based trust, but not of cognition-based trust from ML to PI. As for testing of second stage of moderated mediating effects, however, we found the significant conditional indirect effects from ML to PI. Specifically, when employees perceived of a higher level of feedback availability, there were significant indirect effects of ML on PI only through affective trust, which reflected a social exchange function of affective trust. However, when employees reported a lower level of feedback availability, there were significant indirect effects of ML on PI only via cognitive trust, which exerted a social loafing function of cognitive trust.*

[Keywords] *personal initiative; motivating language; affect-based trust; cognition-based trust; feedback availability*

Introduction

After the economic crisis in 2008, there was a challenge for organizations to change and transform in the new competitive landscape. In an organizational changing process, employees' action and response to change is very crucial. Frese and Fay (2001) mention that a mechanism driven by transformational change in all societies may rely on the idea of personal initiative (PI) of employees. PI is defined as a self-starting, proactive and persistent behavior, and has drawn research interest for over years (De Dreu & Nauta, 2009; Fay & Frese, 2001; Frese, 2007; Frese & Fay, 2001; Frese, Kring, Soose, & Zempel, 1996). PI is a self-initiated employee behavior, but it is also influenced by contextual factors. Leadership is one of influencing contextual factors toward PI. However, we have noticed that there is a lack of research conducted on PI development process through a perspective of leader-member communication. Recently, several researches stress the important role of a leadership language contributing to employees' behavior such as an increase in job performance, (Mayfield & Mayfield, 2012; Sullivan, 1988), creativity (Wang, Fan, Hsieh, & Menefee, 2009), job satisfaction and commitment (Madlock, 2013), and attendance (Mayfield & Mayfield, 2007, 2009). Based on Motivation Language Theory (Sullivan,1988), we propose a hypothesized model to explain the psychological mechanisms underlying the relationship between leaders motivating language (ML) and PI.

Our study contributes to the literature on PI in three points: First, our model develops the motivating language as an antecedent that influences the PI development process, which emphasizes the importance of leader language's role. Second, the mediating role of affective and cognitive trusts in PI developing process implicitly emphasizes the important role of interpersonal trust and facilitates a better understanding between leader speech acts and PI (Brower, Fiol, & Emrich, 2007; Burke, Sims, Lazzara,

& Salas, 2007). Finally, the moderator role of feedback availability (FA) acts as a boundary condition of our mediating mechanism, reflecting a dynamic process of leader-member interaction.

The following hypotheses will be investigated:

H1. *In the construct level, we hypothesize that overall leader motivating language is positively related to employee PI.*

H2: *ML is positively related to affect- and cognition-based trust.*

H3: *Both affect- and cognition-based trust are positively related to employee PI.*

H4: *The relationship between ML and employee PI is mediated by both affect- and cognition-based trust.*

H5: *FA moderates the indirect effect of ML on employee PI via affect-based trust such that the effect is stronger when supervisors display a higher level of FA to their subordinates.*

H6: *FA moderates the indirect effect of ML on employee PI via cognition-based trust such that the effect is stronger when supervisors display a lower level of availability to their subordinates.*

Method

Participants and Procedure

We distributed 350 sets of questionnaires and received 239 sets in return. Only two out of 239 returned questionnaires were found to have some missing values and thus, were not included in the data analysis process. The effective recovery rate was 67.7%. The sampling procedure was as follows:

1. We made contact with each company's coordinator who held a position of senior executive or human resource manager;
2. Each representative coordinator randomly selected the dyads of supervisors and subordinates to participate in this study.

Our sampling included a total of 103 supervisors and the ratio of supervisors to subordinates was 2.3. In the survey, supervisors were required to evaluate the degree of PI behavior of their subordinates, whereas subordinates were required to report the perceived level of leader motivating language, affect-based and cognition-based trust, feedback availability, and some demographic variables.

Measures

Motivating Language

Following Mayfield and Mayfield (2012), we measured ML with 9 items which was reduced from the original version of 24 items. The Cronbach's alpha for overall motivating language was 0.89; and that for direction-giving language, empathetic language, and meaning-making language were 0.84, 0.78, and 0.83, respectively.

Trust

We adopted McAllister's (1995) scale to measure affect-based and cognition-based trust. The Cronbach's alphas in the current study for affect-based and cognition-based trust were 0.87 and 0.86, respectively.

Supervisor Feedback Availability

Following Steelman, Levy and Snell (2004), we measured subordinate perceived FA with the 5-items Source Availability subscale extracted from Feedback Environment Scale. The Cronbach's alpha was 0.61; this was relatively small in our research.

Supervisor-Rated PI

We adopted a seven-item scale from Frese, Fay, Hilburger, Leng, and Tag (1997) to measure supervisor-rated PI. The Cronbach's alpha was 0.88.

Analysis Strategy

In order to test the hypothesized multiple mediation model and second-stage moderated-mediation model, we used a computational tool called PROCESS, which is one of the SPSS macro program developed by Hayes (2012). The function of PROCESS can test various types of mediation and moderation models, and integrated models proposed by Edwards and Lambert (2007), Preacher, Rucker, and Hayes (2007), Preacher and Hayes (2008), and Muller, Judd, and Yzerbyt (2005). PROCESS not only generates a report of direct and indirect effects in multiple mediators models, but also estimates conditional direct and indirect effects in moderation models with multiple mediators (also see PROCESS documentation; Hayes, 2012). Unlike the traditional causal steps method (Baron & Kenny, 1986) and the normal theory-based product-of-coefficient strategy (Sobel, 1982), bootstrapping is preferred in testing indirect effects by PROCESS. PROCESS provides both bias-corrected and percentile bootstrap confidence intervals for various indirect effects.

Results

We conducted a series of analysis to test our hypothesized models with the procedure of PROCESS. Table 1 reports the means, standard deviations and zero-order correlations of our key measures in our study.

Table 1. ***Means, Standard Deviations and Zero-Order Correlations***

Variable	M	SD	1	2	3	4	5	6	7	8
1. Gender	1.49	.05	—							
2. Tenure	5.78	4.51	-.02	—						
3. Education	2.78	.92	.08	.01	—					
4. ML	3.64	.67	.07	-.22	.09	—				
5. Affect-based trust	3.88	.68	.04	.17	.22**	.69**	—			
6. Cognition-based trust	4.03	.57	.05	-.05	.15*	.64**	.78**	—		
7. FA	3.60	.58	-.05	.06	.15*	.38**	.41**	.39**	—	
8. PI	3.75	.56	.17*	-.05	.17**	.39**	.42**	.38**	.18**	—

*Note. N= 237, †p < 0.10. * p < 0.05. ** p < 0.01, all are 2-tailed.*

Tests of Multiple Mediators Model

We used PROCESS (Model 4) to test the hypothesized model with two parallel mediators through which ML could influence employees' PI behavior. ML is positively related to employees' PI after controlling for the demographics ($\beta_{\text{total effect}} = .33$, $p < .001$). Thus, H1 is supported.

Next, we assessed the path from independent variables to mediators and the path from mediators to outcome corresponding to H2 and H3. ML is positively related to affective trust and cognitive trust respectively (β = .68 and .55, all ps < .001). Therefore, the paths from independent variables to mediators are supported. Affective trust is positively related to PI after controlling ML (M9: β = .18, $p < .05$). However, cognitive trust did not reach a significant relationship with PI after controlling ML (M9: β = .08, $p > .05$). Thus, H3 is partially supported.

We bootstrap bias-corrected confidence intervals (20,000 samples, 95% CI) for multiple indirect effects via both trusts. ML has a significant indirect effect on PI via affect-based trust (β = .12, 95% CI: .01 - .25) but not via cognition-based trust (β = .04, 95% CI: -.07 - .14). There is only one mediated path from ML to PI and it is a partial mediation model because of a significant direct path from overall ML to PI(β = .16, $p < .05$).

Tests of Second-Stage Moderated Mediation

We also used PROCESS to test our second-stage moderated mediation model in H5 and H6. Following the procedure of PROCESS, we repeatedly sampled 20,000 times from the observed data and employed the bias-corrected bootstrap to empirically approximate the confidence interval for all of the conditional indirect effects in this section. First, the result showed that FA significantly moderated the effect of cognitive trust on PI (β = -0.31, $p = 0.05$), but did not significantly moderate the effect of affective trust on PI (β = 0.21, $p = 0.12$).

Second, the results exhibited that when employees perceive a high level of FA from their supervisor, ML will have a significant indirect effect on PI via affective trust (β = .23, 95% CI: .04 - .44), but not via cognitive trust (β = -.05, 95% CI: -.22 - .09). When employees perceive a low level of FA from their supervisor, ML will have a significant indirect effect on PI via cognitive trust (β = .14, 95% CI: .02 - .27), but not via affective trust (β = .06, 95% CI: -.07 - .20). Thus, H5 and H6 are supported.

Conclusion

Our findings emphasize the importance of studying the integrated moderated mediation effect of ML, trust in leadership, and FA on employee PI. Specifically, the results of two-mediator model suggest that ML has a significant indirect effect on PI via affective trust, but not via cognitive trust. The conditional indirect effect analysis, however, reveals that FA moderates both indirect effects of ML on PI, in which cognitive and affective trust play different indirect effects, contingent on different levels of FA.

References

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology, 51*(6), 1173-1182.

Brower, H. H., Fiol, C. M., & Emrich, C. G. (2007). The language of leaders. *Journal of Leadership Studies, 1*(3), 67-80

Burke, C. S., Sims, D. E., Lazzara, E. H., & Salas, E. (2007). Trust in leadership: A multi-level review and integration. *The Leadership Quarterly, 18*(6), 606-632.

De Dreu, C. K. W., & Nauta, A. (2009). Self-interest and other-orientation in organizational behavior: Implications for job performance, prosocial behavior, and personal initiative. *Journal of Applied Psychology, 94*(4), 913-926.

Fay, D., & Frese, M. (2001). The concept of personal initiative: An overview of validity studies. *Human Performance, 14*(1), 97-124.

Frese, M. (2007). The psychological actions and entrepreneurial success: an action theory approach. In J. R. Baum, M. Frese & R. A. Baron (Eds.), *The Psychology of Entrepreneurship,* (pp. 151-188). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Frese, M., & Fay, D. (2001). Personal initiative: An active performance concept for work in the 21st century. *Research in Organizational Behavior, 23*(0), 133-187.

Frese, M., Kring, W., Soose, A., & Zempel, J. (1996). Personal initiative at work: Differences between East and West Germany. *The Academy of Management Journal, 39*(1), 37-63.

Madlock, P. E. (2013). The influence of motivational language in the technologically mediated realm of telecommuters. *Human Resource Management Journal, 23*(2), 196-210.

Mayfield, J., & Mayfield, M. (2007). The effects of leader communication on a worker's intent to stay: An investigation using structural equation modeling. *Human Performance, 20*(2), 85-102.

Mayfield, J., & Mayfield, M. (2009). The role of leader motivating language in employee absenteeism. *Journal of Business Communication, 46*(4), 455-479.

Mayfield, J., & Mayfield, M. (2012). The relationship between leader motivating language and self-efficacy: A partial least squares model analysis. *Journal of Business Communication, 49*(4), 357-376.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological Methodology, 13*(1982), 290-312.

Sullivan, J. J. (1988). Three roles of language in motivation theory. *Academy of Management Review, 13*(1), 104-115.

Wang, C. W., Fan, K. T., Hsieh, C. T., & Menefee, M. L. (2009). Impact of motivating language on team creative performance. *Journal of Computer Information Systems, 50*(1), 133-140.

An Interrogation Assisting System Based on Psychological Behavior Analyses of the Suspects

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[Abstract] *During social changes, modern information technology is the best way to address major problems relating to operational difficulties and information density in criminal interrogations caused by human psychological reasons. This paper aims at designing an IT-oriented interrogation assisting system (IAS) based on analyses upon suspects' psychological and behavioral aspects, integrating studies on psychology, physiology, criminal investigation, and information science, taking into consideration technologies ranging from intelligence, lie-detecting, and big data to audio-visual processing. IAS can provide technological support that helps ensure the legality of interrogation in litigation and the objectivity, reliability and efficiency in case investigation, which guarantees the data base for future big data analyses.*

[Keywords] social changes; psychological behaviors; interrogation; assisting system

Introduction

Technology development brings about social changes and boosts community advancement. However, such changes also generate fickleness, extreme behaviors, escalated violence and a soaring crime rate. In China, with accelerated urbanization and rapid development in information technology, a considerable mindset and life-style alterations have taken place among citizens. Rapid development also brings about more fickleness and delinquencies that increases the number of criminal cases, causing severe damage to society. In order to maintain social safety and harmony, priority should be put on keeping the rationality and regularity in fighting against criminal activities. Interrogation is an indispensable part in criminal investigations. It is the key to gathering clues and evidence so as to crack the cases. During criminal interrogations, lie-detecting technology provides an assisting approach to boost efficiency; big data analyses can dig out and inspect hidden information of all kinds related to the crime, acquiring testimonies and filling in the gaps in evidence link (Mayer-Schonberger, 2013); information technology guarantees hardware requirements. Therefore, a comprehensive preliminary review that integrates all kinds of technologies and based on big data analyses can assist and protect investigators while deterring the suspects, helping the investigation with more efficient and reliable evidence and clues (Xu, 2013). The study on an interrogation assisting system (IAS) based on psychological behavior analyses of the suspects, therefore, entertains the significance of scientific law enforcement and police improvement: IAS can ease the mental burdens for the enforcement officers, ensure personal safety of the inspectors in legal investigations and improve personnel's comprehensive abilities; it can also intensify legal deterrence on the criminals; the digital

interrogation records and materials generated by the IAS are also of great value to police and judicial database establishment, laying a solid foundation for future data sharing, cloud computing and big data analysis.

Rationale

Every criminal commitment is behavioral traceable. According to behavioral psychology, it is acknowledged that all human behaviors, active or passive, are responses to external stimuli (Lin, 2008). After going through certain sudden or special incidents, everyone has in his/her mind some inerasable marks. After the crime commitment, the criminal will go through all kinds of recurrence of the crime scene in his/her mind as time goes on, uncontrollably contemplating all the possible traces that could be left behind (Bi, 2013). In addition, when being mentioned about some details on the scene, these marks will reveal themselves to the stimuli through physiological responses detectable on limb, breath, pulse, skin, etc.[1]. It is also through these responses that psychologists detect the credibility of respondents' words. From the perspective of psychological and physiological analyses, suspects' mental condition during the interrogation can vary from defense, suspicion, taking chances to antagonism in terms of psychological activities and taking on a pretended calm that falls into the category of physiological representation. Therefore, it is suggested that attention should be paid on gathering confessions and clues through suspects' psychological and behavioral activity representations.

IAS Based on Psychological Behavior Analyses of the Suspects

The purpose of developing IAS is to address the difficulties of extracting clues and confessions during interrogations to keep pace with the changed time. China is undergoing major social changes: technology development has revolutionized people's ways of working; urbanization alters the environment of people's life; the legal system that attains constant improvement changes the mode of interrogation and investigation; mutated forms and ways of crime commitment, and at the same time, elicit new requirements for criminal investigations. All these changes make people fickle, intensifying mental pressures and increasing the crime rate. To battle criminal activities, the most critical part is to find out the facts and gather evidence accordingly. Interrogation is an important approach in the investigation to dig out the undetected clues and undiscovered criminal activities. However, with changes taking place in people's mindset, it is fairly difficult to obtain real stories from the suspects through traditional simple methods. With the help of IAS, even though the suspect fights on to remain silent during the interrogation, his/her uncontrollable psychological or behavioral representations when being asked about critical parts of the case will be caught and analyzed under the police system database. Through methods like big data analysis the police can get a hold of vital information that goes straight to the point so as to break through suspects' mental defense and make them confess. Figure 1 is the system model of the IAS based on psychological behavior analyses of the suspects.

1 Hua, S. (1998). Behavior science. Zhejiang Education Publishing House. The New Criminal Procedure Code of People's Republic of China

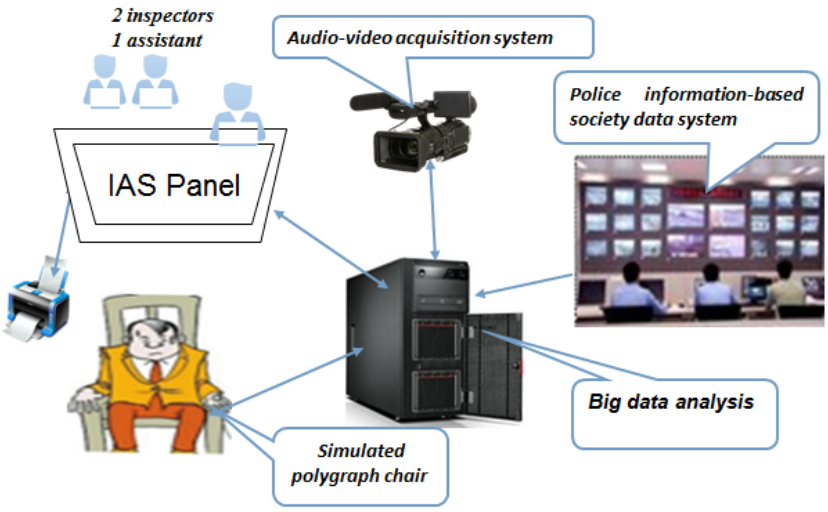

Figure 1. **IAS Based on Psychological Behavior Analyses of the Suspect**

As shown in Figure 1, the different modules of the system are explained below. The simulated polygraph chair has pressure sensors in its cushion and skin conductance testers on the armrests. The chair mainly consists of sensors and a processor. The sensors are connected to the sitter's body and collect information related to bio-parameter changes; the processor receives the simulated information from the sensors and converts it to digital signals, which will then be stored and analyzed. The result of the simulated polygraph chair will be shown on the IAS panel. The usage of the chair is not for direct mind reading. Instead, it aims at reinforcing and improving the credibility and weight of the already acquired evidence via lie-detection so as to enhance inspectors' confidence in breaking down suspects' mental defense during the interrogation. In this way the efficiency of interrogation also benefits. Therefore, the purpose of this module is to get an insight of the suspects' mental activities, adjust the interrogation plan accordingly and monitor the vital signs at the same time.

The audio-video acquisition system consists of an HD camera and audio recorder. During the preview, audio and video data are collected simultaneously and all the provided digital data will be stored for backup, evidence targeting or future analyses. The purpose is to observe the suspects' antagonistic psychological and physical activities in order to confirm the collected evidence and provide material for analyzing the credibility of the suspects' confession. In this way the possibility for the suspects to withdraw their confession is reduced. The reliability and legality of the investigation is also assured in this way.

Big data analysis mainly functions as a computing module that processes the psychological and physical data collected from the polygraph technology based on the database of the police system. The purpose is to compute, analyze and test the credibility of all the collected data. Parameters relating to language will be studied thoroughly in terms of the voice, the speed, and the variation of the tone so as to test the reliability of the confession. The information-based police technology will be used in this process to speed up the interrogation assistance. It should be emphasized that this module requires essential data as well as talents that possess necessary professional knowledge in the police system and the judicial sector so that they can convert the professional problems into mathematical algorithms.

The IAS panel has three sections. The first section is the info-enquiry part that links to the police information network, which enables enquiries into the police system database; the second section is the

monitor of information transferred from the simulated polygraph chair, which aims at observing the subtle mental activities of the suspects; the last section is for launching and controlling the big data analysis.

Here, the authors would like to explain the process of the entire system. First, the IAS should go through a pre-run, which includes activities like system launching and data preprocessing. The preprocess should consult the police information system to collect an information portfolio of the suspect as thorough as possible, including personal information, social activities and other materials related to the case. The goal of the preprocess is to avoid repetition and negligence so as to guarantee a high-quality data portfolio that can supplement the incomplete data collected during the big data analysis and further the result of analyses into a multi-layered full coverage. The pre-run can also prepare the inspectors with an adequate understanding and in-depth insight of the materials related to the interrogation target before the preview starts.

The second step of the process is basic information sampling. The suspects are questioned for basic information like speaking voice, speed and tone. They will also be asked questions related to the case so as to collect the data for lie-detection later. For example, the suspects may be asked three categories of case-related questions that are prepared beforehand based on the case: neutral questions (questions that are irrelevant to the case), relevant questions (questions that are related to the case) and lie-triggering questions (questions that are not directly related to the case but the respondents may tend to lie for the answers). The purpose is to gather standard voice data and body image information for later comparison.

The third step is carrying out the interrogation preview plan. During the interrogation, Inspector A is responsible for asking questions, Inspector B is for adjusting interrogation plan. Inspector B is not facing the respondent but is observing the results on the computer screen and using his/her split vision to notice the respondent's facial expression. In this way Inspector B can obtain a basic conclusion of the suspect's response to a certain question, deciding whether the suspect is knowing or participating the activities in question. The duty of the assistant is mainly for operational or enquiry purposes. When certain information is needed, quick and dynamic enquiries or confirmation can be conducted in police information system. For example, when interrogating for burglaries, information gathering can focus on the high-risk groups and local areas in order to go straight to the point (e.g. means of crime, etc.), reducing the capability of mental defense of the suspects and swaying them to confess themselves eventually. Another example of making use of the police information system is consulting the geography platform system to search for the places mentioned in suspects' confessions. Information gathered during the interrogation should be dug into and analyzed, which can be realized through big data analysis and other pre-designed algorithms. The analyses of data can also be used to predict future cases or assist the inspection of some combined and unsolved cases. Social media accounts can also be used to gather dialogue information, obtaining suspects' personal language styles and understanding their personalities (easily-excited, outgoing, quiet or depressed). In this way different methods could be developed to deal with different suspects according to their personal information. Social media applications like QQ, Wechat, Weibo can help track the related criminal information, locating the suspects and get hold of critical messages as soon as possible.

Application of IAS

IAS offers many benefits to the interrogation process. First of all, it enhances the mental deterrence against criminal suspects, reducing their antagonistic strength or attempts to take chances and making confession obtaining easier. Article 121 in the New Criminal Procedure Code of China provides that the audio and

video recordings are adoptable when inspectors are questioning suspects; during the interrogation of suspects probably facing life sentence, capital penalty or other severe sentences, the interrogation should be recorded[2]. Self-incrimination and lawyer intervention are also prohibited because such activities will further complicate the interrogation and make it more difficult to obtain confessions (Liu, 2011). During the interrogation, the inspectors should utilize the system to record any noticeable physiological representations when the suspects lie (including facial expressions, body languages, unusual tone variations, etc.). It's suggested that a series of unnatural movements should be recorded and analyzed for their value of obtaining confessions so as to nail down evidences. Such movements include: face/skull scratching; limb shaking; apparent face/neck whitening or reddening; pupil dilation; abnormal digestive fluid secretion that leads to dryness in mouth, tongue and lips; unusual respiratory speed including respiratory depression and breath holding; muscle tense, shaking and the consequent stutter, etc. Some physiological changes that are not easily detectable can also be collected and used to increase inspectors' confidence in the credibility of the confession. Such physiological activities include unusual secretion from subcutaneous sweat glands, which leads to skin sweat (the area between the eyes or the upper lip will sweat first, then the fingers and palms) and accelerating heartbeats. Such procedures also reduce the possibility of confession withdrawal (Wang, 2011). It also eases inspectors' mental pressures under the environment of pure audio-video recordings. At last, interrogation strategies that have been continuously upgraded can also help promote the involvement of modern technologies in interrogations, realizing the concept of 'scientific and technological evidence center' and improving the average capacity of investigative interrogation.

Conclusion

The development of modern information technology definitely establishes new models of interrogation for the future. Big data, cloud computing and other technologies that are yet to expand and improve are the foundation for researches on criminal interrogation. Big data analysis can help predict future cases according to available case data or patterns, which largely benefits the prevention of future cases. For future development in this field, data should go integrated and supplementary instead of separated and isolated. The purpose is to better unify all kinds of data on a systematic level for smoother transfer and conversion that provides the inspectors with comprehensive data utilization. Through this process the inspectors can gain a clear understanding about the respondents and therefore extract useful data to form a correct interrogation strategy with appropriate approaches to find out the critical point against different kinds of cases with different types of criminals involved. In this way evidence can be confirmed through interrogation and the case are thus solved.

Every complete set of data is made possible by manpower. Nowadays with stunningly rapid development, the sum of information brought by big data systems is unprecedented. A comprehensive and all-round professional training should be the priority of future education. Talents should be trained in fields like interrogation preview, data analysis and most importantly, integrated utilization of both, which can amass and summarize gathered information and at the same time attain a thorough grasp about the interrogation system, maintaining a smooth process from data analysis to actual interrogation, which facilitate an overhaul of interrogation procedures.

[2]As provided by Article 121 in the New Criminal Procedure Code of People's Republic of China

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References

Bi, X. (2013). Study on the method of investigation and interrogation. *Journal of People's Public Security University of China (Social Sciences Edition)*, (5).

Lin, X., & Li, X. (2008). Study on OLAP mass data loading technology. *Computer Technology and Development*, (2).

Liu, Q. (2011). The emotion regulation in police interrogation. *Journal of Anhui Vocational College of Police Officers*, (4).

Mayer-Schonberger, V. (2013). *Big data era: Life, work and thinking of the big changes.* Zhejiang people's Publishing House.

Wang, Y. P. (2011). *On the use of the language for investigative interrogation.* Anhui University.

Xu, D. (2013). *Big data strategy.* Zhejiang People's Publishing House.

Teacher-Training Students' Self-Consistency and Congruence, and Perceived Social Support: Emotional Resilience as a Moderator

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[Abstract] *A total of 552 teacher-training students from Ningxia University and Ningxia Normal College were recruited in this study to complete self-report questionnaires. The purpose of this study was to analyze the relationship between teacher-training students' emotional resilience, self-consistency and congruence, and perceived social support. This paper reached the following conclusions: For teacher-training students, self-consistency and congruence correlated negatively with perceived social support; self-consistency and congruence correlated negatively with emotional resilience; and emotional resilience correlated positively with perceived social support. Furthermore, emotional resilience moderated the relationship between self-consistency and congruence, and perceived social support.*

[Keywords] *teacher-training students; emotional resilience; self-consistency and congruence; perceived social support; moderation effects*

Introduction

Undergraduates' mental health has long been the focus of attention in society. Because teacher-training students are the reserve army of future teachers, their psychological health is not only directly related to their own career development, but it also affects the future quality of national education. Therefore, it is especially necessary to pay attention to the mental health of teacher-training students. A series of findings showed that perceived social support was an important factor in maintaining mental health (Oadir, Khalid, Haqqani, Zill-e-Huma, & Medhin, 2013). We define perceived social support as social support experienced subjectively, the expectations and evaluation of social support, and faith in potential social support (Barrera, 1986), which reflect the cognitive components of social support. Perceived support is a type of psychological reality that influences people's behavior and development (Barrera, 1986), so the role of perceived social support in understanding and predicting individuals' mental health was significantly important to this study (Hu, 2011; Malecki & Demaray, 2002). Researchers have systematically explored the relationships between perceived social support and certain important psychological variables, such as self-esteem and depression (Kleiman & Riskind, 2013; Pastor, Quiles, & Pamies, 2012; Zhou, Zhu, Zhang, & Cai, 2013). Moreover, the researchers also found that self-consistency and congruence is the important factor influencing perceived social support (Liu & Chen, 2013; Yang, 2008). Perceived social support could negatively predict self-consistency and congruence. Self-consistency and congruence refers to maintaining harmony alongside internal self-consistency, and coordination between ego and experience (Rogers, 1959). Some researchers have found that self-consistency and congruence is an important symbol of mental health, which is positively related to mental health (Lü, 2008; Wen, 2008). Furthermore, self-consistency and congruence were strongly related with factors of SCL-90 (Wang, 1994) and self-concealment (Lu, 2009). Unfortunately, we still do not know why perceived social support can negatively predict self-consistency and congruence. As a result, we propose that the potential mechanism is worthy of further research. A literature review found that

emotional resilience could be an important variable influencing the relationship between self-consistency and congruence, perceived social support.

Emotional resilience refers to the degree of emotional response and the extent of the reaction or the level of sensitivity relating to an individual's mood in response to changing factors in the external world when factors that influence emotion have changed (Ding & Shi, 2009). Recently, some studies have determined that emotional resilience is related to mental health (Sergeant, & Laws-Chapman, 2012). From a phenomenological perspective, depression, anxiety, mania, and other psychological anomalies can be understood by the loss of emotional resilience (Davidson, 2003; Wang & Guo, 2005). Low emotional resilience is the foundation of many emotional disorders and mental diseases, which increases the possibility that an individual will develop emotional disorders or mental illness. Consequently, emotional resilience influences mental health greatly; the higher an individual's emotional resilience, the higher his/her levels of individual mental health.

One of the characteristics of good mental health is the higher frequency and intensity of positive emotions, with a low frequency and intensity of negative emotions (Wang & Cui, 2007). When individuals experience inconsistency between ego and actual performance, he/she will exhibit a stressed, distracted behavior, often called a state of "inconsistency" between the self and experience. The individual then adopts a variety of defensive reactions to maintain the self-concept; when the defense fails or occurs in excess, the individual experiences problems or obstacles detrimental to their mental health. Therefore, self-consistency and congruence are not only indicators of good mental health, but also important factors that affect mental health. Consequently, it can be deduced that emotional resilience and self-consistency relate to congruence.

An individual's development is the result of interaction between the individual and their environment (Bronfenbrenner, 1989). As we know, people with high emotional resilience can generate more positive emotions from their understanding of the self and the environment; he/she also can quickly recover from negative emotional experiences, even producing negative emotions (Zhang & Lu, 2013). Additionally, when the self and external experiences are inconsistent, people with higher emotional resilience will experience more social support during the process; people with low self-consistency and congruence are more likely to have high emotional resilience, thus improving the level of perceived social support. At the same time, for an individual who has low emotional resilience, when the self and experience are inharmonious, the individual perceives comparatively low social support. Therefore, we suggest emotional resilience may act as a moderator between self-consistency, congruence and perceived social support.

To sum up, many studies have examined the relationships between self-consistency, congruence, perceived social support, and emotional resilience. Additionally, the relationships between self-consistency, congruence and perceived social support have been proven and many valuable results have been found. However, we still do not know what the relationship between self-consistency, congruence, perceived social support, and emotional resilience is. There has been no research to explore the relationship between among them within the entire framework. Therefore, this research used questionnaire surveys to investigate the teacher-training students' relationships between self-consistency, congruence, emotional resilience, and perceived social support, and further explored the moderating effects of emotional resilience in the relationships between self-consistency, congruence and perceived social support.

Methods

Participants

The data for the present study were collected from teacher-training students in China's Ningxia Hui Autonomous Region (Yang, 2008). Questionnaires were administered to 646 Normal University students in the Ningxia Region, in which, a total of 552 usable responses were gathered (50.5% males and 49.5% females; response rate: 85%). Among the participants, 170 majored in sciences (30.8%), 248 studied the liberal arts (44.9%), and 134 majored in arts and sports (24.3%). With regard to position, 202 were student leaders (36.6%), and 350 were not (63.4%). In addition, 145 were freshmen (26.3%), 152 were sophomores (27.5%), 144 were juniors (26.1%), and 111 were seniors (20.1%).

Measures

To measure self-consistency and congruence, we used the self-consistency and congruence scale developed by Wang Dengfeng (1994); the scale consists of three subscales of inconsistency between self and experience, self-flexibility and self-rigidness. The scale is composed of 35 items, and items were scored on a 5-point scale. The subscale of self-flexibility was scored reversely, adding the scores of three subscales together, and acquiring the total score of the scale. The higher the total score, the lower the degree of self-harmony. The indexes of internal reliability belonging to three subscales were .85, .81, and .64. In this study, the Cronbach's α coefficient of the self-consistency and congruence was .79.

The Multidimensional Scale of Perceived Social Support was authorized by Zimet (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988), and the Chinese edition was revised by Jiang Qianjin. The scale was used to measure perceived support from two sources: support within the family (4 items) and support from outside the family (8 items); the total scores reflect the degree of social support each individual felt. The scale is composed of 12 items, each scored using 7 points ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). Possible total scores ranged from 12 to 84; the higher the score, the higher the level of perceived social support. The scale has shown high internal reliability and good validity. In this study, the Cronbach's α coefficient of the perceived social support was .89.

With respect to emotional resilience in the teacher-training students' questionnaire, we self-compiled the results based on the data. We used the exploratory factor analysis and the confirmatory factor analysis, and the fitting index of the confirmatory factor analysis was as follows: χ^2/df = 4.04, NNFI = .88, CFI = .90, GFI = .93, RMSEA = .07. Finally, the questionnaire included four dimensions: positive emotional ability, learning emotional harmony, self-emotional harmony and applied emotional skills, a total of 14 items. All items were scored on a five-point Likert-type scale ranging from 1 (*very strongly disagree*) to 5 (*very strongly agree*). The total score reflected the condition of emotional resilience: the higher the score, the higher the level of emotional resilience, and vice versa. The internal consistency coefficient of this questionnaire was .87, the split half reliability was .77, and the coefficient of internal consistency of each dimension was between .63 and .75. Therefore, the scale has good reliability and validity.

Common Method Bias

Common method bias refers to the artificial covariant between predictions and the calibration variables caused by the same measurement environment, the same context of the item, and the data coming from the same source or scorer (Zhou & Long, 2004). The subjects filled out this study's questionnaire, so there could be the possibility of common method bias. Therefore, this study adopted the process control and statistical control approaches to decrease any possible common method bias (Podsakoff, Mackenzie,

Lee, & Podsakoff, 2003). Program control measures included guaranteeing the participants' anonymity to reduce their fear of evaluation; the statements and terms in the questionnaire were perfected, wherein we attempted to simplify and clarify the language in order to avoid ambiguity; and finally, the questionnaire had high reliability and validity. In terms of statistical controlling, we used a confirmatory factor analysis and Harman's one-factor analysis to test common method biases. The confirmatory factor analysis results (χ^2/df = 4.04, NNFI = .88, CFI = .90, GFI = .93, RMSEA = .07) showed that the four-factor model fitting each of the indexes reached the standard of recommendation (Wen, Hau, & Herbert, 2004). Harman's one-factor analysis showed that four factors explained a 59.59% variation, which was not rotated, and the first factor explained a 17.26% variance that was less than 50% judgment by the recommendation of Harrison, McLaughlin, and Coalter (1996). Therefore, the common method bias in this study was not serious.

Results

The results showed that teacher-training students' emotional resilience positively correlated with perceived social support ($p < .01$); self-consistency and congruence negatively correlated with emotional resilience ($p < .01$); and self-consistency and congruence negatively correlated with perceived social support ($p < .01$). The detailed results are as follows"

Table 1. ***Correlations of Self-Consistency and Congruence, Emotional Resilience and Perceived Social Support***

	1	2	3	4	5	6	7	8	9	10	11	12
1. Self-consistency and congruence	1											
2. Inconsistency	.82**	1										
3. Flexibility	.49**	-.02	1									
4. Stiffness	.71**	.53**	.08	1								
5. Emotional resilience	-.13**	.02	-.36**	.10*	1							
6. Positive emotion	-.10*	.02	-.30**	.11*	.84**	1						
7. Learning emotion	-.07	.04	-.23**	.07	.78**	.46**	1					
8. Self emotion	-.14**	.02	-.34**	.06	.84**	.61**	.55**	1				
9. Emotional applied	-.14**	-.01	-.33**	.10*	.83**	.65**	.51**	.65**	1			
10.Perceived social support	-.36**	-.14**	-.51**	-.08	.33**	.28**	.20**	.32**	.31**	1		
11.Support within family	-.27**	-.11*	-.40**	-.02	.27**	.22**	.17**	.26**	.27**	.85**	1	
12. Support out of family	-.37**	-.14**	-.51**	-.10*	.32**	.29**	.20**	.31**	.29**	.96**	.66**	1
M	94.76	47.93	26.81	20.02	50.19	13.90	14.32	10.97	10.99	62.38	21.09	41.30
SD	1.36	8.99	6.57	4.28	8.81	3.20	3.03	2.29	2.21	1.19	4.63	8.33

Note. * $p < .05$, ** $p < .01$.

According to the correlation between the three variables, we can assume that teacher-training students' emotional resilience will alter the impact regarding students' self-consistency and congruence to perceived social support. Self-consistency and congruence is an independent variable (X), emotional resilience is a moderating variable (M), and perceived social support is a dependent variable (Y). Next, a

moderate effect analysis was performed. We centralized the moderating variable and independent variable first, and then performed a hierarchical regression analysis, which referenced the formulation of Y = aX + bM + cXM + e. The first step was to do the regression of Y to X and M; the second step was to do the regression of Y to X, M, and XM. If the determination coefficient R^2 of the second step was significantly higher than the determination coefficient of the first step, then the moderation effect would be significant. Another measure examined the regression coefficient of XM; if the regression coefficient of XM was significant, then it indicated the moderating effect would be significant. The results of the moderating effect analysis are shown in Table 2. Results showed that due to the fact that the regression coefficient of MX was significant in the second step (t = 3.71, the change of the R^2 about 2%), the moderation of emotional resilience (X) of teacher-training students was remarkable.

Table 2. ***The Moderating Effect Examination of Teacher-Training Students' Emotional Resilience***

Step	Dependent	Independent	*B*	*β*	*ΔR²*	*F*
Step 1	Perceived social support	Self-consistency and congruence	-.29	-.33	.22	75.41***
		Emotional resilience	.39	.29		
Step 2	Perceived social support	Self-consistency and congruence × emotional resilience	.01	.14	.02	56.02***

Note. *** $p < .001$.

Through the simple effect inspection (Dearing & Hamilton, 2006), we further analyzed the moderating effect of emotional resilience to self-consistency, congruence and perceived social support. Regarding the mean as a demarcation point, the teacher-training students were divided into high emotional resilience (above mean one standard deviation) and low emotional resilience (below mean one standard deviation), which would examine the significance of the slope of the regression between self-consistency, congruence and perceived social support, respectively. The analysis results are shown in Figure 1. From Figure 1, it shows that for teacher-training students with high emotional resilience, self-consistency, congruence could positively predict perceived social support (β = .23, t = -2.16, p < .05); for teacher-training students with low emotional resilience, self-consistency, congruence could positively predict perceived social support (β = -.41, t = -7.63, p < .000). That is to say, with the increase of self-consistency and congruence, teacher-training students with high emotional resilience would perceive more social support, teacher-training students with low emotional resilience would perceive lower social support.

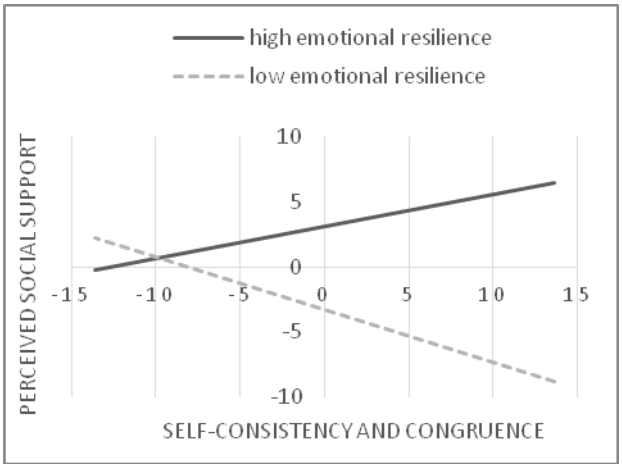

Figure 1. **The Moderating Effect Model of Teacher-Training Students' Emotional Resilience to Self-Consistency, Congruence and Perceived Social Support**

Discussion

Previous research has shown that self-consistency, congruence and perceived social support had a significant negative correlation (Liu & Chen, 2013), which was consistent with our findings. Moreover, the results also show that teacher-training students' inconsistency and flexibility is negatively correlated with two dimensions of self-consistency, congruence and perceived social support had significant negative correlation. That is to say, the higher degree of inconsistency between the self and experience of teacher-training students being, the lower they perceived social support within the family and outside the family; the degree of flexibility of teacher-training students were higher, they perceived social support within the family and outside the family were higher. Inconsistency between the self and experience reflects the unreasonable expectations of experience, involving a self-evaluation of capacity and emotion, self-consistency, and helplessness among others. When the self and experience of teacher-training students was inconsistent, the students' self-efficacy would reduce (Hu & Zheng, 2010), and even cause depression (Ye, 2006); the individual's emotions or mood would be in low state continually, the will of social interaction or the opportunity of chatting with friends would decrease, as a result the feeling of loneliness would increase accordingly (Jackson, Fritch, Nagasaka, & Gunderson, 2002), and perceived lower social support. Teacher-training students with a high self-flexibility were able to communicate with family and friends actively, listen willing and accept suggestions, and perceive more social support, so they can make changes with changing situations to make themselves easier to adapt to the environment. In addition, researchers also found perceived social support could negatively predict self-consistency, congruence (Yang, 2008), the more social support they perceived, the lower degree of self-consistency and congruence. Consequently, it can be deduced that there exists interplay between perceived social support, self-consistency and congruence in teacher-training students. Self-consistency and congruence is recognized as an important indicator of mental health, reflecting the condition of one's mental health to some degree. An individual's mental health status also affects their perception of social support.

Through correlation analysis, this study confirmed that there exists a significant relationship between teacher-training students' self-consistency and congruence, perceived social support and emotional resilience. When subjected to a negative stimulus, teacher-training students with low emotional resilience

had a difficult time producing positive emotions; they also had difficulty recovering quickly from negative emotional experiences, eventually leading to self-inconsistency. Therefore, emotional regulation strategies, especially distraction strategies for emotional recovery, were particularly important (Curtis & Cicchetti, 2003). Facing the same negative stimulation, teacher-training students with high emotional resilience might respond in a variety of ways to produce more positive emotions, potentially even producing negative emotions in order to quickly recover from the negative emotional experience. This allowed them to perceive more social support, also called the psychological compensatory model, which involves high social support by offsetting the damaging effects of stress to protect the individual (Garmezy, Masten, & Tellegen, 1984).

According to the results of the moderating effects on teacher-training students' emotional resilience, we found that moderating effects of emotional resilience were significant; as the level of self-consistency and congruence increased, the level of teacher-training students' perceived social support decreased. However, under the moderating effect of emotional resilience, the level of perceived social support increased. These results confirmed the importance of emotional resilience to maintaining good mental health. When teacher-training students experienced inconsistency of the self, teacher-training students with low emotional resilience would be affected by environmental factors easily, have sustained low emotion and this reduced the will of social interaction, so they cannot receive timely care and support from family and friends, and their perceived social support becomes lower. Facing the same negative stimulation, teacher-training students with high emotional resilience maintained positive attitudes, and took relaxed and humorous measures to actively reduce the negative effects of pressure, which made them gain more social support and subjective well-being (Zhang, Wang, & Liu, 2012), eventually maintaining good mental health. The simple effect test further showed that for teacher-training students with high emotional resilience, with the increasing self-consistency and congruence they would perceive more social support; for teacher-training students with low emotional resilience, with the increasing self-consistency and congruence they would perceive lower social support. As described above, teacher-training students with low emotional resilience would be affected by environmental factors easily, sustain low emotion, so even the degree of self-consistency, congruence increased, and because of their lower social interaction, the social support they perceived would decrease. On the contrary, for teacher-training students with high emotional resilience, because of their positive coping style and their willingness to share actively ideals with their families and friends, the social support they perceived would increase with their increasing self-consistency, and congruence. Additionally, emotional resilience increases as teacher-training students grow and their social experiences increase (Ding & Shi, 2009); the ability to regulate emotional resilience will likewise increase, and as a result, teacher-training students will perceive more social support. Our results indicated that when considering the impact of teacher-training students' self-consistency and congruence relative to perceived social support, we cannot neglect the positive moderating effect of emotional resilience; we are able to take some actions to cultivate students' emotional resilience, such as encouraging students to participate in social practice or pay attention to adversity education, and consequently strengthen their mental aptitude and enhance their career calling and professional identification.

Conclusion

For teacher-training students, there is a significant relationship between self-consistency and congruence, emotional resilience and perceived social support. Self-consistency and congruence can negatively predict

perceived social support and emotional resilience, and emotional resilience positively predicts perceived social support. Emotional resilience can positively moderate the relationship between self-consistency and congruence and perceived social support, especially for an individual with high emotional resilience. When the self is inconsistent, he/she will perceive social support.

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References

Barrera, M. (1986). Distinctions between social support concepts, measures and models. *American Journal of Community Psychology*, *14*, 413-445.

Bronfenbrenner, U. (1989). Ecological systems theory. In R. Vasta, (Ed.), *Six Theories of Child Development: Revised Formulations and Current Issues,* (pp. 187-249). Greenwich, CT: JAI Press.

Davidson, R. J. (2003). Affective neuroscience and psychophysiology: Toward a synthesis. *Psychophysiology*, *40*, 655-665.

Dearing, E., & Hamilton, L.C. (2006). Contemporary advances and classic advice for analyzing mediating and moderating variables. *Monographs of the Society for Research in Child Development*, *71*, 88-88.

Ding, N. Z., & Shi, W. D. (2009). Analysis of emotional elasticity. *Psychological Exploration*, *29*, 18-21. [In Chinese]

Harrison, D. A., McLaughlin, M. E., & Coalter, T. M. (1996). Context, cognition, and common method variance: Psychometric and verbal protocol evidence. *Organizational Behavior and Human Decision Processes*, *68*, 246-261.

Hu, L. L., & Zheng, H. (2010). Relationship among general self-efficacy, self-consistency and academic adjustment of normal of university students. *China Journal of Health Psychology*, *18*, 1269-1271.

Hu. (2011). The mechanism of the effect of social support perceiving on the mental health of "migrant juveniles": An analysis of the intermediary role of self-esteem. *Chinese Journal of Special Education*, *8*, 86-90.

Jackson, T., Fritch, A., Nagasaka, T., & Gunderson, J. (2002). Towards explaining the association between shyness and loneliness: A path analysis with American college students. *Social Behavior & Personality*, *30*, 263-270.

Kleiman, E. M., & Riskind, J. H. (2013). Utilized social support and self-esteem mediate the relationship between perceived social support and suicide ideation. *Crisis*, *34*, 42-49.

Liu, M. L., & Chen, X. (2013). Relationship research between the self consistency and congruence, perceived social support and mental health of higher vocational college students. *Journal of Guizhou Normal University (Natural Sciences)*, *31*, 13-17.

Lu, D. (2009). Self-concealment of high school students and its relation with self-consistency and congruence. *Chinese Journal of Clinical Psychology*, *17*, 96-97.

Lü, L. (2008). Effect of mental health education on self-consistency and congruence of junior university students. *Chinese Journal of Clinical Psychology*, *16*, 208-209.

Malecki, C. K., & Demaray, M. K. (2002). Measuring perceived social support, development of the child and adolescents social support scales. *Psychology in the School*, *39*, 1-18.

Oadir, F., Khalid, A., Haqqani, S., Zill-e-Huma, & Medhin, G. (2013). The association of marital relationship and perceived social support with mental health of women in Pakistan. *BMC Public Health*, *13*, 1150.

Pastor, Y., Quiles, Y., & Pamies, L. (2012). Social support in adolescence: Adaptation and psychometric properties of the social support scale for children by Harter (1985). *Revista de Psicologia Social*, *27*, 39-53.

Podsakoff, P. M., Mackenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*, 879-903.

Rogers, C. R. (1959). A theory of therapy, personality, and interpersonal relationship as developed in the client-centered framework. In S. Koch (Ed.), *Psychology: A Study of Science,* (pp.184-256). New York: McGraw Hill.

Sergeant, J., & Laws-Chapman, C. (2012). Creating a positive workplace culture. *Nursing Management-UK*, *18*, 14-19.

Wang, D. F., & Cui, H. (2007). A predictive research on psychosomatic symptoms with personality dimensions, self-experience inconsistency, and behavior inhibition. *Acta Psychologica Sinica*, *39*, 861-873. [In Chinese]

Wang, D. F. (1994). Compilation of self-consistency and congruency scale (SCCS). *Chinese Journal of Clinical Psychology*, *2*, 19-22. [In Chinese]

Wang, Z. H., & Guo, D. J. (2005). Affective style and its neural bases. *Journal of Psychological Science*, *14*, 751-753. [In Chinese]

Wen, Z. D. (2008). Study on self-congruency of college students and the relation of mental health. *China Journal of Health Psychology*, *16*, 1121-1124.

Wen, Z. L., Hau, K.T., & Herbert, W. M. (2004). Structural equation model testing: cutoff criteria for goodness of fit indices and Chi-square test. *Acta Psycholigica Sinica*, *36*, 186-194. [In Chinese]

Yang, Z. (2008). Relationship between perceived social support and self-consistency and congruence of normal college students. *China Journal of Health Psychology*, *16*, 1135-1137.

Ye. (2006). Perceived social support, enacted social support and depression in a sample of college students. *Psychological Science*, *29*, 1141-1143.

Zhang, M., & Lu, J. M. (2013). The effects of emotional resilience and gender on judgment bias in process of the nature of negative emotion incidents. *Journal of Psychological Science*, *36*, 378-382. [In Chinese]

Zhang, Z. T., Wang, J. Q., & Liu, F. (2012). Relationship between parenting styles, perceived social support, loneliness and subjective well-being of undergraduates. *China Journal of Health Psychology*, *20*, 1080-1083.

Zhou, H., & Long, L. R. (2004). Statistical remedies for common method biases. *Advances in Psychological Science*, *12*, 942-950. [In Chinese]

Zhou, X. T., Zhu, H., Zhang, B., & Cai, T. S. (2013). Perceived social support as moderator of perfectionism, depression, and anxiety in college students. *Social Behavior & Personality*, *41*, 1141-1152.

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional scale of perceived social support. *Journal of Personality Assessment*, *52*, 30-41.

The Effects of Group Recategorization on Attitude and Behavioral Intention Changes Among Group Members

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[Abstract] *This paper focuses on possible attitude and behavioral changes of group members when the identity of an information transmitter either merged into one superordinate group with others or changed into a separated subgroup with them. TPB questionnaires were used to monitor attitude or behavioral intention of group members. Research found that a superordinate identity enhanced behavioral beliefs and normative beliefs towards certain behaviors promoted by the transmitter, whilst at the same time, it increased the perceived difficulty of a collaborative group decision.*

[Keywords] *group recategorization; superordinate; subordinate; attitude and behavioral intention*

Introduction

One of the main claims of Social Identity Theory is that intergroup behavior is motivated by the way we perceive others and ourselves through the angle of group memberships (social identity), rather than independent individuals (personal identity) (Tajfel, 1978, 1981; Tajfel & Turner, 1979), which is mostly the explanation of ingroup favoritism and outgroup prejudice. Categorization is one of the most fundamental processes underlying human judgment. According to Social Categorization Theory, categorization of people to groups differs depending on context, and can occur at different levels that vary in inclusiveness (Brown & Turner, 1981; Tajfel & Turner, 1979).

Aside from the most common categorization of ingroup and outgroup, there are other ways to categorize social identities of group members. One way is superordinate and subordinate identity. Research has found that a stronger identification with the superordinate group and a weaker identification with the subgroup will result in more concern with relationships among members of different subgroups and less concern with instrumental issues and the conflicts they bring (Thibaut & Walker, 1975). And when people belong to their own subgroups, intergroup bias is likely to take place (Brewer, 1998).

Besides the influences of static identity categorization, identity recategorization also grew into a field of research interest as a dynamic process. In several laboratory experiments, participants who were induced to recategorize former competing groups as one larger group exhibited less intergroup bias (Dovidio, et al., 1998; Gaertner, et al., 1990; Gaertner et al., 1999; Gaertner, Mann, Murrell, & Dovidio, 1989). In a study with students attending a multicultural high school, for example, students who identified themselves as American in addition to their ethnic group identity (e.g. Korean American) had lower degrees of intergroup bias than students who did not describe themselves with an American identity (e.g. Korean) (Gaertner, Rust, Dovidio, Bachman, & Anastasio, 1994).

In this study, superordinate and subordinate identity recategorization was adopted in a group to see if it had any effect on group information diffusion processes. Specifically, group members' attitudes and behavioral intentions were measured as indices of the information diffusion effect. The Theory of Planned Behavior (TPB) states that attitude toward behavior, subjective norms, and perceived behavioral control, together shape an individual's behavioral intentions and behaviors (Ajzen, 2002).We assume that as group

members merge from subgroups to a superordinate identity, the information they receive will have more impact on their attitudes and behavioral intentions, which could possibly lead to further behavior changes.

Experiment Method

Subjects

There were 72 participants involved in this experiment. They were from various colleges and universities in the Zhejiang province, including Zhejiang University, Zhejiang Gongshang University, Zhejiang Shuren University and Zhejiang Transportation College. Gender balance was roughly kept, and they ranged from freshmen to seniors. Most of them participated for payment, and others for course credit.

Materials

First, there was a manipulation check to examine group members' recognition on group identity recategorization. Under the sub-super categorization condition, the questions were, "Were you and the communicator from different colleges? Do you perceive you and the communicator as all Zhejiang college students?", and under the super-sub condition, "Were you and the communicator all Zhejiang college students? Do you perceive you and the communicator as students from different colleges?"

Then there was a one-paper reading material for the communicator about diabetes prevention, which contained many practical tips and behaviors for diabetes prevention to be put into action in daily life. Finally the TPB questionnaire in use was adapted from a sample TPB questionnaire. It had eight dimensions: outcome evaluations, past behavior (omitted), direct measures of perceived behavior control, subjective norm, attitude and intention (direct measure, for short), motivation to comply, behavioral beliefs, control beliefs, power of control factors and normative beliefs. Some items were modified or deleted to be suitable for the present behavior.

Procedures

Subjects were gathered and randomly divided into 4-person groups, after which a communicator was assigned and a paper with information on diabetes prevention was given to him/her. Under the condition of sub-super recategorization, members were told, "You and the communicator belong to different colleges (according to real circumstances), but you are all Zhejiang college students." Under the other condition, they were told, "You and the communicator are all Zhejiang college students, but you are from a different college with him/her." Then, the communicator read and taught the information about diabetes prevention to the other group members. Finally, the TPB questionnaires were completed for each member.

Results

Manipulation Check

If participants' answers were "yes" to the questions previously displayed, then we reckoned their recognition on the group identity recategorization was successfully activated. Two of the participants' data were deleted.

Effects of Group Recategorization on TPB Dimensions

Descriptive statistics of identity recategorization on TPB dimensions are listed in Table 1. An independent sample comparison *t*-test was conducted to see if change of group categorization had any effect on different dimensions of the TPB questionnaire, which reflects the participants' attitudes and beliefs on the whole.

Table 1. ***Descriptive Statistics of Recategorization on TPB Dimensions***

TPB Dimensions	Condition	*n*	Mean	Std. Error
Outcome Evaluation	super-sub	36	3.44	.589
	sub-super	34	3.46	.551
Direct Measures	super-sub	36	3.11	.620
	sub-super	34	3.21	.590
Motivation to Comply	super-sub	36	3.73	.761
	sub-super	34	3.91	.710
Behavioral Beliefs	super-sub	36	4.14	.813
	sub-super	34	4.39	.612
Control Beliefs	super-sub	36	2.69	.770
	sub-super	34	2.72	.726
Control Powers	super-sub	36	2.67	.930
	sub-super	34	2.87	.923
Normative Beliefs	super-sub	36	2.51	.983
	sub-super	34	2.89	.892

Table 2. ***Comparison t-test of Recategorization on TPB Dimensions***

Source	*t*	*df*	*p*
Outcome Evaluations	-0.091	68	0.928
Direct Measures	1.107	68	0.272
Motivation to comply	-1.481	68	0.141
Behavioral Beliefs	-2.142**	68	0.037
Control Beliefs	0.708	68	0.480
Power of control factors	-1.125	68	0.262
Normative Beliefs	-1.841*	68	0.070

*Note: * stands for marginal significance (p<0.1), **stands for significance (p<0.05)*

As displayed in Table 2, we found group members formed stronger behavioral beliefs when the categorization changed from subgroup to superordinate than the reverse, t=-2.142, p<0.05. There was a marginal significance with normative beliefs, t= -1.841, p<0.1.

Effects of Group Recategorization on Attitudes and Behavioral Intentions

Based on the scores of group recategorization on TPB dimensions, three critical components, "Attitude towards behavior", "Subjective norm", and "Perceived behavior control", can be calculated. According to Theory of Planned Behavior, attitude towards behavior was composed of outcome evaluations and behavioral beliefs, subjective norm was combined by motivation to comply as well as normative beliefs. Perceived behavior control was decided by power of control factors and control beliefs.

The calculated "Attitude towards behavior", "Subjective norm", and "Perceived behavior control" were compared between the super-sub and sub-super conditions, and the results were as follows. Attitude towards behavior was not significantly different between the two conditions of identity recategorization. However, it revealed a marginal significance in subjective norm, with scores higher when the recategorization was from subordinate to superordinate identity than the other way around, t=-1.858, p<0.1.

Table 3. ***Descriptive Statistics of Recategorization on Three TPB Components***

TPB components	Condition	*n*	Mean	Std. Error
Attitude towards behavior	super-sub	36	14.39	.679
	sub-super	34	15.95	.757
Subjective Norm	super-sub	36	9.59	710
	sub-super	34	11.73	.926
Perceived Behavior Control	super-sub	36	7.47	.650
	sub-super	34	9.14	.764

Table 4. ***Comparison t-test of Recategorization on Three TPB Components***

Source	*t*	*df*	*p*
Attitude towards behavior	-1.541	68	0.128
Subjective Norm	-1.858*	68	0.067
Perceived Behavior Control	-1.672	68	0.101

*Note: * stands for marginal significance (p<0.1)*

Discussion

In this study, the effects of identity recategorization on group information diffusion, especially attitude and behavioral intention was examined. The identity of group information source was manipulated, either from superordinate to subgroup identity, or the other way around. The results showed that recategorization had effects on behavioral beliefs, as well as normative beliefs, two of the eight dimensions of the TPB questionnaire. A behavioral belief is the subjective probability that the behavior will produce a given outcome. Although a person may hold many behavioral beliefs associated with a certain behavior, only a relatively small number are readily accessible at a given moment. It is assumed that these accessible beliefs – in combination with the subjective values of the expected outcomes – determine the prevailing attitude towards the behavior (Fishbein & Ajzen, 1975, 2010). Behavioral beliefs were stronger when the communicator's identity changed from subordinate to superordinate than when identity was recategorized in opposite direction. However, the calculated attitude towards behavior was not significantly different between the two conditions, largely due to the similar outcome evaluations between the two conditions.

A normative belief is an individual's perception of social normative pressures, or relevant others' beliefs that he or she should or should not perform such behavior (Wiki). As shown in the results, subjective norm was significantly higher when the communicator's identity changed from subordinate to superordinate, which suggested that the judgments of others tend to have more influence and pressure on them when all group members belong to a superordinate identity. Subjective norm was positively correlated with behavioral intentions. So members in a superordinate group might be more likely to put certain knowledge into actions.

Perceived behavior control referred to an individual's perceived ease or difficulty of performing the particular behavior. In this part, change of identity did not influence one's perceived behavior control, which was sensible. As Ajzen (1991) stated in the Theory of Planned Behavior, knowledge of the role of perceived behavioral control came from Bandura's concept of self-efficacy. More recently, Fishbein and Cappella (2006) stated that self-efficacy is the same as perceived behavioral control in his integrative

model, which is also measured by items of self-efficacy in a previous study. In this way, the relatively stable self-efficacy would not fluctuate along others' identity change.

On the whole, this study showed that when group members conceived of themselves more as a single superordinate group, rather than separate subgroups with the communicator, information received and diffused had a deeper impact on participants' beliefs and behavioral intentions.

Conclusion

Group identity recategorization had an impact on the information diffusion processes among group members. As the identity of group communicator changed from a subgroup identity to a superordinate identity, the extent that other members received the information was deepened, from the aspects of behavioral beliefs and subjective norms.

References

Ajzen, I. (2002). Constructing a TPB questionnaire: Conceptual and methodological considerations. Retrieved from http://www.unibielefeld.de/ikg/zick/ajzen%20construction %20a%20tpb%20questionnaire.pdf.

Brewer, M. B. (1998). The psychology of prejudice: Ingroup love and outgroup hate? *Journal of Social Issues, 55*(3), 429-444(16).

Brown, R. J., & Turner, J. C. (1981). Interpersonal and intergroup behaviour. *Intergroup Behaviour*, 33-65.

Dovidio, J. F., Gaertner, S. L., & Validzic, A. (1998). Intergroup bias: Status, differentiation, and a common in-group identity. *Journal of Personality and Social Psychology*, *75*(1), 109.

Fishbein, M., & Cappella, J. N. (2006). The role of theory in developing effective health communications. *Journal of Communication*, *56*(s1), S1-S17.

Gaertner, S. L., Mann, J., Murrell, A., & Dovidio, J. F. (1989). Reducing intergroup bias: The benefits of recategorization. *Journal of Personality and Social Psychology*, *57*(2), 239.

Gaertner, S. L., Rust, M. C., Dovidio, J. F., Bachman, B. A., & Anastasio, P. A. (1994). The contact hypothesis: The role of a common ingroup identity on reducing intergroup bias. *Small Group Research*, *25*(2), 224-249.

Gaertner, S. L., Dovidio, J. F., Rust, M. C., Nier, J. A., Banker, B. S., Ward, C. M., Mottola, G. R., & Houlette, M. (1999). Reducing intergroup bias: Elements of intergroup cooperation. *Journal of Personality and Social Psychology*, *76*(3), 388.

Gaertner, S. L., Mann, J. A., Dovidio, J. F., Murrell, A. J., & Pomare, M. (1990). How does cooperation reduce intergroup bias? *Journal of Personality and Social Psychology*, *59*(4), 692.

Tajfel, H. E. (1978). *Differentiation between social groups: Studies in the social psychology of intergroup relations.* Academic Press.

Tajfel, H. (1981). *Human groups and social categories: Studies in social psychology.* CUP Archive.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. *The Social Psychology of Intergroup Relations*, *33*(47), 74.

Thibaut, J. W., & Walker, L. (1975). *Procedural justice: A psychological analysis*. Mahwah, NJ: L. Erlbaum Associates.

Research on Internet Public Opinions of a Disaster Based on Content Mining: Taking the Tianjin Explosion as an Example

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[Abstract] *Social mentality of the socio-cultural state of mind is the psychological state of the members of society generally. Social mentality is directly associated with everyday life reflecting one`s feelings, habits, behavior, beliefs, ideas, and so on. China is in a dramatic social transformation. A highly increasing economy, a suddenly changed lifestyle and exposure to a boom of information on the internet make people unable to accommodate. They are becoming more anxious than before. When facing terrible emergencies, the social mentality may become more obvious. In this paper, we took the "Tianjin Explosion" as an example to examine what people were thinking about and what they were feeling during the disaster, and in particular, their attitude towards government. We collected thousands of real opinions on weibo (Chinese Twitter) instead of by questionnaire. Then ROST Content Mining software was used to analyze the word frequency, social network, semantic network and emotions. Results found that more negative emotions towards government were released during the explosion. Distrust of government was wide and some people began to spontaneously resist rumors.*

[Keywords] *social mentality; Tianjin Explosion; weibo public opinion; content mining*

Introduction

In January 2015, the China Internet Network Information Center (CNNIC, 2015) released the "Thirty-Sixth China Internet Network Development Status Statistics Report" in Beijing. The report shows that as of June 2015, the number of China's internet users was higher than 66.8 million and the internet penetration rate was 48.8% (CNNIC, 2015). With the penetration of internet, more and more people are choosing to publish their opinions on the internet. More and more people tend to obtain information from network. At the same time, there seems to be more negative and violent accidents appearing on the internet.

Sohu News, one of the most popular news websites, planned the "analyze the saurce of network hostility" topic in 2013 (http://news.sohu.com/s2013/liqi/). Under this topic, they listed many vicious events like killing innocent people, murdering police or doctors, setting fire in public places, shooting someone, detonating bombs and so on. This kind of news on the internet aroused much fear in China. People.cn published a paper, "Social Network Hostility, Why is it Difficult to Resolve?" It criticized that even one movie (*The Grandmaster*) could lead to a network verbal battle. This might reflect the social psychology of mono-value and hostility.

Public Opinions and Network Social Mentality

Many scholars agree that China is still in a rapid transitional period. With the profound changes of the economic system, interest patterns and social structure, many social contradictions have emerged. The psychological pressure of members of the society is increasing. Negative social attitudes are spreading. Chi

Yun (2013) summarized eleven negative social psychological feelings such as fickleness, anxiety, hostility to the rich, hostility to the government and so on. He thought those negative psychological feelings might increase the tendecy of social instability. Zhou Xiaohong (2014) believed that the current Chinese society was developing too fast, with uneven dividend reforms and other issues have made the Chinese social psychology begin to have a negative attitude, such as impetuousness, noise, flicker, speculation, showing off wealth, violence, and indifference. In all these negative sentiments, social fear is distinct. People are afraid of toxic food and radiation. They fear being abandoned by their country. People are also suspicious. The tend to question and deny everything they meet. For example, they attribute officers' suicide to their guity corruption (Ge, 2013).

In the new media environment, the public is free to accept a variety of information and can express their views freely, and unreservedly show their ideas. So with the increasing use of internet, these negative social mantalities are displayed more abviously. The study of Fudan University in 2014 suggested that a sense of unfairness and insecurity was the most widespread negative social mood. This study showed that 44.7% of internet users displayed a sense of injustice, and 41.3% displayed a sense of insecurity. In the network, it is possible that some anti-social behaviors or language appear more frequently. People`s self-control is reduced. Their sense of shame is reduced which results in more rude language.They tend to be more radical (Yu, C., 2014; Yu, Y. & Sha, G, 2014).

Especially in these recent years, many crisis events have spread as results of network discussion, such as the 7`23 Wenzhou accident. In this accident, one high-speed railtrain crashed on July 23th, 2011. Once reported on the sina weibo (Chinese Twitter), this accident attracted huge discussions. Most internet users were skeptical of the official statements about the cause. They attributed the accident to corruption of government and their indifference. Public opinion was full of anger and despair (Wan, 2012). In other similar events, discussion on the internet also displayed the same public opinions (Li, 2012).

However, on the other hand, the information on the internet is multi-faceted, so-called "explosive" information. Internet users may have a lot of chances to gain more and more knowledge, much of which they might have had no chance to get before new media. As a result, they may grow up and become more intelligent. Internet users' emotions may become more and more rational. Our online social mentality may become more neutral rather than negative. In the first years of the we-media era, around 2011, when a great news story was reported on the internet, for example the "Guo Meimei event" or "723 Wenzhou accdent", people tended to show their anger toward government. But recently, once similar things happened, many people volunteered to stand up for the government. They tried to protect our government using convincing evidence. More and more internet users tried to get more information rather than criticize for the first time. They are learning to obtain and distinguish information. In 2011, there was bad news about a baby. The news said that an 8 days old baby was suggested to have a surgery that cost 100 thousands yuan (Chinese dollar). However, the father healed the baby just using a pill that cost less than 1 yuan. After this news, the public opinion was boiling. Everyone was extremely angry at the Chinese medical system. They showed their desperation in the doctor, the nurse, the hospital and the government. In the end, the public found that it was an immoral report by the newspaper. In 2014, another bad news stated that a pregnant woman was lying on the operating table naked but all the medical workers were missing. This time, public opinion was not as intense as before. About one third of the netizens realized that it might be an exaggerated report (Su Qianqian, 2015). Still, there were many netizens who showed their anger on the sina weibo or other network, but more and more people believed there was some reason.These two events were almost the

same. They were all about one medical accident exaggereted by the media reports. However, public reactions were not the same.

Public Opinions of the Tianjin Explosion

Looking into a nearby diaster to examine the social mentality behind public opinions on the internet, the Tianjin explosion happened on August 12th of this year. To collect and analyze the public opinion on the sina blog, we used several tools. The first one was the Micro index. The micro index is an index product based on massive user behavior data, Twitter data, and using a scientific calculation method to reflect the development of events in different fields. Simply, it can record the disscussion quantity about an everyday keyword. So we can see the changes of people discussing something. According to the micro index of the "Tianjin explosion" on sina weibo (see Figure 1), we could find that one day after the explosion, August 13th, most people talked about it. Then it quickly dropped. So we collected tweets from 8:00 pm August 12th to 24:0 0 pm August 13th, every 1 hour. We used "Tianjin explosion" as a keyword to search on sina weibo. Then "Ba Zhua Yu Collector" was used to download them. There was a limit that a sina weibo search can only display 40 at a time, and 7429 twitters were eventually collected as a result. In weibo users, a name with a blue V represents that it is a organization user. Because we assumed organization twitters represent official annoucements, rather than personal opinions, especially many media organizations, we excluded them. We also excluded same tweets that were published by the same person as well as irrelevant tweets. Evenutally, 5871 twitters were left for further analysis.

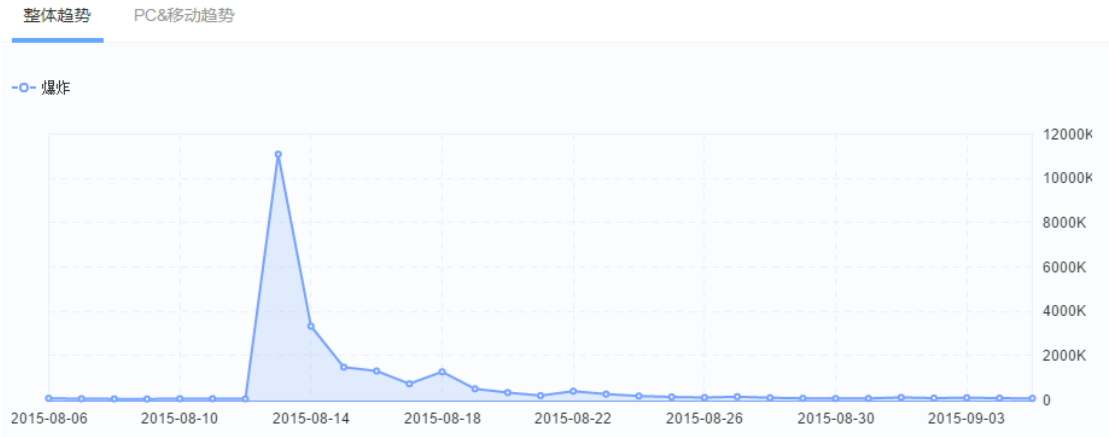

Figure 1. **Micro Index of the "Tianjin Explosion"** (Source: Micro index, http://data.weibo.com/index)

Rost Content Mining is software for Chinese content mining. It can handle word frequency statistics, clustering, correlation analysis, text analysis and sentiment analysis. We used this software first to do the text analysis. The most frequently appearing nouns, verbs and adjectives are listed in Table 1. Their network is displayed as Figure 1. We combined them we could see that in the first day after explosion, most people showed a good wish for those who were suffering. For "pray/blessing" appeared 2016 times. Public opinion focused on the accident itself. They knew little about the accident, all they could do is spread the news and pray. People showed their pity about the dead, and their concern about the injured. Then they associated it with themselves, and they were afraid that a similar thing might happen to them. "Come first" was included in the sentence, "You never know tomorrow and accident which one will come first".

Also in this explosion, "go into the fire" was highly mentioned. It meant that when the explosion happened, all people ran out except those firefighters. They were the "heroes".

Table 1. ***High Frequency Words from 5871 Tweets***

	word	frequency		word	frequency		word	frequency
	safe	1376		explosion	3000		accident	763
	strong	276		pray/blessing	2016		life	689
	fragile	190		go in peace	660		dead person	675
	suddenly	169		cherish	635		diaster	648
	terrible/horrible	163		humage	475		video	498
	dangerous	140		go into the fire	447		hero	428
	important	130		save	373		world	421
	sad	123		come first	373		friend	380
	happy	117		come back	299		news	366
adjectives	lovely	84	verbs	sacrifice	231	nouns	hospital	295
	tiny	77		live	227		new district	262
	serious	70		think	213		warehouse	232
	great	67		die	210		wounded person	227
	careful	67		earthquake	198		news	204
	brave	66		donate blood	180		feeling	190
	actual	64		be injured	163		government	167
	greieved	61		be touched	149		soldier	165
	anxious	60		lost	123		landslide	164
	fine	60		help	119		city	162

In the 5871 tweets published the first day after explosion, the positive affect and negatie affect were nearly the same. Tweets with a neutral affect were hardly seen. In a positive affect, a slight positive was 52.31%, middle positive was 26.92% and 20.7% was highly positive. In twitters with negative affect, 52.11% were slightl negative, 24.91% were somewhat negative, and 10.30% were highly negative.

When we looked into the tweets with a positive affect, we found that 43.75% were praying for those sufferring stating, “May God bless them” or “Bless! Wish everyone be safe” and so on. 39.06% tweets were compliments of people who supplied help expecially firefighters, for exmple, “Deeply moved by the firefighters. You are the most lovely ones on the world!” or “Going into the fire! You are so handsome!”. In a few of these compliment tweets, they praised the other behaviors such as donating money and blood. 21.88% netizens expressed their hope for their own and friends’ lives. Through the explosion, they were shocked by the uncertainty of life. However, they were not depressed. Instead, they said, “ You never know tomorrow and accident which one will come first. So cherish your friends. Live everyday hard”. Another 6% netizens were going to supply help, “I will go to donate my blood” or “Spread: These are informations of hospitals. Let more injuries know”. (Because sometimes there were both prayers and compliments of both compliments and wishes, so the number was more than 100% when the four proportions were added up.)

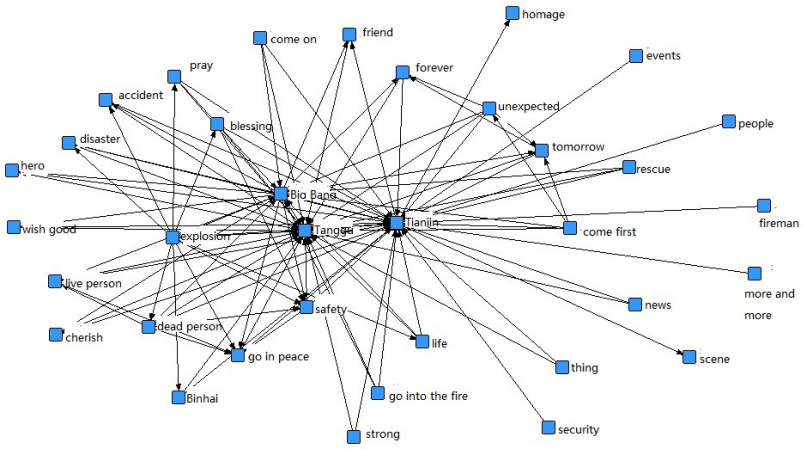

Figure 2. **Semantic Network of 5871 Tweets** (all Chinese were translated to English)

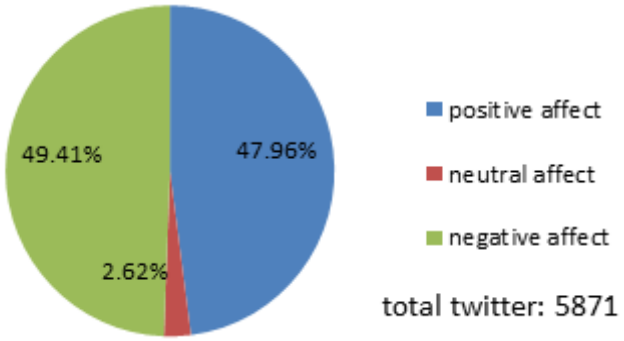

Figure 3. **Sentiment Analysis of the 5871 Tweets**

We also classified the tweets with a negative affect, and 26.32% were about different levels of sadness. “I am so sad about the accident. I feel sorry of them. May God bless them”. “What is wrong with this world? So depressed”. 21.05% expressed kind of terror. “It is horrible”, “I cannot sleep once think about the same things. How terrible!” 15.79% of the people questioned the government, blaming the leadership. For example, “Why they built the dangerous goods warehouse around people`s departments”, “Why they did not disclose more details?”. There were 7.02% of the tweets that queried the media, especially Tianjin TV because all other major medias including TV and newspapers, as well as the internet media, published the explosion news except Tianjin TV. It was unusual because the accident happened in Tianjin. Tianjin TV was to report the news first of the time. So they doubted that media in Tianjin was controlled. So this 4% of tweets also could be treated as a query of the government. 5.26% of the tweets expressed anger but we did not know whom they were angry at. Most of them were rude language. Another 5.26% of the tweets criticized other people’s opinions that were not reasonable. They felt that someof the tweets were idle rumors or just vents. They might lead to unexpected followers. We thought this phenomenon was a symbol of society’s progress. 19.30% were others because Rost CM tended to translate “no” and “not” to negative.

So as a conclusion, we can see that in this accident, people paid more attention to the event itself rather than blaming the government. Also in the first day after the explosion, there were several rumors such as “xxx (more than the real number) people died” or “there was cyanide everywhere, everyone must be

careful". But most people doubted them. They chose to get prooof from the authorities. Many appealed that all should remain rational and refuse these rumors.

The Importance of Opinion Leaders

In this accident, @people daily played a very good role as opinion leaders. Throughout the process, it continued to publish the latest developments about the accident. It gave no comment, but only facts such as the number of people rescued, and the number of firefighters sacrificed. Such behavior allowed the public to understand what was going on at the time. It did not evade the question that there was fault in the management of Tianjin government. This gave the public a lot of comfort. Other media followed @people daily, as well as some pop star personal twitter accounts such as @yaochen (a most popular actress). They carefully published tweets with a positive or neutral mood. All of these opinion leaders played an important role in leading public to the right way.

Even following the opinion leaders, the public tended to focus on and spread the positive. Within all the tweets that @people daily published, the most forwarded one was "say goodbye to the 6 fighters sacrificed in the fire…". More than 780 thousand netizens forwarded this tweet. To honor the firefighters, @yaoyaoxiaojing who is a verified cartoonist created the cartoon – "the most handsome going into the fire". In just one hour, more than 200 thousand people had forwarded it. The word "going into the fire" appeared frequently in the next few days. In the face of tragic events, the public wants to emphasize some positive aspect. There is not just only anger, hostility or other negative mentality. Public opinions online tend to be more and more rational.

References

Chi, Y. (2013). *Unbalanced social mentality in the transition period and adjustment*. Shandong: Shandong Education Press.

CNNIC. (2015). Thirty-sixth China internet network development status statistics report. Retrieved July 23, 2015, from http://www.cnnic.net.cn/hlwfzyj/hlwxzbg/201502/P020150203551802054676.pdf.

Fudan Development Institute. (2014). China network social mentality report (2014). Retrieved July 23, 2015, from http://fddi.fudan.edu.cn/index.php?c=article&a=show&aid=675.

Ge Y. (2013). Study of social mentality in social transition period. *Journal of Chongqing College of Electronic Engineering, 22,* 32-36.

Li, Y. (2012). A profound investigation of the crisis of public opinion based on network – From the perspective of social mentality. *Journal of Political Science and Law, 29,* 119-123.

Ma, L. (2013). People daily: Social network hostility. Why is it difficult to resolve? Retrieved July 23, 2015, from http://opinion.people.com.cn/n/2013/0115/c1003-20201583.html.

Sohu.com (2013). Analysis the source of network hostility. Retrieved July 23, 2015, from http://news.sohu.com/s2013/liqi/.

Su, Q. (2015). The influence of medical incident reporting on the audience's attribution. *Media Time, 6,* 117-118.

Wan, Z. (2012). Research on the communication of "July 23 Wenzhou high-speed collision". *Master Thesis*. Hunan: Hunan University.

Yu, C. (2014). The current situation and countermeasures of We-media communication and social psychology adjustment. *Chinese Journalist, 9,* 114-116.

Yu Y., & Sha, G. (2014). Existential anxiety in We-media time. *Southeast Communication, 11,* 44-46.

Zhou, X. (2014). Chinese social mentality crisis is spreading. *People's Tribune, 25,* 21-23.

A Cross-Cultural Analysis of Ambivalence of Emotional Expression and Brief Symptom Inventory: The Moderating Role of Culture

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[Abstract] *The purpose of this study was to explore whether there are cross cultural differences between the ambivalence of emotional expression and brief symptom inventory in Chinese and Americans. Using data from American (N=549) and Chinese (N=409) undergraduates, zero-order correlations and regression analysis were conducted. The results supported our primary hypothesis that Chinese students reported greater scores on ambivalence of emotional expression and four dimensions of the brief symptom inventory than American students (p<0.01). Ambivalence of emotional expression was positively related to four dimensions of the brief symptom inventory, and culture played a moderating role among ambivalence of emotional expression and the depression dimension (β=.000,p<.001).*

[Keywords] *cross-cultural research; ambivalence of emotional expression; brief symptom inventory; undergraduates*

Introduction

Pennebaker (1985) pointed out that the lack of emotional expression would not likely cause disease, but it is not healthy if one didn't express his emotions with the strong desire to express. King & Emmons (1990) constructed Ambivalence of Emotional Expression (AEE). In their paper, AEE is defined as the extent to which a person is comfortable with the way he or she expresses emotions, independently of the level of expressiveness per se. A number of previous studies found that higher levels of AEE are associated with significantly higher levels of depressive symptoms in various populations including college students, rheumatoid arthritis patients, Chinese breast cancer survivors and the general population (King, & Emmons, 1990; Krause, Mendelson, & Lynch, 2003; Lu, Uysal, & Teo, 2011; Mongrain, & Zuroff, 1994; Tucker, Winkelman, Katz, & Bermas, 1999; Katz, & Campbell, 1994). Depression and anxiety are theorized to play a critical role in the development or maintenance of negative emotions. However, culture may be viewed as an important source of an individual's values, expectations, and needs (Markus & Kitayama, 1991). Culture is a system that provides specific norms, rules and guidelines for how to conduct actions in given situations, and thus, bestows meanings to those actions (Kim & Markus, 1999; Bruner, 1990; Shweder, 1995). Thus, even a similar underlying motivation can lead to drastically different actions and psychological consequences in different cultures (e.g., Heine, Lehman, Markus, & Kitayama, 1999; Kim & Markus, 1999; Mesquita, 2001; Taylor, et al., 2007). Culture provides individuals with lay theories about the world, and until now, there has been little research that has examined cultural variation in the two countries on AEE and BSI.

As has been the case with much of psychology, most of the theory-building and empirical investigations relevant to AEE and BSI have originated within Western cultures. It is largely unknown whether these meaningful dimensions are similarly prominent in non-Western cultures (Steger, et al., 2008). So we recruited 549 undergraduates from Houston University in American and 409 undergraduate

in Guangxi Normal University in China. The goal of the present study is to investigate the cultural difference between Chinese and Americans on AEE and BSI.

Method

We recruited 409 participants in China to match the 549 participants recruited in America. We sampled college-age adults in both China and the United States, and included measures of Ambivalence of Emotional Expression and the Brief Symptom Inventory. In the Chinese sample, of the 500 questionnaires, 450 (90.89%) were returned. Due to incomplete data, only a total of 409 questionnaire responses were included in the final dataset. To establish measurement invariance of the AEE and BSI in the two samples, we conducted a series of multi-group confirmatory factor analyses on the combined data from the US and China using AMOS17.0. As recommended in previous research, we used the CFI, NNFI and RMSEA to evaluate the fit of the AEE and BSI across the cultures (Hu & Bentler, 1999; Little, 1997). According to these indices, the model fit well in both cultures, which allows us to assume that any difference interval levels are due to culture, rather than a lack of measurement equivalence.

The United States Sample

Participants and Procedure

Participants were recruited from undergraduates at Houston University in the United States. The American participants sampled were mostly American Indian/Alaskan Native, Asian, Native Hawaiian or other Pacific Islander, Black or African American, White, More than one race/Other: specify, and thus, this sample consisted of 549 college age Americans.

Measures

Ambivalence of Emotional Expression. AEE was assessed using the Ambivalence of Emotional Expression Questionnaire (AEQ) (King, & Emmons, 1990). This self-reported questionnaire asked participants to rate the items from 1 (never) to 5 (frequently) and measured the individuals' inner conflict of having the desire to express emotions while fearing the consequences of them; for example, "I worry that if I express negative emotions such as fear and anger, other people will not approve of me." The higher the score of AEE, the greater ambivalence of emotional expression of the individual. The internal reliability in the current research was good (α = .89), and the scale was shown to be predictive of psychological distress among college students.

The Brief Symptom Inventory. The BSI consists of four subscales including depression, anxiety, interpersonal sensitivity and hostility. it uses a 5-point rating scale ranging from 0 (not at all) to 4 (extremely severe) and measures the extent to which one has experienced depressive symptoms (e.g., feeling blue, feeling no interest in things) during the last week. The internal reliability of the BSI was good in this study (α = .88).

The Chinese Sample

Participants and Procedure

A total of 409 participants were recruited from undergraduates at a southern university in China, and the students completed survey packets in class. They were aged 20.34 years old on average (SD=2.02) and 62.8% were female. Following a standard procedure, the measure was first translated by a member of the

bilingual research team; a second person then back translated the items into English; and a third person compared it with the original English version and made suggestions for further revision of translation. This process was repeated until all of the items were equivalent in meaning.

Measures

Chinese Ambivalence over Emotional Expression. The participants completed the 28 items of AEE. The internal reliability was good in this study (α = .94) compared to those studies which used the original version. The 95% confidence interval was [0.922, 0.934]. The scale is currently used in Ambivalence of Emotional Expression.

The Chinese Brief Symptom Inventory. Depressive symptoms were assessed using the depression sub-scale of the Brief Symptom Inventory (BSI).The depression sub-scale consists of six items; it uses a 5-point rating scale ranging from 0 (not at all) to 4 (extremely severe) and measures the extent to which one has experienced depressive symptoms (e.g., feeling blue, feeling no interest in things) during the last week. The internal reliability was good in this study (α = .90).

Statistical Analyses

Analyses were conducted using SPSS20.0. The frequency distributions of all variables were examined for outliers and for meeting assumptions for parametric tests. Variables that were found to differ significantly from normality were transformed using appropriate non-linear functions. Missing data analyses were performed comparing means and proportions of demographic, clinical, and distress characteristics between completers for this study and non-completers (i.e., participants missing data on one or more measures) using t-tests. Bivariate correlations were computed among all study variables using two-tailed Pearson product–moment correlations. A hierarchical linear regression was used to test the main study hypotheses.

Results

Preliminary Statistical Analysis of Demographic Variables

Independent sample t test was conducted to analyze the differences in AEE and four dimensions of BSI in Table 1.

Table 1. ***Cultural Differences in AEE and Depression, Anxiety, Interpersonal Sensitivity and Hostility***

	Chinese (n=409) (M±SD)	**American (n=549) (M±SD)**	***t***	***p***
AEE	3.17±0.64	2.86±0.78	6.65^{***}	.000
Depression	1.08±0.77	0.77±0.79	5.98^{***}	.000
Anxiety	1.22±0.87	0.73±.0.75	9.37^{***}	.000
Sensitivity	1.45±0.86	0.94±.0.87	9.07^{***}	.000
Hostility	1.04±0.80	0.67±.0.68	7.55^{***}	.000

*Note: *p<0.05; **p<0.01; ***p<0.001.*

As can be seen from Table 1 above, the Chinese students reported more scores on AEE and four dimensions of BSI than the Americans, and reached significant differences (p<0.001). These results were consistent with our Chinese culture.

Correlations Relation on AEE and BSI between Chinese and American

We examined whether relations of AEE and BSI also differed across cultures (Table 2). AEE, aside from its association with four dimensions of BSI, the pattern of relations for AEE appeared nearly positive across the two cultures, with AEE being positively related to BSI scores in Chinese and American.

Table 2. ***Correlations Matrix on AEE and BSI Between Chinese and American***

	1	2	3	4	5
Chinese					
1. AEE	-				
2. Depression	.33**	-			
3. Anxiety	.36**	.82**	-		
4. Interpersonal sensitivity	.43**	.75**	.75**	-	
5. Hostility	.27**	.79**	.73**	.66**	-
American					
1. AEE	-				
2. Depression	.43**	-			
3. Anxiety	.42**	.73**	-		
4. Interpersonal sensitivity	.44**	.76**	.73**	-	
5. Hostility	.28**	.62**	.61**	.63**	-

As shown in Table 2, the positive correlation relations on AEE and four dimensions of the brief symptom scales, both in Chinese and American students, were significant ($p<0.01$). These results were consistent with our hypothesis.

The Moderation Effect by Culture between AEE and BSI

To assess whether culture moderated the relation between the AEE and BSI, we performed a hierarchical multiple regression, with AEE as the criterion variable. Because the two cultural samples didn't differ in sex and grade, these two variables weren't entered as covariates, along with AEE scores and culture in the first step. A term for the interaction of culture and AEE scores was entered in the second step. AEE and BSI scores were standardized prior to entry in the regression analysis.

Table 3. ***Moderation by Culture of the Relation between AEE and BSI***

Step and variables	Depression		Anxiety		Interpersonal sensitivity		Hostility	
	β	*t*	*β*	*t*	*β*	*t*	*β*	*t*
Step 1								
AEE	0.36	11.97***	0.36	12.33***	0.40	13.59***	0.25	8.06***
Culture	-0.11	-3.75***	-0.21	-7.26***	-0.20	-6.82***	-0.19	-5.93***
	$\triangle F$= 92.15*** $\triangle R^2$=.162		$\triangle F$=126.78*** $\triangle R^2$=0.210		$\triangle F$=141.38*** $\triangle R^2$=0.228		$\triangle F$=62.91*** $\triangle R^2$=0.116	
Step 2								
AEE×Culture	0.001	12.92***	-0.08	-1.64	-0.09	-1.87	-0.09	-1.76
	$\triangle F$=61.37*** $\triangle R^2$=0.000		$\triangle F$=85.57*** $\triangle R^2$=0.002		$\triangle F$=95.67*** $\triangle R^2$=0.003		$\triangle F$=43.07*** $\triangle R^2$=0.003	
AdjR^2	0.159		0.210		0.229		0.117	

Results are presented in Table 2. Consistent with the dialectical model of AEE, the interaction term was significant (β=0.001, $p < .001$) on depression, and simple slopes analysis (Aiken & West, 1991) indicated that whereas there was a positive relation between AEE and depression, the results were essentially the same when age and sex were not included as covariates, with the interaction term indicating significant moderation.

Discussion

This study investigated how AEE was associated with four dimensions of the BSI between Chinese and American undergraduates and how the association was moderated by culture. We consistently found that there existed cultural differences between the two countries and this effect could be moderated by culture. These findings have two major contributions. First, we extended previous research on AEE. Second, our findings emphasized the importance of culture. Therefore, we speculate that culture can explain the differences on AEE and BSI. Future research may further explore experimental design and longitudinal research to validate the moderation role. This study is subject to several limitations. One limitation is that the major concern of using self-reported measures is common-method bias, which may exert a systematic effect (e.g. acquiescence or leniency effects) on the observed correlation between the measures (Podsakoff, P., MacKenzie, Lee, & Podsakoff N., 2003). Thus, the observed correlations between the measures could be inflated because of common method bias. Despite the limitation, we still use self-reported measures for the following reasons. Firstly, as AEE is always clandestine, measuring it is always a challenge. Secondly, we are interested in the negative emotion so thus, it is very difficult to come up with precise objective measures. Balancing the strengths and weaknesses, we consider self-reported measures as the best candidate of measurements so far. We are open for suggestions on resolving issues with measurements in understanding the negative emotion in future studies. Secondly, this is a cross-sectional study with a convenience sample. To what extent the findings can be generalized to other cultures should be tested. Despite these limitations, this study is among the first to investigate the role of culture on AEE and BSI in an understudied population, Chinese undergraduates. Moreover, this study is one of the few to highlight culture differences. With increased racial/ethnic diversity throughout the world, health-care professionals should deliver individualized services tailored to those with different racial/cultural and demographic characteristics who cannot express their emotions properly. Additional research also needs to address the impact of AEE on psychological health. It may be beneficial to design and evaluate emotion regulation intervention specifically targeted at reducing AEE.

Conclusion

In conclusion, the present study extends previous findings by revealing cultural differences between AEE and four dimensions of the BSI among Chinese and American undergraduates. In particular, Chinese undergraduates reported greater scores on AEE and four dimensions of the BSI than American undergraduates. The reason for this is that Chinese culture emphasizes harmony and avoiding conflict with others. AEE was positively related to four dimensions of the BSI; culture played a moderating role between AEE and the depression dimension in the current research. Moreover, this is a cross-sectional study with a convenience sample, and to what extent the findings can be generalized to other culture should be tested.

References

Pennebaker, J.W. (1985). Traumatic experience and psychosomatic disease: Exploring the roles of behavioral inhibition, obsession, and confiding. *Canadian Psychology*, *26,* 82-95.

King, L. A., & Emmons, R. A. (1990). Conflict over emotional expression: Psychological and physical correlates. *Journal of Personality and Social Psychology*, *58*, 864-877.

Boulet, J., & Boss, M. W. (1991). Reliability and validity of the brief symptom inventory. *Psychol Assess J Consult Clin Psychol*, *3,* 433-437.

Krause, E. D., Mendelson, T., & Lynch, T. R. (2003). Childhood emotional invalidation and adult psychological distress: The mediating role of emotional inhibition. *Child Abuse Negl*, *27*, 199-213.

Lu, Q., Uysal, A., & Teo, I. (2011). Need satisfaction and catastrophizing: Explaining the relationship among emotional ambivalence, pain, and depressive symptoms. *J Health Psychol*, *16*, 819-827.

Mongrain, M., & Zuroff, D. C. (1994). Ambivalence over emotional expression and negative life events: Mediators of depressive symptoms in dependent and self-critical individuals. *Personal Individ Differ*, *16*, 447-458.

Tucker, J. S., Winkelman, D. K., Katz, J. N., & Bermas, B. L. (1999). Ambivalence over emotional expression and psychological well-being among rheumatoid arthritis patients and their spouses. *J Appl Soc Psychol, 29*, 271-290.

Katz, I. M., & Campbell, J. D. (1994). Ambivalence over emotional expression and well-being: nomothetic and idiographic tests of the stress-buffering hypothesis. *Journal of Personality and Social Psychology*, *67*, 513-524.

Kim, H., & Markus, H. R. (1999). Deviance or uniqueness, harmony or conformity? A cultural analysis. *Journal of Personality and Social Psychology*, *77*, 785-800.

Bruner, J. (1990). *Acts of meaning*. Cambridge, MA: Harvard University Press.

Shweder, R. (1995). Cultural psychology: What is it? In N. R. Goldberger & J. B. Veroff, (Eds.), *The Culture and Psychology Reader,* (pp. 41-86). New York: New York University Press.

Heine, S. J., Lehman, D. R., Markus, H. R., & Kitayama, S. (1999). Is there a universal need for positive self-regard? *Psychological Review*, *106*, 766-794.

Mesquita, B. (2001). Emotions in collectivist and individualist contexts. *Journal of Personality and Social Psychology*, *80*, 68-74.

Steger, M. F., et al., (2008). The meaningful life in Japan and the United States: Levels and correlates of meaning in life. *Journal of Research in Personality*, *42*(3), 660-678

Taylor, S. E., Welch, W. T., Kim, H. S., & Sherman, D. K. (2007). Cultural differences in the impact of social support on psychological and biological stress responses. *Psychological Science*, *18*, 831-837.

Kim, H. S., Ishii, K., Sasaki, J. Y., Shinada, M., & Kusumi, I. (2012). Culture, oxytocin receptor polymorphism (OXTR), and attention to emotional cues. Manuscript in preparation.

Kim, H. S., & Sherman, D. K. (2007). "Express yourself": Culture and the effect of self-expression on choice. *Journal of Personality and Social Psychology*, *92*, 1-11.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879-903.

The Bad Apple Effect in Interpersonal Trust and its Transmission

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[Abstract] *The bad apple effect means that individuals would turn to be unethical after observing another's unethical behaviors such as cheating. It is important to know whether a third party's untrustworthy behavior inhibits an observer's trust and how profound this effect is to affect the behaviors of second- and third-hand observers. To investigate these questions, this study designed a trust game with a transmission chain. It was revealed that participants' trust toward their own partners was inhibited by observing a third party's untrustworthy behavior. Trustors who observed the third party's untrustworthy behavior expected their own partners as less trustworthy, and this expectation was positively correlated with the real trustworthiness of their partners. Fortunately, the bad apple's effect weakened with the transmission of a trust chain. The trust level of participants, especially those participants who observed the third party's untrustworthy behaviors, restored gradually.*

[Keywords] *bad apple effect; trust; trustworthiness; transmission chain*

Introduction

Based on the fact that a domino can knock down another that is 1.5 times larger, physicist Whitehead (1983) demonstrated that if the knock-down series were continued, the thirty-second domino knocked down would be as huge as the twin towers of the World Trade Center. That is, a very small amount of input energy can amplify so quickly that it can knock down an enormous domino. Like the consequence of the first domino, the transmission and amplification effect also exists in interpersonal trust through social learning. For example, in 2006, Pengyu, who helped an old woman who had fallen, was framed as the perpetrator and finally was compensated about seven thousand dollars for the woman. After this case, more and more people were seemingly too cautious to help others in similar situations. The current study investigated this transmission effect in interpersonal trust.

Trust is risky (Berg, Dickhaut, & McCabe, 1995; Deutsch, 1958). In trust interactions, trustees had the opportunity and motivation to exploit trustors' investment to maximize their self-interests. In this kind of uncertain situation, social learning is far more profitable and efficient to facilitate correct decisions than individual learning (e.g., Bandura, 1977; McElreath, et al., 2005; Rendell, et al., 2010). For example, when interacting with strangers, individuals who learn from observing the consequences of a third party's trust are much easier to evaluate partners' trustworthiness correctly and make rational trust decisions than those who learn from trial-and-error. Thus, individuals have high motivation to learn whether to trust their own partners through social learning strategies.

Interpersonal trust is supposed to be influenced by a third party's trustworthiness. A great amount of research has found that participants would choose to be unethical after observing another's unethical behaviors (e.g., Gino, Ayal, & Ariely, 2009; Gino, Gu, & Zhong, 2009; Mann, Garcia-Rada, Houser, &

Ariely, 2014). For example, in Gino, Gu, & Zhong's study, participants had 5 minutes to find two numbers from a large number pool that added up to 10. The more pairs of numbers that were correctly identified, the more money that participants won. In this study, participants had an opportunity to behave dishonestly and thus, earned undeserved money by over-reporting their performance. Researchers found that the dishonest behavior of a model (the confederate) increased the observer's dishonest behavior. This kind of bad apple effect demonstrated the impact that one particular individual had on unethical acts within groups. In interpersonal trust, this effect may also exist. That is, a third party's untrustworthy behavior (the bad apple[1]) may inhibit the observer's trust. Under Social Learning Theory (Bandura, 1977), observers might turn to be ethical after observing another's ethical behaviors. What we are concerned with here is the difference between the consequences that a "bad apple" and a "good apple" would result in respectively. It is hypothesized that the trust level of participants (the first-hand observer) who observed a third party's untrustworthy behavior (the bad apple) would significantly be lower than that of participants who observed a third party's trustworthy behavior (the good apple).

If the "bad apple" and "good apple" would lead to different consequences in interpersonal trust, the further question is whether the difference will be transmitted and amplified through social learning. That is, will the behaviors of the second-hand observers who learned the behaviors from the first-hand observers be differentiated by the initial "bad apple" and "good apple", and so on? In our opinion, there are (at least) two possible answers for this question.

First, the different consequences that a "bad apple" and a "good apple" result in might be transmitted. According to Social Learning Theory (Bandura, 1977), models will affect behaviors of the second-hand observers, the third-hand observers, and so on. In interpersonal trust, the third party's untrustworthy behavior would result in the transmission of distrust. That is, if the first-hand observer's (i.e., trustor's) trust was inhibited by observing the third party's untrustworthy behavior, the second-hand observer (i.e., trustor) would distrust his/her partners after observing the interactions of the first-hand observer, and so on. In contrast, the third party's trustworthy behavior would result in the transmission of trust among observers.

Second, the difference might shrink gradually. On the one hand, humans can positively react to the others' influences (e.g., Bartlett, 1932; Kirby, Cornish, & Smith, 2008). For example, participants would feel guilt for their in-group member's unethical behavior, and which motivated compensating behaviors for in-group member's sin (Gino, et al., 2009). On the other hand, humans are not totally unethical to achieve self-interest maximization (Mazar, Amir, & Ariely, 2008; Shalvi, Dana, Handgraaf, & De Dreu, 2011). For example, in the dictator game, an unethical dictator could share nothing with partners. However, results showed that most participants did not behave that way (e.g., Dreber, Ellingsen, Johannesson, & Rand, 2013). In sum, observers may positively react to the negative influence of "bad apples". Therefore, observer's trust may gradually repair from the negative influence of the third party's untrustworthy behavior, which will lead to the shrinking of the difference between the results of the "bad apple" and the "good apple". However, so far there is not enough evidence to determine which outcomes will occur.

[1]In a trust game (Berg, et al., 1995), it is the people who are untrustworthy that should be blamed, not the people who distrust others. This was supported by Bicchieri, Xiao and Muldoon (2011). They found that participants are more willing to punish those who were untrustworthy rather than those who were untrusting. It seems that untrustworthiness, not untrusting, is bad. Therefore, this paper defined the "bad apple" in interpersonal trust as someone who is untrustworthy.

To sum up, we first predict the bad apple effect exists in interpersonal trust. That is, the trust level of first-hand observers who observed the third party's untrustworthy behavior would be significantly lower than that of observers who observed the third party's trustworthy behavior. Then we proposed that the difference between the consequences that the "bad apple" and the "good apple" result in may progress in two possible ways: transmitting or shrinking. We conducted a transmission chain experiment of the trust game to investigate the issue.

Method

Participants

The sample size of this study was determined on the basis of previous studies. Studies that used transmission chain methods usually contained nine or ten chains, each containing four generations of participants (e.g. Mesoudi, 2007; Mesoudi, Whiten, & Dunbar, 2006). Thus, we decided to stop the study when each experiment condition contained nine transmission chains.

One hundred and forty-four Chinese college students (92 females) participated in the experiment, M_{age} = 23.06, *SD* = 3.34. Participants were randomly assigned to one of two conditions: Bad apple or good apple condition. In each condition, 36 participants played the role of trustors and 36 participants played the role of trustees. Participants were paid according to their mean profits in the experiment, *M* = 16.78 *Yuan* (RMB), *SD* = 6.45.

Procedure

To investigate the bad apple effect and its transmission, this study combined the transmission chain paradigm with the trust game. Transmission chain method was originally used by Bartlett (1932) in memory studies. In classical transmission chain method, the first participant in each chain read or studied a material (e.g., a story), and then recalled it for the next participant in the chain, the second participant completed the same procedure, and so on, along the chain. The transmission chain method was widely used to investigate the transmission and evolution of culture (Mesoudi, 2007). In each round of the present trust game, each participant had a 10 *Yuan* show up fee. The trustor chose to invest X Yuan ($0 \leq X \leq 10$) to the trustee who would get 3X *Yuan*. Then the trustee returned Y Yuan ($0 \leq Y \leq 3X$) to the trustor. Therefore, the trustor's payoff equaled $10–X+Y$, and the trustee's payoff equaled to $10+3X−Y$. The trustor's trust level was represented by X, and the trustee's trustworthiness was represented by their return ratio which equaled Y/3X (if trustor invested no money, the trustee's return ratio was 0).

We combined the transmission chain method with a trust game. In our trust-game-transmission-chain-method (Figure 1), the first trustor in the chain observed the fictitious record of the previous participant's interaction in which either the third party was ostensibly trustworthy (good apple) or untrustworthy (bad apple). Then, the first trustor played trust games with three different trustees respectively. The real interaction record of the two parties was passed on to the second trustor, and this trustor's record was also passed on to the next one, and so on along the chain. In each condition, nine chains, each containing four generations of participants, were run.

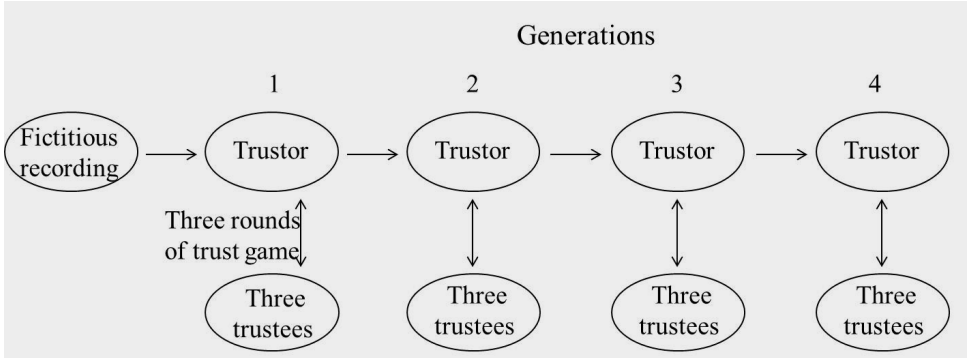

Figure 1. **One Chain of the Trust-Game-Transmission-Chain-Method**

In each condition, three transmission chains were conducted simultaneously. In each generation of each condition, six participants participated in the experiment simultaneously, three of them played the role of trustors and the other three played the role of trustees. Participants completed the experiment in different rooms to ensure the anonymity of their actions. Before the trust game in the first generation, trustors observed the fictitious recording of the previous participant's interactions (Table 1-a for trustors in a bad apple condition; Table 1-b for trustors in a good apple condition). Then, trustors wrote down their investment X on a slip of paper and placed this paper in an envelope which was delivered to the trustees by the experimenters. During a break, the trustors recorded their investment X and the amount they expected to receive from trustees on the recording paper (in the form of Table 1). Trustees wrote down their returning Y toward the corresponding investment on the slip of paper, returned it to the envelope and it was delivered to the corresponding trustors by the experimenters. After receiving the returned envelopes, trustors calculated and recorded their profits on the recording paper. Each trustor played three rounds of the trust game with three different trustees and no one except the trustors and trustees were able to see their own investments. Afterward, six participants in the second generation did the same as those in the first generation, except that the trustors in the second generation observed the real recording of their previous corresponding trustors in each chain. The third and fourth generations continued the process. In the experiment, the trustees did not observe any information about the other's interactions.

Table 1-a. ***The Fictitious Record for Trustors in a Bad Apple Condition (Yuan)***

	Your Investment	**Expected Returning**	**Real Returning**	**Your Profits**
Round one	5	7	2	7
Round two	2	5	0	8
Round three	8	10	1	3

Table 1-b. ***The Fictitious Record for Trustors in a Good Apple Condition (Yuan)***

	Your Investment	**Expected Returning**	**Real Returning**	**Your Profits**
Round one	5	7	9	14
Round two	2	5	5	12
Round three	8	10	14	16

Note: In the fictitious recordings, the trustor's investments (2, 5, 8 Yuan) and expected returns (5, 7, 10 Yuan) were the same in the bad apple and good apple conditions. However, the real returns in the bad apple condition were much less (less than 10% of triple investment) than those in the good apple condition (more than 50% of triple investment), (according to Buchan and Croson (2004), trustees received an average return of about 30% of the triple investment to trustors). In the experiment, the investments (2, 5, 8 Yuan) were ordered randomly.

Results

Participants' Trust Level

Participants' (i.e., trustors') investments in the four generations of the transmission chain are shown in Table 2.

Table 2. ***Participants' Trust Level (M ± SD)***

	Generations			
	One	***Two***	***Three***	***Four***
Good apple condition	6.59 ± 1.32	7.81 ± 2.07	8.11 ± 2.02	8.07 ± 1.89
Bad apple condition	4.45 ± 2.05	4.63 ± 1.70	6.63 ± 2.98	7.96 ± 1.88

We first examined the effect of the third party's trustworthiness on the first-hand observer's trust. Independent sample *t* test revealed that the participants' trust in the first generation of the bad apple condition was significantly lower than that of the good apple condition ($t(16) = 2.55$, $p < .05$, Cohen's d = 0.38), which supported our first hypothesis.

To determine the transmission of the bad apple effect and the good apple effect, a repeated measurement ANOVA was conducted. Participants' mean investment in three rounds of the trust game was taken as the dependent variable, and experimental conditions were chosen as a between-subjects factor and generations of the transmission chain were selected as the within-subjects factor. Results showed that:

- There was a significant main effect of experimental conditions, $F(1, 16) = 10.35$, $p < .005$, $\eta^2 = 0.39$. Participants' investment in the bad apple condition ($M = 5.94$, $SD = 1.42$) was significantly lower than that in the good apple condition ($M = 7.65$, $SD = 0.74$).
- There was a significant main effect of generations of transmission chain, $F(3, 14) = 5.51$, $p < .01$, $\eta^2 = 0.54$. With the progress of the transmission chain, participants' investment increased linearly, $F(1, 16) = 16.77$, $p = 0.001$, $\eta^2 = 0.51$. Participants' trust level in the first generation ($M = 5.56$, $SD = 1.98$) was significantly lower than that in the third generation ($M = 7.37$, $SD = 2.58$, $p = 0.04$) and in the fourth generation ($M = 8.02$, $SD = 1.83$, $p = 0.001$). Participants' trust level in the second generation ($M = 6.22$, $SD = 2.46$) was significantly lower than that in the fourth generation ($p < .01$).
- Although no significant interaction effect was revealed ($F(3, 14) = 2.06$, $p = .15$, $\eta^2 = 0.31$), it is notable that the effect of generations on the participants' trust level had the trend of being moderated by experimental conditions (Figure 2). In the first and second generations, participants' trust level in the bad apple condition was both significantly lower than that in the good apple condition (*p*s < .05). In the third and fourth generations, there was no significant differences between participants' trust level in the bad apple condition and the good apple condition (*p*s > .10). It seems that, with the progress of the transmission chain, participants' trust level in the bad apple condition was increased gradually to the same trust level as in the good apple condition, which supported the "shrinking" hypothesis.

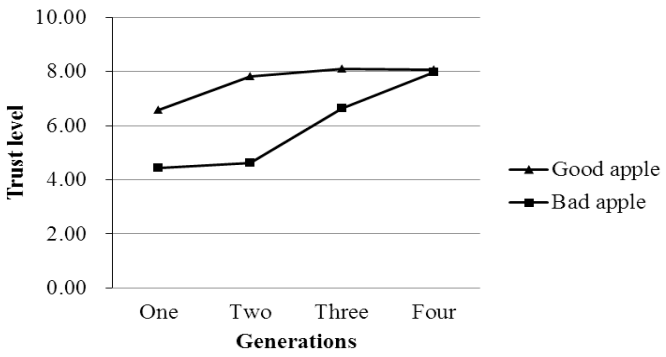

Figure 2. **Participants' Trust Level in Four Generations**

Trustors' Expected Return Ratio Toward Trustees

Trustors' expected return ratio reflected their estimation of the trustworthiness of the trustees. The expected return ratio, which equals the expected return/(3×investment), is shown in Table 3.

Table 3. ***Trustors' Expected Return Ratio Toward their Partners (M ± SD)***

	Generations			
	One	***Two***	***Three***	***Four***
Good apple condition	0.50 ± 0.09	0.49 ± 0.08	0.52 ± 0.11	0.60 ± 0.10
Bad apple condition	0.43 ± 0.14	0.47 ± 0.10	0.43 ± 0.18	0.50 ± 0.13

The same repeated measurement ANOVA was conducted, which took trustors' mean expected return ratio as the dependent variable. Results showed that:

- There was a marginal significant main effect of experimental conditions, $F(1, 16) = 3.60$, $p < .07$, $\eta^2 = 0.18$. Trustors' expected return ratio in the bad apple condition ($M = 0.46$, $SD = 0.08$) was significantly lower than that in the good apple condition ($M = 0.53$, $SD = 0.08$). That is, the third party's untrustworthy behavior destructed the observer's estimation of the trustworthiness of one's own partner.
- There was a significant main effect of generations of transmission chain at 0.10 level, $F(3, 14) = 2.45$, $p < .10$, $\eta^2 = 0.34$. With the progress of the transmission chain, trustors' expected return ratio increased linearly, $F(1, 16) = 5.73$, $p < .03$, $\eta^2 = 0.26$ (Figure 3). Trustors' expected return ratio in the first generation ($M = 0.47$, $SD = 0.12$) and in the second generation ($M = 0.48$, $SD = 0.08$) were both significantly lower than that in the fourth generation ($M = 0.55$, $SD = 0.12$, ps $< .05$). Trustors' expected return ratio in the third generation ($M = 0.48$, $SD = 0.15$) was significantly lower than that in the fourth generation at 0.10 level. There was no significant interaction effect revealed ($p > .10$).

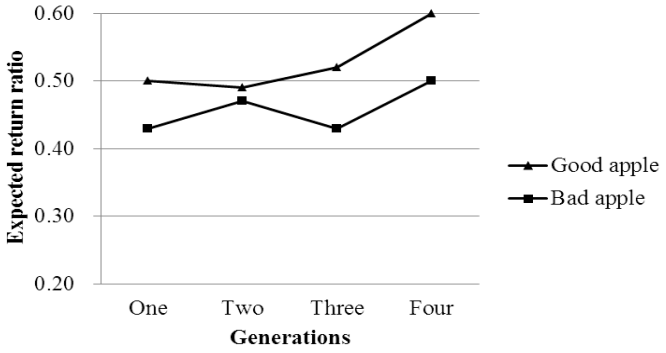

Figure 3. **Trustors' Expected Return Ratio in Four Generations**

Participants' expected return ratio was significantly correlated with their investment (r = 0.42, p < .01), which indicated that the third party's trustworthiness impacted the observers' expected trustworthiness toward their own partners which then influenced the trust level that the observers performed.

Trustees' Return Ratio

Trustees' real return ratio is depicted in Table 4 and Figure 4.

Table 4. ***Trustees' Return Ratio (M ± SD)***

	Generations			
	One	***Two***	***Three***	***Four***
Good apple condition	0.45 ± 0.14	0.45 ± 0.18	0.47 ± 0.17	0.36 ± 0.11
Bad apple condition	0.28 ± 0.11	0.42 ± 0.15	0.40 ± 0.08	0.36 ± 0.11

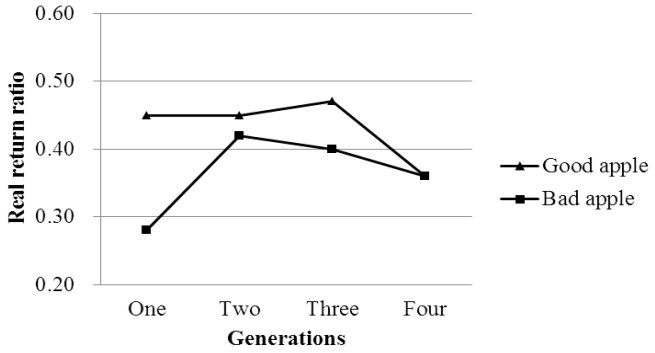

Figure 4. ***Trustees' Return Ratio in Four Generations***

A repeated measurement ANOVA, which involves trustees' return ratio as the dependent variable, was conducted. Results showed that:

- There was a significant main effect of experimental conditions at 0.10 level, $F(1, 16) = 3.05$, $p < .10$, $\eta^2 = 0.16$. The return ratio of trustees who interacted with trustors in the bad apple condition (M = 0.36, SD = 0.07) was significantly lower than that of trustees who interacted with trustors in the good apple condition (M = 0.43, SD = 0.09). The result indicated a

self-fulfilling prophecy: If trustors observed the third party's untrustworthy behavior, they would evaluate their own partners as untrustworthy, and this evaluation turned out to be reality finally. This was supported by the positive correlation between trustors' expected return ratio and trustees' real return ratio ($r = 0.31$, $p < .01$).

- Second, there was a significant interaction effect between experimental conditions and generations of transmission chain, $F(1, 16) = 15.99$, $p = .001$, $\eta^2 = 0.50$. In the first generation, trustees' return ratio in the bad apple condition was significantly lower than that in the good apple condition ($p < .01$). There was no significant difference between participants' return ratio in the second, third, and fourth generations (ps > .10).

Trustees' return ratio was positively correlated with the investment they received ($r = 0.37$, $p < .01$), which indicated that the more trust that trustees received, the higher trustworthiness that trustees returned.

Discussion

Using the trust-game-transmission-chain-method, this study revealed the bad apple effect in interpersonal trust, that is the trust level of participants who observed the third party's untrustworthy behavior was significantly lower than that of participants who observed the third party's trustworthy behavior. We also found that, with the progress of the transmission chain, the difference between the results of the "bad apple" and the "good apple" shrank.

This study demonstrated the bad apple effect in interpersonal trust. In uncertain situations like the trust game, trusting the others is risky (Berg, et al., 1995). Social learning provides participants the opportunity to make rational decisions, which breeds the bad apple effect. The bad apple effect depicts the important impact of one particular individual on unethical acts within groups and organizational settings (e.g., Gino, et al., 2009; Mann, et al., 2014). In our opinion, this was derived from the fact that people tend to keep accordance with descriptive norms, which refers to what most people do in a given situation and which can be understood by observing other's behavior (Cialdini, Reno, & Kallgren, 1990). In fact, individuals usually evaluate descriptive norms not on the basis of what MOST people do, but on the basis of what SOMEONE else does. Tversky and Kahneman (1974) found that availability is a useful cue for assessing frequency or probability that a given event one may encounter. This builds the cognitive basis of the bad apple effect. That is, observing another's unethical behavior increases the availability of relevant events, thus one bad apple may impact an observer's estimation of the group norms. In our study, the trustor's expectation of the partner's return is indeed an estimation of the trustworthiness of the entire group members. To keep accordance with the untrustworthy descriptive norm in the bad apple condition, trustors in this condition had less trust than in the good apple condition.

We also revealed the self-fulfillment of the trustors' negative expectation of a partners' trustworthiness. That is, trustors who observed the third party's untrustworthy behavior tended to evaluate their own partners as untrustworthy, and this evaluation was positively correlated with the real trustworthiness of partners. There are two possible interpretations. First, trustees may punish distrusting partners through behaving untrustworthily. Researchers have found that individuals are willing to punish others who are unethical, even if the punishment is costly (e.g., Boyd, Gintis, & Bowles, 2010). In the trust game, trustees' untrustworthy behavior would bring trustors low profits. Thus, trustees may punish distrusting trustors through low returns. Second, distrusting behavior may give trustees the opportunity to justify their untrustworthy behavior. People have both desires to maintain an ethical self-concept and to

benefit financially. If participants have the opportunity to justify their unethical behaviors, they will behave unethically (Shalvi, et al., 2011). In this study, trustors' distrust may provide trustees this opportunity, thus trustees can benefit themselves financially, as well as maintain an ethical self-concept. Because the self-fulfilling prophecy, trust or distrust of partners seems a social dilemma for individuals.

We proposed two possible ways that the consequences of the "bad apple" and the "good apple" may progress. The results showed that, with the progress of the transmission chain, participants' trust in the bad apple condition increased to the same level of the good apple condition, which supported the "shrinking" hypothesis. It seems that participants' trust in the bad apple condition gradually self-repaired from the negative influence of the third party's untrustworthy behavior. Previous research had demonstrated that humans would not be totally unethical, but seek a balance between the ethical self-concept and financial benefit (Shalvi, et al., 2011). In this study, trustors' motivation to maintain their ethical self-concept may prevent the transmission of the bad apple effect. In repeat interactions, trustors and trustees have the opportunity to build mechanisms (e.g., reputation system) to maintain their cooperation (Charness, Du, & Yang, 2011). Thus, the repeat interactions breed trust and trustworthiness. In a one-off interaction like this study, however, those mechanisms were hardly developed, which resulted in the low trust and trustworthiness among strangers. The "shrinking" result in this study indicated that social learning could also breed mechanisms (i.e., the transmission of reputation) to facilitate trust and trustworthiness among strangers.

The "shrinking" results indicated that organizations may self-repair from the negative influence of "bad apples". In fact, the self-repair ability of organizations had been forecasted for a long time. In 1932, physiologist Cannon (1932) had depicted one surprising observation that agents, to maintain its existence, can self-repair from the interferences of environment and the abrasion of oneself. Based on this fact, Cannon proposed the concept of homeostasis to depict the self-repair nature of agents. There is abundant evidence for this proposition. For example, after the damage of some brain regions such as Broca's speech region, an individual's speech and language can be compensated and re-acquired in the other regions (e.g., Poldrack, 2000). In Cannon's view, homeostasis is not only the nature of living agents, but also that of social systems. Others' unethical behaviors can be viewed as one form of interferences of society, with the progress of the transmission chain, society self-repaired from the bad apple effect.

Although we found that an individual's trust would self-repair from the negative effect of the third party's untrustworthiness, it is premature to affirm that real organizations can self-repair from the negative influences of bad apples. Before this affirmation, lots of questions should be answered. For example, how rapid does an organization self-repair from the negative effect of bad apples? What external factors (mechanisms) such as self-fulfillment improve or inhibit the self-repair of organizations? Studies on these questions are helpful to respond to the influence of events like Pengyu Case, as well as to facilitate the self-repair of damaged social trust.

References

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bartlett, F. C. (1932). *Remembering*. Oxford: Macmillan.

Berg, J., Dickhaut, J., & McCabe, K. (1995). Trust, reciprocity, and social history. *Games and Economic Behavior, 10*(1), 122-142.

Bicchieri, C., Xiao, E., & Muldoon, R. (2011). Trustworthiness is a social norm, but trusting is not. *Politics, Philosophy & Economics*, *10*(2), 170-187.

Boyd, R., Gintis, H., & Bowles, S. (2010) Coordinated punishment of defectors sustains cooperation and can proliferate when rare. *Science*, *328*(5978), 617-620.

Buchan, N., & Croson, R. (2004). The boundaries of trust: Own and others' actions in the US and China. *Journal of Economic Behavior & Organization, 55*(4), 485-504.

Cannon, W. B. (1932). *The wisdom of the body*. New York: Norton.

Charness, G., Du, N., & Yang, C. L. (2011). Trust and trustworthiness reputation in an investment game. *Games and Economic Behavior*, *72*(2), 361-375.

Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places. *Journal of Personality and Social Psychology*, *58*(6), 1015-1026.

Deutsch, M. (1958). Trust and suspicion. *The Journal of Conflict Resolution, 2*(4), 265-279.

Dreber, A., Ellingsen, T., Johannesson, M., & Rand, D. G. (2013). Do people care about social context? Framing effects in dictator games. *Experimental Economics*, *16*(3), 349-371.

Gino, F., Ayal, S., & Ariely, D. (2009). Contagion and differentiation in unethical behavior. *Psychological Science*, *20*(3), 393-398.

Gino, F., Gu, J., & Zhong, C. (2009). Contagion or restitution? When bad apples can motivate ethical behavior. *Journal of Experimental Social Psychology*, *45*(6), 1299-1302.

King-Casas, B., Tomlin, D., Anen, C., Camerer, C. F., Quartz, S. R., & Montague, P. R. (2005). Getting to know you: Reputation and trust in a two-person economic exchange. *Science*, *308*(5718), 78-83.

Kirby, S., Cornish, H., & Smith, K. (2008). Cumulative cultural evolution in the laboratory: An experimental approach to the origins of structure in human language. *Proceedings of the National Academy of Sciences, 105*(31), 10681-10686.

Mann, H., Garcia-Rada, X., Houser, D., & Ariely, D. (2014). Everybody else is doing it: Exploring social transmission of lying behavior. *PLoS ONE*, *9*(10), e109591.

Mazar, N., Amir, O., & Ariely, D. (2008). The dishonesty of honest people: A theory of self-concept maintenance. *Journal of Marketing Research*, *45*(6), 633-644.

McElreath, R., et al. (2005). Applying evolutionary models to the laboratory study of social learning. *Evolution and Human Behavior, 26*(6), 483-508.

Mesoudi, A. (2007). Using the methods of experimental social psychology to study cultural evolution. *Journal of Social, Evolutionary, and Cultural Psychology, 1*(2), 35-58.

Mesoudi, A., Whiten, A., & Dunbar, R. (2006). A bias for social information in human cultural transmission. *British Journal of Psychology, 97*(3), 405-423.

Poldrack, R. A. (2000). Imaging brain plasticity: Conceptual and methodological issue- a theoretical review. *Neuroimage*, *12*(1), 1-13.

Rendell, L., et al. (2010). Why copy others? Insights from the social learning strategies tournament. *Science*, *328*(5975), 208-213.

Shalvi, S., Dana, J., Handgraaf, M. J. J., & De Dreu, C. K. W. (2011). Justified ethicality: Observing desired counterfactuals modifies ethical perceptions and behavior. *Organizational Behavior and Human Decision Processes*, *115*(2), 181-190.

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, *185*(4157), 1124-1131.

Whitehead, L. A. (1983). Domino “chain reaction”. *American Journal of Physics*, *51*(2), 182.

Research on the Participation Motivations of Peasants in "Losing Land" Group Events in China at the Present Stage – Taking the "WuKan Event" of LuFeng ShanWei Guang Dong Province as an Example

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[Abstract] *This paper focuses on the motivation of participation of peasants in "losing land "group events, taking in-depth interviews of six core participants of the "Wukan Event" in LuFeng ShanWei GuangDong Province and using content analysis method to analyze the contents of the interviews to dig psychological motivations hidden behind the "losing land" group event participants. The result show there are five major categories of motivations of peasants' participation in the "losing land" group events. These categories include the appeal motivation, emotional motivation, tool rational motivation, social identity motivation, and intergroup threat motivation, and they involve economic interest demands, democratic rights demands and another 12 kinds of specific motives. Among them, the most direct cause is the peasants' demand for the land interests. The most important factor for peasants' participation in the group event is the discontent for the former village committee.*

[Keywords] *"Losing Land" group events; "Wukan Event"; motivation of participation; content analysis method*

Introduction

"Losing land" group events refer to the events in which peasants used illegal actions, such as demonstrations, petitions, and even violence to pursue land interest. In the past few years, the number of "losing land" group events in our country have gradually increased. Due to the discontent of land acquisition compensation and resettlement, some peasants have organized or participated in these activities, which have triggered different scales of mass incidents including several incidents of peasants' collective kneeling and self immolation in 2010 and famous the "Wukan Event" in Lufeng Shanwei Guangdong Province in 2011. It could have been predicted that "losing land" group events would become an important part of the mass incidents in China.

In this context, tending to take "appeal of land" as one of the motivations, exploring the specific motivations of the peasants was necessary, as well as as the premise of prevention and disposal of these such collective events. Motivation is an internal mental process or power guided by the target or object to maintain the individual activity (Peng, 2004). To study the motives of the peasants, we had to consider why they chose to participate in the group events. Previous researchers often focused on the external environment, and some scholars who focused on the analysis of individual psychological activity generally did not distinguish the various mass incidents. So there was a lack of exploration of the deeper motivations of landless peasants. For this, this paper used the "Wukan Event" as an example and dug into the psychological motivations of the peasants through in-depth interviews with the six core participants, which could be the theoretical foundation for the government in order to prevent and handle these "losing land" mass incidents.

Study Design

Interview Subjects

We interviewed six core members of the "Wukan Event". The personal backgrounds of the interviewees are shown in Table 1.

Table 1. ***The Personal Background of the Interviewees***

Number	Gender	Occupation	Age	Education
A	Male	Incumbent vice secretary	69	Unknown
B	Male	Rural Doctors	68	Unknown
C	Male	Village cadre	28	Junior high school
D	Male	Photography shop owner	21	High school
E	Female	Barber shop owner	37	Junior high school
F	Female	Unemployed	29	Junior high school

According to the "events-motivation" pattern, the researchers first asked, "Which activities have you participated in, among the Wukan Event?" On this basis, we focused on each individual event and always discussed the main issue, "Why did you participate in that event?"

Interview Data Analysis

This study used content analysis method to analyze the interview data. The content analysis method was a qualitative scientific method which can look beyond the surface through the analysis of the contents of research objects (Sun, 2008). The method included category construction, coding and the test of reliability.

Category construction. The construction catalog of content was an important part of the analysis process. It established the rules for recognition and coding (Yang, & Jia, 2011). After discussion, we identified two categories (see Table 2).

Table 2. ***Construction Catalog of Motivation***

The first level	The second level
Appeal Motivation	Appeal of economics benefits
	Appeal of democratic rights
Emotional Motivation	Disappointment with failing to petition
	Anger with the police who hit the elderly and children:
	Dissatisfaction with the misunderstanding
	Dissatisfaction with the former village committee:
	Dissatisfaction with processing ways of the government
Tool Rational Motivation	Collective effectiveness
	"Economic Man" rationality
Social Identity Motivation	Identification with the "WuKan Village"
	Resentment with the rich
Intergroup Threat Motivation	Eliminate life threats

Coding principles. When we used the content analysis method, the unit of analysis was the most important and the smallest element, and it was also the object of the actual calculation of the encoding process (Li, 2000). Textual content analysis unit included the subject, sentences, paragraphs and even full text (Yang, & Jia, 2011). In this study, we specified a sentence as a minimum unit of analysis. If a paragraph represented the same meaning, then it was counted as a unit of analysis.

From the interview data, we extracted 110 units of analysis, and each one represented one motivation. After training and pre-coding, three coders encoded respectively.

Reliability test. The higher the code consistency for the same category was, the higher the credibility of the content analysis was. Research indicated the interactive reliability, which was higher than 0.80, was an acceptable level and a good level when it was above 0.90 (Bos, & Tamai, 1999). According to relevant formulas, we calculated that the interactive reliability values of each category was all at above 0.9, some sub categories value even reached 1, which indicated that the reliability was in a better level. Accordingly, we adopted the primary coder's discrimination results as the result of this content analysis.

Result Statistics and Analysis

The 110 analysis units of encoding results are shown in Table 3:

Table 3. ***Result Statistics***

Motivation	Frequency	Ratio	Sub Motivation	Frequency	Ratio
Appeal Motivation	28	25.45%	Appeal of economics benefits	23	20.91%
			Appeal of democratic rights	5	4.55%
Emotional Motivation	52	47.27%	Disappointment with failing to petition	4	3.64%
			Anger with the police who hit the elderly and children:	7	6.36%
			Dissatisfaction with misunderstanding	5	4.55%
			Dissatisfaction with the former village committee:	27	24.55%
			Dissatisfaction with processing ways of government	9	8.18%
Tool Rational Motivation	11	10%	Collective effectiveness	7	6.36%
			"Economic Man" rationality	4	3.64%
Social Identity Motivation	13	11.82%	Identification with the "WuKan Village"	6	5.45%
			Resentment with the rich	7	6.36%
Intergroup Threat Motivation	6	5.45%	Eliminate life threats	6	5.45%

Sorting Motivation

Appeal of economics benefits. Some scholars pointed out that although some peasants performed intensely in the rural community events, which caused some bad impacts in China, the main requirements of the peasants were their economic interests, and most of them were reasonable (Mei & Shi, 2010). In the event, the first mentioned item among respondents was "the demand of the land" most of the time, "What peasants wanted was to solve the land problem" (Peasant A), "In fact, it was easiest to lead peasants. The peasants only wanted lands, so they could marry and have a son" (Peasant B).

Appeal of democratic rights. During the interviews, some respondents stressed that the demand of their democratic rights was one of the reasons for their participation in the event; these rights included, "When the village committee sold the land, we did not know at all and had no right to participate in" (Peasant D), and "I wanted to have rights of knowing and participating. I needed to know what they (former village committee) did, but actually I couldn't" (Peasant F).

Emotion Motivation

Dissatisfaction with corruption and dictatorship of the former village committee. This motivation ranked first in the sub-categories. Yu Jian Rong pointed out that corruption of some government officials

would cause serious contradictions between the government and the people. When the contradictions accumulated to a certain extent, they would easily lead to group events (Yu, 2010). In the interview process, we constantly heard peasants say words such as “dissatisfaction”, “disappointment”, “anger” and other words, to express their disgust for the former village cadres. Some of these phrases include, “We could stand that they are corrupt, but they must do something for the village” (Peasant A), “The former secretary was authoritarian and sold lands without consulting” (Peasants B), and “The election was opaque and the people who became village cadres could be wealth” (Peasant C).

Dissatisfaction with the processing ways of the government. Some respondents said the key to the deterioration of the situation was that the government used violence. A few respondents admitted even, in the later stages of the event, with pressure on the government, they became frustrated and gradually performed intensely, saying “I was very disappointed the fact government used their authority to pressure on people” (Peasants B), or “We thought we would die whatever we do, actually, we struggled against government just for rage at last” (Peasant F).

Anger with the police who hit the elderly and children. Some respondents said when they found children and the elderly were hit by policemen during the conflict, they were angry, saying, “When I came back to the village, the news that two children were killed shocked me” (Peasant C), and “Hearing two children were killed, I felt indignant” (Peasant E).

Dissatisfaction with misunderstanding. In the incident, without verification, the local government regarded the villagers as “reactionary”, which deteriorated the situation. A peasant said, “The government said we were reactionaries in TV, which made us indignant. Some old men even threw their shoes to televisions” (Peasant A).

Disappointment with failing to petition. Another important reason for the “Wukan incident" was the villagers repeatedly failed to petition. “In 2009, several students had gone to Guangzhou to petition. But the former village cadres stopped them” (Peasants D). “Failing to petition, we had to parade” (Peasant C).

Social Identity Motivation

Resentment with the rich. Facing a gap between the rich and the poor, vulnerable groups easily generated a strong sense of being deprived and were prone to some irrational behavior (Yang, & Yu, 2005). In the process of the interviews, we could clearly feel that the respondents disliked the rich. Statements included, “the people who burnt police cars were poor, so they wanted to attract attentions and changed the status” (Peasant C), and “Sometimes my family even could not afford my tuition while the kids who born in wealth family could drive cars” (Peasant D).

Identification with “WuKan Village”. Social identity theory pointed out, in a cluster environment, a member would not lose their personality, but they would regard them as the part of group and in pursuit of interest of groups (Tajfel, 1970). During the interview, we heard several respondents emphasize their village’s identity, “As a member of ‘Wukan’ village, I had the responsibility to protest our village” (Peasant B), and “At that time, ‘Patriot.1’ published messages to call on everyone to change status of Wukan, which made me excited” (Peasant D).

Tool Rationality Motivation

Collective effectiveness. “Collective effectiveness” was the belief that the members could achieve their goals more easily through groups (Bandura, 1995). Several participants also generally held this belief, “When I worked in Shunde, I saw the villagers solved the problem together, which made me felt the power

of the collective" (Peasant E), and "At this time I thought if there were more people, the problem might be solved completely" (Peasant F).

"Economic Man" rationality. The "Economic Man" rationality was that people participated in the group event and hoped to get the best results with the least cost. A few respondents mentioned that they took part in the event in order to prevent people from doing some irrational behaviors, "When some young people took some irrational behavior, I could try to stop them" (Peasant D), and "Because I was calmer and could remind people to remain rational, or it would cause worse result" (Peasant E).

Intergroup Threat Motivation

Eliminate life threats Maslow's Need Hierarchy theory shows that the security need of human is a basic need. When people are threatened, they try their best to protect themselves. In the conflict, local government used violence, which made the villagers feel their lives were being threatened. A strong feeling of panic and agitation spread among the people, "At that time we became a bit irrational and only wanted to protect our lives" (Peasant E), and "At last, the villagers just wanted to protest their own lives" (Peasant A).

Conclusion and Prospect

The results showed there were five major categories of motivations of the peasants' participation in the "losing land" group events, which included the appeal motivation, emotional motivation, tool rational motivation, social identity motivation, and intergroup threat motivation; these motivations involved economic interest demands, democratic rights demands and 12 other kinds of specific motives. Among them, the most direct cause was the peasants' demand for the land interests. The most important factor for peasants to participate in the group event was the discontent for their former village committee.

In this research, we used the content analysis method to construct the model of the peasants' motivation for participation in the group events. But the dimension of the motivation and its influencing factors should be explored further. In addition, the applicability of the motivation model still needs to be further verified. However, how to find a large number of appropriate samples is a problem which researchers need to focus on considering the specificity and sensitivity of the group events.

References

Bandura, A. (1995). Exercise of personal and collective efficacy in changing societies. In A. Bandura (Ed.), *Self-Efficacy in Changing Societies,* (pp.1-45). Cambridge, England: Cambridge University Press.

Bos, W., & Tamai, C. (1999). Content analysis in empirical social research. *International Journal of Educational Research*, (8), 659-671.

Li, B. Q. (2000). Describe the characteristics of propagation content and test the propagation hypothesis content: content analysis. *Contemporary Communication*, (1), 47-51.

Mei, X., & Shi, X. Q. (2010). The characteristics, causes and countermeasures of rural mass incidents in the new period. *Administration of China*, (6), 76-79.

Peng, D. L. (2004). *General psychology*. Beijing: Beijing Normal University Press.

Sun, R. Y. (2008). Research on network public opinion information based on content analysis method. *Information Science,* (12), 1818-1823.

Tajfel, H. (1970). Experiments in ingroup discrimination. *Scientific American*, *223*(5), 96-102.

Yang, J. P., & Jia, S. H. (2011). The reason recognition of enterprise migration – Based on the content analysis method. *Geography Science*, (1), 16-21.

Yang, R. Q., & Yu, H. D. (2005). On the causes and countermeasures of the mass incidents. *Jiangxi Social Sciences*, (10), 120.

Yu, J. R. (2010). The crux of the mass incidents was contradiction between the official and people. *China Report,* (1), 50-51.

The Influence of Epistemic Motivation on Shared Mental Model in Group Decision Making

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[Abstract] *Using a top management simulation game as the experimental task, this research explored the influence of epistemic motivation on a shared mental model and group decision making performance. The results indicated that: (1) There was no difference in group discussion duration between the high epistemic motivation group and the low epistemic motivation group; (2) The accuracy of shared mental model of the high epistemic motivation group was higher than that of the low epistemic motivation group, but there was no significant difference in the similarity of shared mental model; (3) But the mediator effect of the accuracy of the shared mental model between epistemic motivation and the group decision-making performance was not remarkable. These results demonstrate that an abundance of epistemic motivation would lead to more accurate mental models.*

[Keywords] *epistemic motivation; shared mental model; information sharing; group decision making*

Introduction

Increased technology has contributed to the complexity of many tasks performed in the workplace, making it difficult for people to complete their work independently. In response to the technological advances, many organizations have adopted a team approach to work. Teams are viewed as being more suitable for complex tasks, such as decision making. An abundance of research has been conducted on the factors that contribute to high team performance. One variable that has recently received a lot of theoretical attention is the Shared Mental Model (SMM).

A shared team mental model is defined as "knowledge structures held by members of a team that enable them to form accurate explanations and expectations for the task, and in turn, to coordinate their actions and adapt their behavior to demands of the task and other team members" (Cannon-Bowers & Salas, 2001). A shared mental model helps explain how teams are able to cope with difficult and changing task conditions (Cannon-Bowers, Salas, & Converse, 2001). In fact, researchers have suggested that the ability to adapt to a shared mental model is an important skill in high-performance teams. That is because, a shared mental model allows team members to predict the information and resource requirements of their teammates. Hence, team members are able to act on the basis of their understanding of the task demands and how these will affect their team's response. This ability enables teams in dynamic environments to be successful (Cooke, Salas, Cannon-Bowers, & Stout, 2000; Klimoski & Mohammed, 1994; Mohammed & Dumville, 2001; Yen, Fan, Sun, Hanratty, & Dumer, 2006). The scope of a shared mental model is very broad, which may involve common knowledge and beliefs, joint goals/intentions, shared team structure, and shared plans, etc. The need for team members to share common knowledge has long been recognized as an important issue for team members to be able to understand and respond to each other's behaviors.

Specifically, a shared mental model allows all team members to interpret relevant information in a similar manner, share expectations regarding future events, and develop similar explanations for situations faced by the team (Mohammed, Ferzandi, & Hamilton., 2010; Rouse, Cannon-Bowers, & Salas, 1992). Thus, they afford the capacity to synchronize behaviors and coordinate efforts.

Although a shared mental model (SMM) is an important variable has an impact on team performance, but there is a lack of theoretical development and empirical research on the mechanism of the shared mental model formation (Xie, et al., 2008). Godemann and Michelsen (2011) have pointed out that the shared reality feeds into the virtually shared mental models. According to the Theory of Shared Reality, motivation is a very important precondition played in the shared reality, which drives the achievement of common inner states (Echterhoff, Higgins, & Levine, 2009). Many lines of group research assume that shared reality in groups is motivated by epistemic motivation (Echterhoff, et al., 2009). Epistemic motivation is the willingness to develop a rich and accurate understanding of the world (De Dreu & Carnevale, 2003). That raises a critical issue – how epistemic motivation influences the occurrence of a shared mental model.

The aim of this study is to explore the influence of epistemic motivation on a shared mental model in group decision making. Then, we can figure out under what circumstances the shared mental models occur.

Objectives

The objectives of this research are to explore the mechanism of influence of epistemic motivation on a shared mental model in group decision making. We hypothesize that epistemic motivation influences the formation of a shared mental model, and has an effect on the group decision making outcomes. The hypotheses are as follows:

1. The accuracy of shared mental model of the high epistemic motivation groups was higher than that of the low epistemic motivation groups.
2. The group performance of the high epistemic motivation groups was higher than that of the low epistemic motivation groups.

Method

Experimental Design and Epistemic Motivation Manipulation

In this experiment, a between-subjects design with two conditions of epistemic motivation (high vs. low) was employed. Epistemic motivation manipulation: Participants in the high epistemic motivation condition were told that to gain more insight into the process by which groups come to reach a decision, a follow-up interview would take place. During this interview they would be asked to elaborate on the decision making process. Participants were asked to indicate, on a separate sheet of paper, when they might be available for an interview. Participants in the low epistemic motivation condition did not receive this additional instruction.

Subjects

Sixty-nine students of Zhejiang University participated as subjects. They were randomly assigned to groups of three, which were randomly assigned to experimental conditions. Groups differed in gender composition, but because this had no effect on the dependent variables, it is not discussed any further. Data of two groups was excluded from analysis for group members because of the experience of participants for group decision making. There were 10 decision making groups in the low epistemic motivation condition and 11 in the high epistemic motivation condition. None of the participants had the experience of group decision making.

Materials

The top management simulation game "TINSEL TOWN" (Devine, Habig, Martin, Bott, & Grayson, 2004) was used as the experimental task. Groups of three participants acted as the top management team of a fictional Hollywood movie studio. Each member played the role of a particular vice president from a different functional area: Marketing, Script Evaluation, and Talent Appraisal. Each individual received some shared information given to all other members, as well as some role-specific information pertinent to their functional area that no other participant received. The team's collective task was to maximize profit rate over one simulated year. Teams chose two screenplays to produce and decided on marketing levels for the two movies.

The simulation algorithms of variables in the game are as follows:

1. Movie Profit Rate (in millions) = (Movie Revenue – Movie Cost)/Movie Cost
2. Movie Cost (in millions) = Production Cost + Marketing Cost
3. Movie Revenue (in millions) = Ticket Price × Viewers
4. Viewers (in millions) = （Viewer Appeal+ Movie Quality） ×Motion Picture Association of America Rating
5. Viewer Appeal = (2×Content Appeal + Star Appeal) × Marketing Level
6. Movie Quality=2×Script Quality + 3×Director Skill +Acting Quality

Measurement

1. Manipulation check: For epistemic motivation manipulation check, we measured motivation to think systematically using three items rated on 5-point scales (1-Don't at all, to 5-Very much). ① In the upcoming group discussion I will strive for thorough and balanced decisions;② During the group discussion I will try to think deeply before reaching a judgment and ③ During group discussion making efficient decisions is more important than thinking through every possibility (reverse coded). Ratings were averaged into an index of systematic information processing.
2. Group decision making performance: During group discussion, the teams had to choose two screenplays to produce and decide on marketing levels for the two movies. So the score of the group decision making performance consisted of two parts: scores of the movies and scores of the marketing levels for the movies. According to the quality of the six movies, the scores of the six movies were 60, 50, 40, 30, 20, and 10, from high to low, respectively. According to the contribution to the movie, the scores of the four marketing levels were 40, 30, 20 and 10, from high to low, respectively. Hence, the full mark of group decision making performance was 190.
3. Decision making duration: After distribution of the task-relevant information, we began timing in minutes until the team submitted their decision.
4. Similarity/accuracy of the shared mental model: Similarity of the shared mental model reflected the extent to which team members modeled their task and performance domain the same way, whereas the accuracy of the shared mental model reflected the degree to which the mental model mirrored the "true state of the world" (Edwards, et al., 2006). Cognitive mapping was used to assess the similarity and accuracy of the shared mental model. Participants were asked to place 17 concepts in a pre-specified hierarchical structure illustrating the sequence of the decision making related activities required to accomplish their task. Examples of concepts included the following: Viewer Appeal, Movie Quality, Average Ticket Price and so on. Participants used the arrow to indicate that they perceived that a change in the originating concept affected the terminating

concept. To identify a causal relationship, the participant selected: (1) the origin concept, (2) the destination concept, and (3) the direction (positive or negative) and amount of influence (very strong: 5, strong: 4, moderate: 3, weak: 2, or slight: 1) that the original concept had on the destination concept. (See Figure 1)

5. Similarity of shared mental model: We turned each participant's cognitive map into a 17×17 matrix. Each element represented the causal relationship between two concepts, and the numerical value of each element represented the amount of influence. We calculated the overlap of the three group members' cognitive map through computing the deviation of each matrix element. And the similarity of their shared mental model of a team equaled the sum of the deviation of each matrix element. The numerical value of the similarity actually represented the divergence degree of the three members' cognitive map. The higher the numerical value, the lower the similarity of their shared mental model.
6. Accuracy of shared mental model: We calculated the accuracy of their shared mental model by comparing the member's cognitive map to the expert's cognitive map. We calculated the overlap of each member's cognitive map with the expert's cognitive map by computing the deviation of each member's cognitive map and the expert's cognitive map. Accuracy of the shared mental model of a team equaled the sum of the deviation of each matrix element. The numerical value of the accuracy actually represented the divergence degree of the team's cognitive map from the expert's cognitive map. (There were norms of accuracy of experts' assessment). The higher the numerical value, the lower the accuracy of shared mental model. (See Fig. 1)

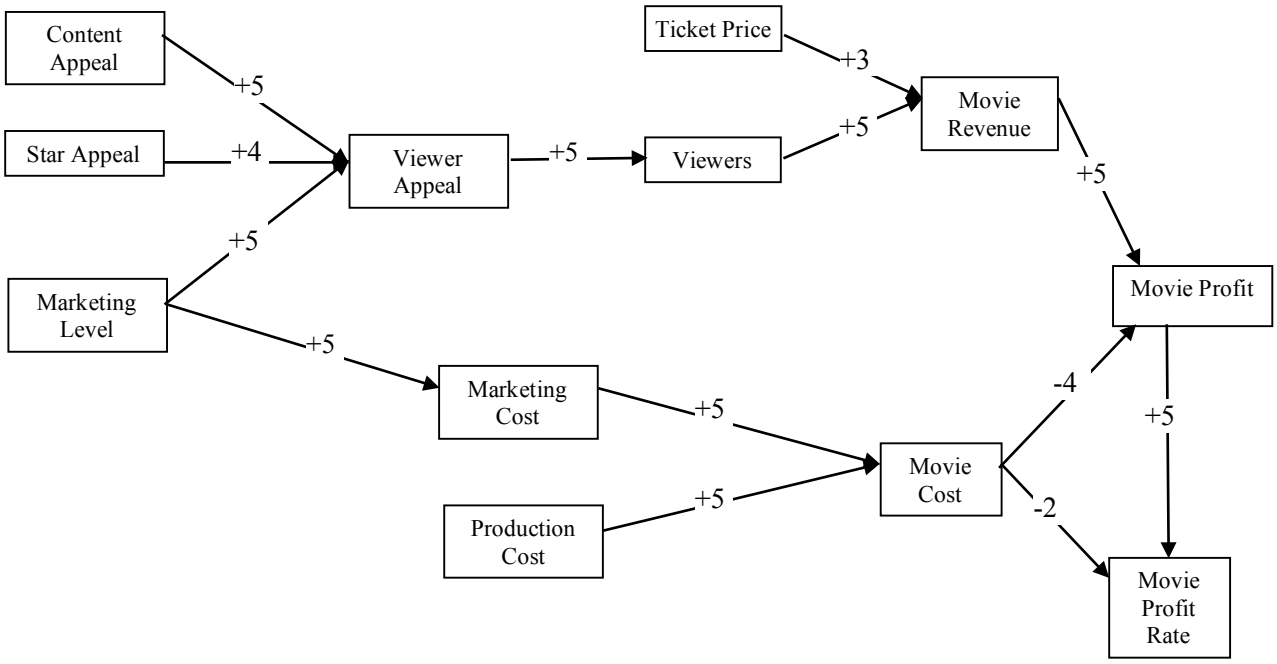

Figure 1. **The Expert's Cognitive Map of the Experimental Task**

Procedure

After participants came to the lab, they were randomly assigned to groups of three, which were randomly assigned to experimental conditions. The three members sat together to complete the group decision making task. The roles of the group discussion were randomly assigned to each participant. After a brief explanation

of the experimental procedure, epistemic motivation was manipulated as described above. Then the experimenter distributed folders with task-related information to each participant. Participants had 5 min. to study the information in the folders. During the whole experiment, participants could not exchange folders. After the study phase, participants began discussion until they reached a consensus. Then participants drew cognitive maps independently.

Results

Manipulation Check

Cronbach alpha of motivation to think systematically scale was 0.622, (As there were only 3 items used to measure the motivation to think systematically, the Cronbach's alpha was on the low side. But the motivation to think systematically scale has been used in lots of studies for epistemic motivation manipulation check, so the results were reliable.). The results of the t-test showed that, the index of systematic information processing of the high epistemic motivation groups (M=11.364, SD=1.454) was significantly higher than that of the low epistemic motivation groups (M=10.567, SD=1.331), t=-2.263, p=0.027<0.05. So the manipulation of epistemic motivation succeeds.

Effect of Epistemic Motivation on Discussion Duration and Group Decision Making Performance

The difference of the examination indicated that there was no difference between the two experimental conditions on discussion duration. The difference of examination indicated that the group performance of the high epistemic motivation groups was higher than that of the low epistemic motivation groups, see Table 1.

Effect of Epistemic Motivation on the Shared Mental Model

The difference of examination indicated that the accuracy of the shared mental model of the high epistemic motivation groups was higher than that of the low epistemic motivation groups, but there was no significant difference in the similarity of the shared mental model, see Table 1.

Table 1. ***The Difference of Examination for Dependent Variables***

	Low Epistemic Motivation Groups (*n=10*)	**High Epistemic Motivation Groups *(n=11)***	***t***	***p***
Discussion duration	25.189±14.872	23.508±15.221	0.250	0.806
Group decision making performance	156.000±19.555	171.818±13.280	-2.188	0.041
Similarity of shared mental model	0.343±0.102	0.310±0.106	0.717	0.482
Accuracy of shared mental model	1.180±0.077	1.060±0.136	2.467	0.023

Correlations Between Variables

Table 2 presents the descriptive statistics of the variables and the correlations among them. The results show statistically significant relations between epistemic motivation, accuracy of shared mental model and group performance. There was a statistically significant relation between the similarity of the shared mental model and the accuracy of the shared mental model. But there were no significant relations between the accuracy of the shared mental model and group performance.

Table 2. ***Means, Standard Deviations and Correlations of the Variables*** *(n=21)*

Variables	*M*	*SD*	*1*	*2*	*3*	*4*	*5*
1. Epistemic Motivation	(category variable)		1				
2. Discussion Duration	24.348	14.672	-0.059	1			
3. Similarity of Shared Mental Model	0.326	0.102	-0.162	-0.288	1		
4. Accuracy of Shared Mental Model	1.117	0.126	-0.493*	-0.098	0.497*	1	
5. Group Decision Making Performance	164.286	18.048	0.449*	-0.117	-0.447*	-0.356	1

*Note: *means p<0.05, **means p<0.01, ***means p<0.001; high epistemic motivation condition was coded as 1, while low epistemic motivation condition was coded as 0.*

Mediation Analyses

Following the procedures described by Wen Zhonglin and Zhang Lei (2004), whether or not the accuracy of the shared mental model mediates the relation between epistemic motivation and group decision making performance was analyzed. As shown in Table 3, epistemic motivation was significantly correlated with group decision making performance in Model 2, β=0.449, p<0.005. Next, epistemic motivation was significantly related to the mediator (accuracy of shared mental model) in Model 1, β=-0.493, p<0.005. Epistemic motivation was not significantly correlated with group decision making performance after involving the mediator (accuracy of the shared mental model) in Model 3, β=0.361, p>0.005. But the regression equation of Model 3 was also not significant. We did the Sobel test, Z=0.716, p>0.05. Thus, the mediator effect of the accuracy of the shared mental model between epistemic motivation and the group decision-making performance was not remarkable.

Table 3. ***Tests of Accuracy of the Shared Mental Model as a Mediator Between Epistemic Motivation and Group Decision Making Performance***

Independent Variables	Accuracy of Shared Mental Model	Group Decision Making Performance	
	Model 1	*Model 2*	*Model 3*
Direct effect Epistemic motivation	-0.493*	0.449*	0.361
Mediation effect Accuracy of shared mental model			-0.178
Overall F	6.087*	4.786*	2.617
Overall R^2	0.243	0.201	0.225

Note: *means p<0.05, **means p<0.01, ***means p<0.001.

Discussion

The results indicated that the accuracy of the shared mental model of the high epistemic motivation group was higher than that of the low epistemic motivation group, but there was no significant difference in the similarity of the shared mental model. Randall and colleagues studied a situation in which teams had to adapt their strategy during a city-management simulation. Through a video message, a team leader gave an instruction about the different strategies that could be used and did (in the sense-giving condition) or did not (in the control condition) give the rationale for each strategy (Randall, et al., 2011). The authors argued that this external sense-giving would raise epistemic motivation and therefore, would lead to more similar and accurate mental models. These results are consistent with our study. In sum, epistemic motivation is important for the development of the shared mental models.

The mediator effect of the accuracy of the shared mental model between epistemic motivation and the group decision-making performance was not remarkable. That is because there were no significant relations between the shared mental model accuracy and group performance. The task was less easy to find out the best movie, as the best movie was better than the other movies in every aspect. In future research, we consider to change the experiment task into a similar but more difficult one to determine the relationship between shared mental model accuracy and group decision-making performance.

Conclusion and Implication

According to the results of the experiments, our conclusions are as follows:

The accuracy of the shared mental model of the high epistemic motivation group was higher than that of the low epistemic motivation group, but there was no significant difference in the similarity of the shared mental model. But the mediator effect of the accuracy of shared mental model between epistemic motivation and the group decision-making performance was not remarkable.

So based on the finding of "much epistemic motivation would lead to more accurate mental models", one strategy of group decision making is to raise members' epistemic motivation. For example, external sense-giving may be provided for members so as to prime their epistemic motivation. Sense-giving is enacted when information and environmental cues are identified and placed into a framework that influences how people interpret meaning and form cue-response contingencies (Bartunek, Krim, Necochea, & Humphries, 1999; Dunford & Jones, 2000; Weick, 1995; Zaccaro, et al., 2001). By placing information and stimuli into a common framework (Weick, 1995), external sense-giving provides a source of epistemic motivation, facilitating the formation of similar and accurate structured knowledge.

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References

Bartunek, J., Krim, R., Necochea, R., & Humphries, M. (1999). Sensemaking, sensegiving, and leadership in strategic organizational development. In J. Wagner (Ed.), *Advances in Qualitative Organizational Research,* (Vol. 2, pp. 36-71). Greenwich, CT: JAI Press.

Cannon-Bowers, J. A., Salas, E., & Converse, S. (2001). Shared mental models in expert team decision making. *Individual and Group Decision Making*, 221-246.

Cannon-Bowers, J. A., & Salas, E. (2001). Reflections on shared cognition. *Journal of Organizational Behavior, 22*(2), 195-202.

Cooke, N. J., Salas, E., Cannon-Bowers, J. A., & Stout, R. J. (2000). Measuring team knowledge. *Human Factors: The Journal of the Human Factors and Ergonomics Society, 42*(1), 151-173.

De Dreu, C. K. W., & Carnevale, P. J. D. (2003). Motivational bases for information processing and strategic choice in conflict and negotiation. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology,* (Vol. 35, pp. 235-291). New York, NY: Academic Press.

Devine, D. J., Habig, J. K., Martin, K. E., Bott, J. P., & Grayson, A. L. (2004). Tinsel town: A top management simulation involving distributed expertise. *Simulation & Gaming, 35*(1), 94-134.

Dunford, R., & Jones, D. (2000). Narrative in strategic change. *Human Relations, 53*, 1207-1226.

Echterhoff, G., Higgins, E. T., & Levine, J. M. (2009). Shared reality experiencing commonality with others' inner states about the world. *Perspectives on Psychological Science, 4*(5), 496-521.

Edwards, B. D., Day, E. A., Arthur, W., & Bell, S. (2006). Relationships among team ability composition, team mental models, and team performance. *Journal of Applied Psychology*, *91*, 727-736.

Godemann, J., & Michelsen, G. (2011). *Sustainability communication: Interdisciplinary perspectives and theoretical Foundation*. New York, NY: Springer.

Klimoski, R., & Mohammed, S. (1994). Team mental model: Construct or metaphor? *Journal of Management, 20*(2), 403-437.

Kuhl, J. (1978). Standard setting and risk preference: An elaboration of the theory of achievement motivation and an empirical test. *Psychological review, 85*(3), 239-248.

Mohammed, S., & Dumville, B. C. (2001). Team mental models in a team knowledge framework: Expanding theory and measurement across disciplinary boundaries. *Journal of Organizational Behavior, 22*(2), 89-106.

Mohammed, S., Ferzandi, L., & Hamilton, K. (2010). Metaphor no more: A 15-year review of the team mental model construct. *Journal of Management*, 36, 876-910.

Randall, K. R., Resick, C. J., & DeChurch, L. A. (2011). Building team adaptive capacity: The roles of sensegiving and team composition. *Journal of Applied Psychology, 96*(3), 525.

Rouse, W. B., Cannon-Bowers, J. A., & Salas, E. (1992). The role of mental models in team performance in complex systems. *IEEE Transactions on Systems, Man, & Cybernetics, 22*, 1296-1308.

Weick, K. E. (1995). *Sensemaking in organizations.* Thousand Oaks, CA: Sage.

Yen, J., Fan, X., Sun, S., Hanratty, T., & Dumer, J. (2006). Agents with shared mental models for enhancing team decision makings. *Decision Support Systems, 41*(3), 634-653.

Zaccaro, S. J., Rittman, A. L., & Marks, M. A. (2001). Team leadership. *The Leadership Quarterly*, *12*, 451-483.

Wen, Z., Chang, L., Hau, K., & Liu, H. (2004). Testing and application of the mediating effects. *Acta Psychologica Sinica, 36*(5), 614-620.

Xie, X., Wang, Z., & Xin, L. (2008). An investigation of antecedents of shared mental models: From a group composition perspective. *Chinese Journal of Applied Psychology, 13*(2), 174-180.

Trust in the Government among a Representative Sample of Chinese Respondents

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[Abstract] *Chinese people, in an environment of Marxism, are supposed to maintain loyalty to the government. In this article, we analyze individuals' trust in government. Using data from the 2010 Chinese General Social Survey, we find that education is significantly negatively associated with trust in government. Our analysis suggests that education policies aimed at promoting trust in government have largely failed; or rather, the Chinese intellectual elite report lower trust in the government than the average Chinese respondent. Individuals with the internet as their major news source have significantly lower trust in government while other factors controlled.*

[Keywords] *trust; government; education*

Introduction

Chinese people, in an environment of many kinds of government propaganda, are supposed to maintain trust in the government, especially in the group who accepted more patriotism education. Yet little research has analyzed trust in government with national survey data. This article investigates the sociological context of trust in government in China. We used data from the 2010 Chinese General Social Survey (CGSS, National Survey Research Center 2015). We composed one principle factor indicating trust in government, used factor analysis, and we examined how it related to education, gender, Party membership, and *hukou* (age) and use of the Internet. Our analysis suggests that education policies aimed at promoting trust in government have largely failed.

What Impacts Trust in Government?

Many factors are associated with trust in government. In general, satisfaction with democracy and the work of the government in handling income inequality, fiscal conditions and corruption are associated with trust in government (Weinschenk, & Helpap, 2015). Trust in government is also influenced by demographic factors such as age, education, income, and occupation (Schoon, et al., 2010). Regarding the quality of democracy, prior research suggests that by providing an e-government service, the government can win trust from the public in that an e-government service implies transaction, transparency, and interactivity, which are important aspects the public values in assessing the government (Bannister, & Connolly 2011).

However, there is no consistent finding on the effect of either demographic characteristics or media on trust in the government. According to the Asia Barometer Survey of 2003, 2004, and 2006, the frequency of reading online political news is negatively related to the trust in government, while education has no significant effect. Similarly, researchers have found that citizens who use government websites tend to be critical and demanding citizens, who are generally less likely to express high trust in government (Welch, Hinnant, & Moon 2005). In contrast, Moy and Scheufele (2000) examined how the usage of media would

influence the trust in government and trust in other people. Their research found that media seemed to affect social trust, but not trust in government. Specifically, reading newspapers and watching television entertainment content enhanced social trust, while watching television news undermined trust in others. This discussions leads to our concern of studying trust in government in China.

Data and Methods

Our data source was the Chinese General Social Survey (CGSS). Data for the present project were collected in 2010 and followed a multi-stage stratified sampling design. There were 3 sampling stages: Primary sampling units (PSU) were county-level units, and there were 2762 PSUs in the sampling frame. Secondary sampling units (SSU) were community-level units (villages '*cun'* and neighborhood committees '*juwei hui'*), and in each selected SSU, 25 households were sampled via the Probability Proportional to Size (PPS) method. Then in each selected household, an adult, aged at least 18, was sampled with a Kish grid. The total 2010 sample size was 12,000. The CGSS was intended to systematically monitor the changing relationship between social structure and quality of life in both urban and rural China. The CGSS2010 is the most recently released data set. Table 1 presents the summary statistics for all individuals.

Dependent Variable

We used factor analysis to get factor scores from a series of items asking about trust in others and in institutions in the questionnaire, and used them as our dependent variable. The question was worded, "*How much do you trust people listed below (family members, relatives, friends, colleagues, leaders/cadres, businessmen, classmates, fellows- villagers,* and *religious believers)? Give a score, from 1 to 5 (1=completely distrust, 5=completely trust).*" The question about trust in institutions was "*How much do you trust the institutions listed below? Give a score, from 1 to 5 (1=completely distrust, 5=completely trust)"* and respondents were given options such as: *Court/Judicial system, Central government, local government, Army, the department of public security, Central media, local media, civil organizations, companies/enterprises, National People's Congress, religious organizations, schools* and *education system*.

We obtained the index for both trust in government and in religion through Principal Component Analysis (PCA), a method that can capture the underlying factor among a group of items. We used the "trust in government" index as the dependent variable for the regression models in Table 3.

Table 1. ***Factor Analysis of Trust Index***

Trust Index	Component			
	1	*2*	*3*	*4*
Family Members	.251	.432	-.261	.150
Relatives	.279	.707	.013	.175
Friends	.189	.789	.210	.148
Colleagues	.228	.781	.356	.101
Leaders/Cadres	.387	.564	.569	.076
Businessmen	.145	.457	.591	.153
Classmates	.180	.709	.308	.127
Fellows - Villagers	.278	.695	.369	.125
Religious Believers	-.054	.196	.196	.866
Court/Judicial System	.739	.234	.381	.032
Central Government	**.810**	.214	.115	-.011
Local Government	**.663**	.286	.502	.128
Army	**.771**	.231	.099	.010
Public Security	**.778**	.248	.421	.040
Central media	**.773**	.229	.302	.022
Local media	**.677**	.246	.567	.108
Civil Organizations	.321	.228	.671	.354
Companies/Enterprises	.357	.277	.712	.195
National People's Congress	**.788**	.218	.123	-.010
Religious Organizations	.072	.117	.283	.887
Schools and Education System	**.635**	.255	.275	-.010

Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization.
Total Variance Explained: 58%. KMO and Bartlett's Test:0.89(P<0.01)

Independent Variables

According to previous studies, demographic factors such as news source, education, gender, place of residence, as well as income, all will influence trust in government (Hakhverdian, & Mayne, 2012). Gender and residence registration (*hukou*)[1] were dummy coded (1=male; 1=rural residents). Because income is highly skewed, we obtained the natural log of income. News source was coded as a dummy variable (1=internet) to denote whether people claimed the internet as their major news source, as opposed to television or other sources. We also included age and coded it as a categorical variable, with generation, according to the year of birth: 80s and later, 70s, 60s, 50s, and 40s. Education was treated as an ordinal variable with the following response options: 1 = "primary school", 2 = "middle school", 3 = "high school (including technical senior school and vocational school)", 4 = "junior college", 5 = "university degree", and 6 = "graduate school". Also, "no official education" was coded as 1 because this indicated the lowest level of education. Party membership was coded as a dummy variable, where 1=CCP member.

[1] Rather than using the place of residence as a predictor, we used one of the most common demographic characteristics unique in China, *hukou*, residence registration. There are two types: urban or rural.

Results

Descriptive Statistics

Table 2. ***Descriptive Statistics***

	No.	%
The Communist Party Member(Y/N)		
Non CCP member	10,306.00	87.6
CCP Member	1,461.00	12.4
Education		
Primary School or Below	4,240.00	36
Middle School	3,452.00	29.3
High School	2,263.00	19.2
Senior college	933	7.9
University degree	790	6.7
Graduate school	90	0.8
Age Group (Date of Birth)		
1940s	2,524.00	21.4
1950s	2,314.00	19.6
1960s	2,696.00	22.9
1970s	2,331.00	19.8
1980s/90s	1,918.00	16.3
Hukou (Residence Registration)		
Urban	7,222.00	61.3
Rural	4,561.00	38.7
Gender		
Male	5,677.00	48.2
Female	6,106.00	51.8
Primary News Resource		
TV/Newspaper/Other	10,222.00	86.8
Internet	1,561.00	13.2
Total	11,783.00	100

Variable	Obs	Mean	Std. Dev.	Min	Max
Trust in government	10537	8.77E-17	1	-5.217037	1.608411
Trust in religion	10537	5.28E-17	1	-3.140953	2.89078
Logged income	10271	10.07279	1.051407	5.247024	15.60727

Trust in Government

Table 3 presents the results from the first series of ordinary least squares regression models predicting trust in government.

Table 3. ***Trust in Government***

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Constant	0.307***	0.298***	1.198***	1.221***	0.842***	0.785***
	(0.017)	(0.017)	(0.106)	(0.107)	(0.112)	(0.112)
Education (ref: primary school)						
Middle school	-0.274***	-0.279***	-0.232***	-0.191***	-0.139***	-0.143***
	(0.025)	(0.025)	(0.025)	(0.026)	(0.027)	(0.027)
High school	-0.440***	-0.463***	-0.386***	-0.343***	-0.241***	-0.225***
	(0.028)	(0.028)	(0.030)	(0.031)	(0.032)	(0.032)
Senior college	-0.567***	-0.624***	-0.505***	-0.435***	-0.307***	-0.247***
	(0.039)	(0.040)	(0.043)	(0.044)	(0.045)	(0.046)
University degree	-0.768***	-0.837***	-0.688***	-0.603***	-0.479***	-0.393***
	(0.043)	(0.045)	(0.048)	(0.050)	(0.051)	(0.053)
Graduate school	-1.101***	-1.201***	-1.019***	-0.903***	-0.780***	-0.659***
	(0.114)	(0.114)	(0.116)	(0.117)	(0.117)	(0.118)
1= Party member		0.190***	0.201***	0.153***	0.151***	0.143***
		(0.031)	(0.031)	(0.032)	(0.032)	(0.032)
Logged Income			-0.094***	-0.089***	-0.064***	-0.057***
			(0.011)	(0.011)	(0.011)	(0.011)
Birth decade (ref: 1940s)						
1950s				-0.080*	-0.103**	-0.100**
				(0.032)	(0.032)	(0.032)
1960s				-0.077*	-0.117***	-0.111***
				(0.031)	(0.031)	(0.031)
1970s				-0.161***	-0.199***	-0.173***
				(0.033)	(0.033)	(0.033)
1980/1990s				-0.206***	-0.255***	-0.191***
				(0.037)	(0.037)	(0.038)
Hukou: 1=rural, 0=urban					0.252***	0.242***
					(0.023)	(0.023)
1 = female					0.000	(0.010)
					(0.020)	(0.020)
News Source: 1=Internet, 0 = Others						-0.234***
						(0.036)
F	117.259	104.173	100.537	67.796	67.091	65.610
p	0.000	0.000	0.000	0.000	0.000	0.000
N	9178	9178	9178	9178	9178	9178

Model 1, a model which contains only one predictor, education, shows that education is significantly negatively related to trust in government, that is, the higher level of education, the lower trust in government ($p<0.01$). Party membership (Table 3, Model 2), is positively significantly related to trust in government. Yet, it does not affect the negative relationship between education and trust in government. Household income (Table 3, Model 3), is negatively associated with trust in government. In this model, adding in income does not influence the effects of other predictors. In Models 4, 5 and 6, we controlled for demographic factors, namely, age, gender, and *hukou* (rural or urban area). Generation is related with trust in government. On average, older generations tend to trust the government more while younger generations trusts less. Rural citizens trust the government more than urban citizens do. Gender is not significantly related to trust in government after controlling for the other predictors in the model. Influences of education, Party membership and income remain significant in the full model. In Model 6, individuals with internet as

their major news source have significantly lower trust in government compared with others who obtain news from various other sources such as television, radio, and newspapers, net of other predictors.

Conclusion

Education fosters trust in religion but does not improve trust in government. The finding is surprising considering the fact that all domestic students in China, from primary school through graduate school, take compulsory classes designed to instill an appreciation for the Chinese party/state - love the Party and the country (*aidangaiguo*). However, our analysis suggests that the compulsory classes do not guarantee positive attitudes toward the government. Rather, the more highly educated respondents, comparatively, tend to distrust the government. This finding is even more surprising in light of previous research which shows that education, in general, is positively related to political trust in other countries (Schoon, et al., 2010; Hooghe, Dassonneville, & Marien, 2015).

In light of the growing popularity of the internet and online news in China, we studied its influence on trust. Compared with traditional media, the internet serves as an alternative channel of obtaining and sharing information. Although China maintains tight control and regulation over the internet by using strategies such as keyword filtering and site blocking, it is difficult to control all information online in the official discourse. Relying on the internet to obtain information is significantly negatively related to trust in government. Our analysis suggests that such an increase in the number of netizens, individuals who rely on internet to obtain information, will lead to some substantial change in the trust in government.

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References

Bannister, F., & Connolly, R. (2011). Trust and transformational government: A proposed framework for research. *Government Information Quarterly, 28*(2), 137-147.

Hakhverdian, A& Mayne, Q. (2012). Institutional trust, education, and corruption: A micro-macro interactive approach. *The Journal of Politics, 74*(3), 739-750. The University of Chicago Press on behalf of the Southern Political Science Association.

Hooghe, M., Dassonneville, R., & Marien, S. (2015). The impact of education on the development of political trust: Results from a five-year panel study among late adolescents and young adults in Belgium. *Political Studies, 63*(1), 123-141.

Moy, P., & Scheufele, D. A. (2000). Media effects on political and social trust. *Journalism & Mass Communication Quarterly, 77*(4), 744-759.

National Survey Research Center. (2015). The Chinese general social survey database. Retrieved September 20, 2015, from http://www.chinagss.org/index.php?r=index/index&hl=en.

Schoon, I., Cheng, H., Gale, C. R., Batty, G. D., & Deary, I. J. (2010). Social status, cognitive ability, and educational attainment as predictors of liberal social attitudes and political trust." *Intelligence, 38*(1), 144-150.

Weinschenk, A. C., & Helpap, D. J. (2015). Political trust in the American states. *State and Local Government Review, 47*(1), 26-34.

Welch, E. W., Hinnant, C. C., & Moon, M. J. (2005). Linking citizen satisfaction with e-government and trust in government. *Journal of Public Administration Research and Theory, 15*(3), 371-391.

Empirical Study on Incentive Education Strategies for College Students in Social Transition Period

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[Abstract] *The purpose of this study is to explore the influence of incentive education on college students, including different strategies and their effects. It is shown that achievement motivation produces the best effect, while moral education motivation's effect is the worst; the lower classes (the first and second year in college) bring better effect than that of the higher classes (the third and forth year in college). Furthermore, this study finds out that in carrying out incentive education there is no apparent difference either between males and females, or between liberal arts students and students majoring in science and engineering.*

[Keywords] *social transition; incentive education; college students; empirical study*

Introduction

Our country is currently in a special period of economic and social transition. In the wake of drastic reform in our economic system, there has been dramatic transformation in social structure and profound alteration in interest setup, various ideas and thoughts have collided and integrated with each other, thus exerting a deep influence on college students' values, moral outlooks, concepts of interest and views of careers. As a result, ideological and political education in colleges and universities is faced with newly emerged situations and challenges (Wu, 2010). With years of development, researches and studies concerning the pertinence and substantial results of college ideological and political education have been fruitful: continuous improvement has been achieved in mechanism and practical results, and college ideological and political education is on track with orderly progress and system perfection. However, there are still some weak points – delayed reaction of moral education to social reform, limited pertinence and effectiveness, denial of the students' individuality, narrow-minds, a lack of moral education method, and lagging feedback of moral education on moral development. Research and exploring the above question has become an important question for study or discussion in colleges and universities (Zhang, 2011). Concerning the characteristics and functions of motivation, it is the growth requirement for college students and an internal demand for a new development of ideological and political education to discuss motivation and the application and effectiveness of incentive education. This research used the students of Zhejiang Shuren University as the research objects, and carried out an empirical study on incentive education, exploring more efficient incentive education strategies in order to yield more actual results of such education.

College incentive education is one of the key factors in incentive strategy. In order to further research the effects of college incentive strategy, the authors have conducted expert interviews, student talks, looked through related literature, and concluded seven major strategies of college incentive education, namely, educational motivation, achievement motivation, role model motivation, goal motivation, emotional motivation, self motivation, and frustration motivation. To be more exact, educational motivation means to motivate college students through the main channel of moral education, to inspire their enthusiasm by

ideological and political teaching and practical training; achievement motivation means using the current achievement or the pursuit of a sense of accomplishment and honor to waken the college students' enthusiasm in study and work; role model motivation means to guide and educate college students with prominent, typical and positive people or cases; goal motivation means the students endeavor to realize their dreams by establishing goals with the guidance of teachers; emotional motivation means to incite college students with sincere emotions such as affirmation, encouragement and care coming from relatives, friends and teachers; self motivation means to encourage and cheer oneself using scientific approaches based on self acknowledgement; frustration motivation means guiding the students to properly deal with setbacks and difficulties, including finding out causes correctly and determining the direction of future efforts (Chen, 2013).

From 2013 onwards, the College of Jiayang Academy in Zhejiang Shuren University started incentive education, and chose two parallel freshman classes (30 students each) to conduct a pilot experiment. Upon enrollment, the overall scores of the college entrance examinations and English scores of the two classes were basically the same. However, one year later, the academic record and learning atmosphere of the experimental class were significantly higher than the control class and the rate of attendance of the experimental class was also higher. In addition, considering the actual learning performance, the scholarship rate for the experimental class was 56.7%, while the control class was only 33.3%. Ninety percent (90%) of the students of the experimental class passed CET-4, compared to only 73.3% of the control class. This lays a solid foundation for conducting college student incentive education in a large scale.

Literature review

In China, the word "incent/motivate" (激励) carries a long history. In early literature, both of the two Chinese characters for the word "motivate" bear the meaning of "to stimulate" and "to advise". In modern times, it conveys more of inspiration and encouragement. For example, in the *Modern Chinese Dictionary* (1996 edition), "motivate" is defined as "to inspire and encourage"; while the *Cihai* (1980) interprets it as "stimulate so as to raise someone's spirits". In foreign languages, "motivate" comes from the Latin word "movere", which means to provide a motive or cause for action, or in other words, to guide and induct. Since the 20th Century, with the development of psychology, management science and behavioral science, western scholars have been paying increasing attention to this core issue of motivation, and through a serious of researches, they have put forward several motivation theories, thus gradually forming a complete western motivation theory system. Motivation, as a psychological term, refers to the psychological process that continues to motivate people. Through motivation, the targeted person will be kept in an excited state under the influence of an internal or external stimulus (Koontz, & O'Donnell, 1982). In management behavior science, motivation refers to inspiring one's mind, offering incentives, and exploring one's potential, in order to fill the person with intrinsic vitality and motivation and work towards the desired or expected goal (Zhou, 1989). Motivation means to incite and guide one's behavior so as to fulfill one's intrinsic potential and drive the person to make efforts to reach a goal. This is the process that is often mentioned as to kindle and develop enthusiasm (Sun, 1990).

In the 1980s, domestic research on "motivation" was introduced to the education field from the field of enterprise management. From the 1990s onwards, research on "incentive education" was carried out. Currently, the ideological and political incentive method is consistent with that of psychology and management science. China's systematic study on incentive education started in the 1980s, and so far, many

scholars have explored its definition, among which, some of the representative quotes are: "incentive education is to fire the enthusiasm of people" (Zhang, & Chen, 2001); "Incentive education is to incite people continuously, and build their enthusiasm thus to improve efficiency of behavior" (Zu, 2004). Combining psychology and education, it is believed that "incentive education is to summon up the subjective motivation of people, and encourage people to work towards a proper goal" (Zheng, 1999).

College education needs motivation, which can internalize the external stimulates into individual incentives and need, thus changing the behavior mode, and turning the negative, passive, and blind behavior into a positive, active, and conscious one, bringing students' enthusiasm, initiative and creativity into play, in order to maintain a good attitude and an eager desire, striving to forge ahead (Wu, 1999).

Research Method

Subjects

This research took 300 students from Zhejiang Shuren University as the research objects; 300 copies of questionnaires were sent out, and 276 of those returned were effective, an effective rate of 92%. The questionnaire sample included 135 male students and 141 females, among which 49.3% are freshmen, 16.3% sophomores, 10.1% juniors, and 24.3% seniors. Freshmen and sophomores are regarded as a lower class group, while junior and seniors belong to a higher class group; students of liberal arts counted for 45.7%, compared with 54.3% for science and engineering students.

Search Procedure

This research mainly adopted the interview method and questionnaire method. The authors carried out in-depth interviews and follow-up surveys with 60 college students in succession, and independently created a "questionnaire on Chinese college students incentive strategies" (Chen, 2013). In this questionnaire, incentive education was categorized into seven dimensions: educational motivation, achievement motivation, role model motivation, goal motivation, emotional motivation, self motivation and frustration motivation. It is proved that this questionnaire had high reliability and validity. SPSS17.0 was used to process and analyze the collected data.

This research supposes that:

- Incentive education can enhance the effect of ideological and political education;
- The effects of incentive vary from one incentive education strategy to another;
- The incentive result on lower class students in college is more obvious than on higher class students.

Research Result

Questionnaire Reliability and Validity Test

This research tested the validity of the questionnaire; the detailed test results of exploratory factor analysis are as follows:

Test results of exploratory factor analysis.

Table 1. ***Factor Structure of the Incentive Education Scale*** *(n=276)*

Item	Educational motivation	Achievement motivation	Role-model motivation	Goal motivation	Emotional motivation	Self motivation	Frustration motivation
Q1	0.425						
Q4	0.599						
Q14	0.446						
Q28	0.595						
Q38	0.406						
Q40	0.616						
Q11		0.487					
Q12		0.562					
Q29		0.562					
Q45		0.667					
Q47		0.420					
Q3			0.385				
Q22			0.642				
Q34			0.737				
Q36			0.497				
Q37			0.381				
Q48			0.646				
Q49			0.749				
Q5				0.599			
Q10				0.435			
Q15				0.605			
Q18				0.494			
Q21				0.492			
Q27				0.443			
Q31				0.368			
Q39				0.733			
Q41				0.388			
Q44				0.447			
Q2					0.665		
Q9					0.565		
Q17					0.375		
Q19					0.693		
Q20					0.684		
Q32					0.459		
Q6						0.504	
Q7						0.502	
Q8						0.518	
Q13						0.530	
Q16						0.566	
Q23						0.412	
Q25						0.381	
Q33						0.575	
Q42						0.468	
Q46						0.410	
Q24							0.430
Q26							0.574
Q30							0.717
Q35							0.648
Q43							0.422
Q50							0.524
Eigenvalue	5.795	4.041	4.013	3.829	3.446	2.970	1.929
% of Variance	11.590	8.083	8.026	7.659	6.892	5.940	3.858
Cumulative %	11.590	19.672	27.699	35.358	42.250	48.189	52.048

Table 2. ***Cronbach's Alpha of the Incentive Education Scale*** *(n=276)*

Component	Educational motivation	Achievement motivation	Role model motivation	Goal motivation	Emotional motivation	Self motivation	Frustration motivation	Total questionnaire
Item numbers	6	5	7	10	6	10	6	50
Cronbach's Alpha	0.772	0.706	0.829	0.788	0.753	0.824	0.803	0.956

From Table 1, seven dimensions can explain altogether the 52.05% of the variance of the questionnaire, and for most of the items, the load on the belonging dimension is greater than 0.4, while bearing very little load on other dimensions – this means that the questionnaire has a fair factor structure. From Table 2, each dimension's validity and KMO coefficient are quite ideal.

Test result of variance analysis.

Table 3. ***ANOVA***

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18396.040	1	18396.040	18.113	.000
Within Groups	278283.536	274	1015.633		
Total	296679.576	275			

From Table 3, the average total score of the lower class group is 181.10, while that of the higher class group is 163.92. In addition, the homogeneity test of variance indicates that the two groups of data homogeneity are tenable; there is significant difference in the total scores between the two groups, specifically, the average total score of the lower class group is obviously higher than that of the higher class group.

Meanwhile, in order to further explore the difference of motivation source between the lower class group and the higher class group, we carried out an independent sample T test for the total scores of each incentive dimension respectively.

The "independent sample test" demonstrates that there are significant differences between the lower class group and higher class group in each dimension, which indicates that each type of the stimulus received by the higher class group is much smaller than that of the lower class ones. This also proves the supposition that the incentive result on the lower class students is more obvious than that on the higher class students. Furthermore, data analysis also shows that there is no specialty effect or gender effect in motivation.

A comparison of different dimensions in college student incentive education strategy. According to the existing samples, the average value of the data was calculated using SPSS 17.0 and Excel 2003 (see Table 4). From the overall average value, the incentive method with the best effect is achievement motivation, next is emotional motivation, goal motivation, self motivation, frustration motivation, role model motivation, while the educational motivation ranks last. This fully verifies the supposition that different incentive strategies have different effects on college students.

Table 4. ***Ranking of Incentive Effects in Each Dimension***

Name	N	Average value	Question number	Question average value	Rank
Educational	276	19.420	6	3.237	7
Achievement	276	18.768	5	3.754	1
Role model	276	23.315	7	3.331	6
Goal	276	35.612	10	3.561	3
Emotional	276	21.732	6	3.622	2
Self	276	35.601	10	3.560	4
Frustration	276	20.736	6	3.456	5

Conclusion

Incentive education must be carried out from grade one to grade four. If it is stopped halfway, the overall effect will be severely affected. Moreover, in implementing incentive education, the educator must focus on strategies with better effects such as achievement motivation and emotional motivation, as a means to influence and drive other incentive strategies. Additionally, for the strategies that bring about only marginal effect, such as role model motivation and educational motivation, some improvement and optimization is needed in order to enhance the overall incentive effect.

Limitations and Future Research

The samples selected by this research are limited to only one comprehensive university of Zhejiang, which is a great limitation in the size and regional distribution of the sample. Meanwhile, it lacks solid theoretical support. Future research should further increase the size and scope of the samples. On the basis of the prophase questionnaire survey, the authors should extend the research into the relations between each motivation dimension and the college students' self-efficacy, psychological resilience and moral sense.

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References

Chen, L., & Ma, J. (2013). Preliminary preparation for the questionnaire on college students' motivation education from the perspective of moral education – Based on a survey of five universities in Hangzhou. *Proceedings of the International Conference on Public Human Resource Management and Innovation*, The American Scholars Press, 128-133.

Cihai. (1980). Shanghai: Shanghai Lexicographical Publishing House, p. 993.

Koontz, H., & O'Donnell, C. (1982). *Management science,* (p. 650). Guizhou: People's Publishing Press.

Modern Chinese Dictionary. (1998). Beijing: The Commercial Press, p. 588.

Pritchard, R., & Ashwood, E. (2008). *Managing motivation*. New York: Taylor & Francis Group.

Wu, C. M. (2010). On college students' ideological and political education in social transitional period. *Heihe Journal*, 143.

Wu, C. X. (1999). *Higher education psychology,* (pp. 47-48). Beijing: Higher Education Press.

Zhang, W. (2011). Influencing factors on college ideological and political education in social transitional period. *School Party Construction and Ideological Education*, 89.

Zhang, Y. C., & Chen, W. B. (2001). *Principles of ideological and political education*, (p. 4). Beijing: Higher Education Press.

Zhen, Y. T. (1999). *Methodology of ideological and political education*, (p. 149). Beijing: Higher Education Press.

Zhou, C. G. (1989). *Introduction to managemental behavior*, (p. 221). Hubei: Hubei People's Press.

Zu, J. H. (2004). *Ideological and political education method course*, (p. 245). Beijing: Peking University Press.

The Research on the Mental Health Science Popularization, Based on Citizens' Happy Life in China's Social Transformation Period

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[Abstract] *In the transition phase of accelerating development of the economy and society, people's living conditions have generally improved, and material wealth has become more and more common, while it also has become an indisputable fact that more and more people feel psychological poverty, mental distress and unhappiness. Psychological health is an indispensable prerequisite for a person having a happy life, so if we want to improve people's living conditions, we must strengthen the science popularization work of psychological health as follows: cultivate a talent team of science popularization combined with full-time and part time talents, design a group of effective methods and paths, and construct a series of assessment and feedback systems which can guide the future development of science popularization work.*

[Keywords] *psychological; health; science popularization; promotion; happy life; transformation phase*

Introduction

PST and the Well Being of Lives

The sustainable development and advancement of the economic society in the end needs to depend on national quality, while scientific literacy is one of the most important aspects of it. It matters too much to the significant development of the economic society and the comprehensive construction of a harmonious society to promote national quality through strengthening the citizens' popularization of science and technology (hereafter referred to as PST). The Communist Party and the country have paid high attention to the development of PST, drawing up a couple of laws in succession like *The Popularization of Science and Technology Law of PRC*, *The Outline of National Scheme for Scientific Literacy,* and *The Outline of the Talent Development for Science Popularization of China Association for Science and Technology* and continuously issuing a series of matched policies and regulations to propel PST's development. In recent years, the various parties, all walks of life, and all sectors of society have made tremendous contributions to the PST, which has accelerated the integral lifting of national quality to some extent. However, the scientific popularization business of our nation still has a distance to meet the requirements of the Party and the People, and some harmful trends have appeared in the course of PST. For example, PST's content greatly values natural science and practical technological science rather than social science knowledge, life science knowledge and composite science knowledge, and as to the foothold of the PST, it puts more weight on the effects and the development of the economy and the materials rather than the enjoyment and advancement of peoples' happy lives.

The explicit target of the PST lies in the lifting of the national quality, economic development and social progress, but its deep hidden target is to offer a happy life for people, because a healthy and perfect development of scientific literacy is a necessity to have a better living for everyone and economic society's development should ease people's happy life not their material aspect. It is just a form of science

popularization to help and encourage citizens to learn the science, to understand it and to use it, and its goal is to improve people's living conditions and promote the index of happy life.

A Key Factor of Happy Lives

There are various reasons to influence people's happy lives, and the satisfaction of basic material living conditions is undoubtedly an indispensable influencing factor. And yet, under the rapid development of PST, along with the continuous promotion of citizens' scientific qualities, the improvement of the national economic level and the unceasing enrichment of material wealth, what more people feel is added life pressure and sorrowfulness instead of the happiness of their lives, which obviously shows the certain degree of dislocation and upside-down phenomenon between PST and its goal. If we want to find out the real reasons for this, people must walk out the traditional definition of happy life – the screen of theory of material happiness: money and materials are not the only determined factors of a happy life, which depends a lot on a person's spiritual world and mental health state. Mental health is the key factor of a happy life.

Some people are rich materially, but mentally painful with no feeling of life's happiness; while others are poor materially, but satisfied mentally while enjoying the happiness of life. Why do different people have different views of happiness while living in the same environments and world? It is mainly due to their different individual psychological health states – a psychologically healthy person can see things rationally and face things positively, while a psychologically unhealthy person will often distort facts and be pessimistic about life. In order to make the science popularization business return to its original track of offering service to citizens' happy lives by scientific and technological popularization, PST has the necessity to involve the popularization of mental health knowledge and skills into its content to promote the lifting of mental quality and to perfect the structure of national scientific quality. Psychology is a inter-discipline of natural science and social science, and mental health belongs to applied range of psychology; a sane person always has a sound spirit quality, otherwise, he will also reflect the defects of his mental quality, because "the psychological quality and mental health are closely related" (Zhang, 2003, p. 145). Based on this, it is no doubt that the scientific popularization business, which treats the scientific and technological popularization and national scientific quality improvement as its own mission, has the obligation to enhance the method popularization of mental health knowledge from the perspective of the content of scientific knowledge. However, this is just the blank page of current scientific popularization business, which can't timely make up for the loss of citizens' necessary knowledge of mental health and psychological self-help skills.

Mental Health STP

In order to implement mental health scientific popularization, and let the citizens pay more attention to their mental health states, to form a sound psychological quality, to see the world with a rational sight, always keep a positive mood, and enjoy the happiness and nicety of life, no matter in prosperity or adversity, whether rich or poor, the urgent thing is to strictly obey the following three articles.

Establish a Talent Team

If the PST, as a systematic engineering with all people's participation and benefits, wants a comprehensive and sustainable development, benefitting all people faithfully, it must incorporate mental health scientific popularization into its whole system and grasp it firmly and well. The key is to to

establish a science popularization talent team of mental health combined with full-time and part-time talents.

Put the talent construction of psychological health science popularization into the systematic plan of science popularization talent team. The development of PST demands PST talent. Our country highly values the construction of a talent team (of scientific popularization), and the China Association for Science and Technology has made up *The Development Outline of Science Popularization Talents of China Association for Science and Technology (2010-2020)* in accordance with the overall planning of *The Outline of National Medium-Long Term Talent Development (2010-2020)*; the outline has given a clear analysis of the PST talent development's principles, goals and implementing contents. The talent team construction of mental health science popularization, which is an integral part of the whole PST talent team construction project, must abide by the outline's general spirit, and in the construction process, we must take full consideration of the talent team's structure and strengthen the construction by regarding the psychological health talent team as an indispensable part the entire PST talent team. At first, we need to cultivate and forge a team of compound science popularization talents. In the target range of PST talent team construction stipulated in the outline, we must forge a processional and part of the compound PST talent team with the knowledge and skills required by the the mental health service who can process the conventional scientific popularization work, as well as be qualified for the psychological health PST work and have the abilities to serve the science popularization business of the urban and rural communities, and companies.

At the same time, cultivate a professional team of mental health popular science talents. Psychological health service is a very professional job, so the compound talents only having basic mental health knowledge and skills, still cannot meet the needs of the special requirements of mental health science popularization undertakings, because the action object of the mental health scientific knowledge and skills is human, while the action objects of other sciences are inanimate things. For this, it is necessary to build a talent team with high level of specialization within the target range as stipulated in the outline. With the special requirements of mental health popular science, establish a professional access system in the team construction cause, and inspect the quasi-hired personnel's professional background, work experience, occupational ethic and so on. Meanwhile, build a dynamic regulatory mechanism in the premises of a relatively stable team where the workers can walk in an out freely, and make sure of the professional level and demonstration role of the specified talent team for mental health.

Integrate human resources and establish an internet-share type of science popularization talent team for mental health. The popular science of mental health, as a cause of the whole nation, is a huge systematic engineering, which matters to the citizens' healthy and happy lives. It has a high requirement of the talents' quality, as well as the quantity. In the rigid situation of the shortage of the science popularization talents, especially professional ones, we must make the best use of the limited resources' qualities. In the face of the national condition of a vast territory but tremendous population, it is a wise move to fully use the internet-share function of the general and professional team and assure they can promote the science popularization undertakings' development of mental health, as well as improve their business level during the share cause. On one hand, the municipal people's government of the government of the provinces (municipalities directly under the central government) shall generally and systematically consider and plan the mental health science talent team construction for the jurisdiction and issue corresponding policies to support the professional scholars in the mental health field who are serving the PST undertakings. They can choose the time at their will to contract the urban and rural

communities, and the companies and carry out the activities flexibly to popularize the scientific knowledge of mental health, and similarly the urban communities, the rural areas and the companies also can contract the professional talent team of mental health popular science at their will. On the other hand, under the provincial and municipal government, establish a responsibility system of the science popularization talent team construction for mental health in the districts and counties who will try their best to mine the local professional talent resources in mental health, especially to cooperate with the teachers of mental health education and teaching and help them to play their advantages to the fullest. Establish a science popularization talent pool of mental health by provinces, and the districts and counties should carry out stock management of the mental health science popularization talent team and they can mutually regulate and support each other and share the resources.

Build an incentive mechanism to fully play the motility of science popularization talent team of mental health. Build an incentive mechanism to fully play the talent team's initiative, motility and creativity, and continuously strength its hematologists function, as well as increase the team's science popularization power. For those psychology experts and scholars who have taken part in the scientific activities of mental health in their spare time from organizations, schools, hospitals and enterprises, they have priority in the promotion for professional and technical posts, wage levels and the selection of the most outstanding and advanced under the same conditions, therefore encouraging them to make more contributions for the scientific undertakings on the premise of doing well at their job. For those full-time staff of science popularization, they have the right to conduct the PST activities independently in responsible areas, and the principals in theses areas like the residential committee director, rural proprietor, or business entity should support and assist the scientific activities unconditionally and help them to play up their motility and creativity. They should have the right to report their supporting and cooperating endeavors to the superior government and administrative departments of the dutied areas which will be included in their performance evaluations as an important point.

Moreover, it is also very important for the governments and the administrative departments of scientific undertakings to create conditions to promote talent team's entire quality further, so as to provide fee support of accepted training, establishment of a mechanism of promoting self learning, and holding comprehensive quality tests of mental health science talents, and so on.

Develop a Group of Feasible Methods

In order to strengthen mental health science and promote happy lives for the people, it is not only needed to cultivate a sophisticated science talent team of mental health, but also needed to establish a set of feasible methods of mental health science popularization.

Give Full Play to the Spread of Modern Information Technology on Mental Health Knowledge and Skill

There will be some restrictions of the coverage or frequency on the national mental health science popularization by just relying on the traditional means for a country like China, which is large and populous. In order to ensure more citizens can bathe in the sunshine of mental health science popularization, grasping the common sense of mental health and the prevention methods and techniques of mental illness, and strengthening mental health consciousness, it must give full play to the advantages of the modern information technology which treats network multimedia as the kernel. "The Internet as an

information communication channels, it has the character of openness, freedom, equality, universality and directness, etc." (Zhao, 2012).

The first step is to set up a network school for mental health science. The teachers can teach lessons through online videos within a prescribed time, or put video teaching resources and other related learning information about mental health on the network, and then the full-time and part-time scientific talents in the belonging districts and counties who have gained authority to attend this school can log into the internet to learn the lessons through online videos and choose their learning time on the internet freely.

The second step is to give full play to cable TV's platforms advantage and open a popular science channel on mental health. Though cable TV doesn't have a high coverage range like the Internet, it has entered innumerable homes with the ceaseless improvement of people's living conditions, and whether urban or rural, they almost all possess the condition of watching TVs. The opening of a popular science channel of mental health on the counties' TV or a popular science column in the relevant channels, can help the general family's popularization of mental health knowledge and skills, as well as promote family harmony.

The application of information technology in mental health PST is very widespread. "In terms of health science dissemination, online consultation, expert online interview is also a common form of instant messaging" (Li, Tian, Hu, Li & Chai, 2013). PST web site's function should not be neglected, for "websites' role in the healthy growth of teenagers cannot be underestimated, teenagers is the main group of popular science website audience" (Zhang, 2009).

Play the Demonstrating and Leading Role of Psychology Experts of the University Scientific Research Institutes

The University Scientific Research Institutes have comprehensive subjects, a gathering of human resources of psychology, and have strong psychological experts team. Human resources should be absorbed into the team of popularization of sciences as much as possible regarding mental health jobs. In addition, the popularization of jobs of mental health also play the role of improving the mental health of citizens. On the one hand, the University Scientific Research Institutes actively guide the psychology experts to strengthen research in mental health in order to support scientific and practical content, which not only further attaches importance to strengthen studies on children' mental health, but also the studies of the young, the middle-aged, the old, different sectors, and all levels of personnel including the majority of villagers. On the other hand, it plays the role of psychological experts in front of the students, fosters the students' leading group of having a strong sense of responsibilities and excellent professional knowledge of psychology. By the role of each student, we push forward the Science Popularization and prepare for successors for mental health science popularization conditions. In fact, a large number of scholars made an important contribution to the PST career of mental health, such as Zhang Dajun, Ma Xin and Hong Zhaoguang, and other. For example, Hong Zhaoguang on popular science propaganda has repeatedly said, "the psychological balance is the main measures of health care" (Hong, 2012, p. 7), and advanced ideas to promote people's mental health, life happiness have had a very good publicity effect.

Play the Gathering Advantages of Radiation Role of Enterprise Community and Rural School Personnel

Urban communities and rural areas are important areas for mental health science popularization jobs, which is dependent by our national condition. The advantage of cluster decides that its personnel in unit

time accepts more mental health science popularization, which helps to strengthen the radiation of jobs and improves its quality and efficiency. So we should grasp its content, style and opportunity. In terms of mental health, we should strengthen mental health content wherever the applicability and pertinence, according to residents and workers' awareness of health in different urban communities and rural areas, as well as their existing knowledge of culture and mental health factors. The young farmers of rural areas, especially poverty-stricken areas, are an important object of popular science and science strength. "Young farmers in poor regions accounted for 71% of its total population; the mental health status can not be ignored" (Ye, & Yu, 2002). If becoming the mental health's group, they have conditions of playing the role of radiation.

Secondly, in the way of mental health science popularization, we should select the correct way of fully considering its education, cognitive features, accepting capacity and concept consciousness and so on. For example, for enterprise workers, it is appropriate to have a relative close education, with a general integrated quality. In the way of popularization, they can use large lectures and organize activities for watching videos as some general ways of popularization. For rural villagers with a relative lower education, the method of intuitive images and showings should be taken.

Thirdly, in time of mental health science popularization, in addition to seizing opportunities to enhance the routine of quality and benefits, it is important to use some unconventional key times. For example, holding activities in the relatively isolated rural areas grasps the golden opportunity of migrant workers returning home to strengthen mental health popularization, which can have a multiplier effect.

A Set of Evaluation Feedback Mechanisms

Mental health popularization is a lasting benefit of systems engineering for all people, so we must establish an effective evaluation feedback mechanism leading the development of cause of mental health science popularization.

Establish a Working Inventory System in Order to Strengthen the Examine and Evaluation of Mental Health Popularization Activities

In order to strengthen the examination and evaluation of mental health science popularization activities, we should combine the results of the assessment and evaluation process, and at the same time, strengthen the organization and implementation of mental health science popularization work for the entire appraisal process. In particular, it is beneficial to implement mental health popularization work units with individuals that can make realistic, objective and fair overall evaluations.

Mental health science popularization work is to universally promote good mental health and mental qualities, and learning and working happily, as well as enjoying life. But other technical aspects of natural science knowledge popularization should allow people to grasp these natural sciences technology used in industrial and agricultural production, and improve economic growth and productivity in order to improve people's lives. Clearly, mental health science popularization work has its own particularity. Its ultimate role of the object is a person, and the particularity and complexity of people decides the appreciation of the work on mental health science popularization, so we can not just look at the results instead of attaching a process of assessment evaluation. Evaluation of mental health can not be like other tangible items and just quantified. It should be measured by indirect means, especially some of the hidden developments that are not reflected. So the work on the mental health science popularization appraisal process should focus on the link through the process of assessment traction to facilitate this work. In order

to play the role of the assessment process, the establishment of the work list system is regarded as a wise method. Before the start of mental health science work each year, the work is to be itemized in a chronological list of every complete area to be identified. The task list is mainly to maximize the reliability and validity of the assessment process based on the appraisal process.

Establish the Evaluation Feedback and Strengthen the Development of Mental Health Popularization Assessment Work

The examine and appreciation of mental health popularization work, on the one hand, is to provide a basis of accuracy for the mental health popularization in order to have a clear "reward". The most important is to promote the popularization personnel to detect problems, correct shortcomings, promote mental health popularization work and continuously improve quality and efficiency. So the group of entire appreciation must form a closed loop in order to be the start evaluation of the mental health popularization assessment. The feedback link will finally act on the results of the appraisal mental health popularization personnel (units), which is its ultimate and goal. The feedback process can reflect the development of the evaluation concept, so we should use the vision of development to treat the mental health science popularization staff, attaching to their performance based on pointing out typical problems of their work and referring to the direction of development. This will help them have an objective and comprehensive review and constantly improve the advantages and enhance their faith and determination in improving the cause of advancing of mental health science popularization. To achieve this effect, in addition to timely feedback, the manner of the feedback should be paid attention to: universal problems can be solved by centralized feedback of conferences; individual problems require direct personal feedback; problems for a relatively high degree of social concern should be reflected publicly in order to let the community know and supervise personnel.

Establish Performance for Life and Strengthen Examination Result Management of Mental Health Popularization

Mental health science popularization is a long-term work. Inevitably there is a nexus between the front and various stages of science popularization work. In order to facilitate the work of the entire mental health science popularization to sustain and develop in a stable way, it is necessary to strengthen the evaluation result management of the mental health science popularization job and the establishment of the performance for life. An important basis for making outstanding contributions to popularization work in a mental health comrade, if due to work or other normal circumstances, the comrade leaves the science popularization system, then its performance and contribution to the promotion is still the future wages, or job promotion. A non-anomalous situation of the enjoyment is an effective treatment for life. In order to lead more comrades to care and support mental health science popularization work, it is necessary to gather more power to treat work as a mental health popularization science systematic project, rather than leaving empty and with some fragments, and benefit thousands of families for mental health popularization work; it is necessary to support a healthy, happy life for people.

Meanwhile, it should keep up with time for the establishment of performance for life, with good mental health science popularization work evaluation results and management that is results-based. It is basic work to play the role of the appraisal results, so we must pay close attention to it.

Conclusion

It is a long road to enhance the mental health science popularization and promote the happiness of people. It involves changing the concept of science popularization from the past emphasis on inanimate material aspects of science and technology popularization of knowledge to the people-centered aspect of improving the quality of people for the mental health of scientific knowledge and skills universal life standard of regression transformation. With the changes in the concept of science popularization, the team structure construction, science content selection, and the setting up of an appraisal system have changed. So we must incorporate mental health science popularization to a top-level design system to draw a comprehensive picture of the ongoing plan and to develop this picture of practical implementation. With the mental health science popularization work progressing and accelerating the pace of construction of two civilizations, the entire business of science popularization will develop healthy and constantly, as well as serve a happy life for people.

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References

Hong, Z. G. (2012). Psychological health gone along with me. Retrieved from http://wenku.baidu.com/link?url=XfqdAhlmBRCUVQwxI4mR6t1hG45zmDqwFXQrkCozy5cGGpipQ-PWxRuDQar0bpQ2cGQUodqaK82PTWezOygfBE6QMhujPNaZs4TzrJ7mC.

Li, L., Tian, F. H., Tang, Q., Hu, J. F., Li, Y. B., & Chai, Y. (2013). Investigation on new media used in health popular science communication. *Chinese Journal of Health Education*, *29*(2), 188-189.

Ye, J. H., & Yu, L. (2002). Ways to improve mental health of young farmers in poor areas. *The Journal of Guangxi Social Science*, (4), 235-236.

Zhang, D. J. (2003). On man's mental quality. *Studies of Psychology and Behavior*, *1*(2), 143-146.

Zhang, G. L. (2009). A brief analysis of the effects on the growth of the teenagers of the science popularization websites. *Theoretical Circle*, (09), 189-190.

Zhao, H. Z. (2012). Some thoughts on the new media as popular science network. *Science Popularization*, *7*(1), 38-44.

Discussions on Psychological Problems of Teachers in Education Informationization under China's Social Transformation

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[Abstract] *Both social transformation and information technology promote deep reform in education development. The implementation of education informationization under the traditional education management environment could inevitably cause impact to teachers on their psychological activities or conduct. This paper provides discussions on the four major psychological problems teachers may have to face, namely, low application intention, self-identity crisis, confused interpersonal communication and cooperation, and emotional role imbalance, which may not only bring negative results to the teachers' behavior, but also hinder the education informationization from rapid development. Therefore, the adjustment of psychological problems for all the teachers should be emphasized for the purpose of enhancing their initiatives on education reform through various targeted measures.*

[Keywords] *social transformation; education informationization; teachers; psychological problem*

Introduction

The transformation society and information society have become two macro backgrounds of China's education development. The contemporary Chinese society is undergoing a rapid transformation from traditional to modern. As the social structure and function profoundly changes, information technology with computer multimedia technology and network communication technology as its core has penetrated into all aspects of human life, and brought tremendous change. In the education field, the process of pushing forward education reform and development with in-depth use of modern information technology will inevitably lead to a new form of education-informatization education. In the past twenty years, government departments, politicians or educators have been, or are, aware of the great role of information technology in promoting school teaching and learning, and incorporating information technology into the national education development strategy, education system and curriculum planning (UNESCO, 2012). As the Chinese government promulgated the *Guidelines on National Mid-term and Long-term Education Reform & Development Planning (2010-2020),* and the *Ten Year Planning of Education Informatization (2011-2020)*, etc., education informatization will become the strategic choice and powerful leverage for China's overall education system reform and innovative development in the next ten years. China's education is experiencing an unprecedented spring of informatization, and such educational trends such as the flip classroom, MOOC, micro-class and intelligence education have emerged.

Education informationization is the characteristic of education transformation, which is an important part of social transformation. It not only promotes the overall development of education, but also significantly affects the individual of education. Teachers are such individuals who are both users and learners of the informatization means and the bearer of this information revolution. However, in the course of development, people pay more attention to the use of information technology and mastering the teaching method, while neglecting the teachers' spiritual growth and self-identity, or even being fooled by

information technology. Under the social transformation, the teachers present many new features, and their changes in social psychology are more significant. With respect to cognitive psychology, in informatization education, the cognitive problems of teachers as individuals (psychological factors i.e.: attitude, emotion, motivation and self-confidence) become more prominent (Zhang, Wu, Chang, Wang, & Ni, 2015). In fact, China's education informatization application environment is weak, and mainly reflected in the low development level of non-technical factors in informatization competitiveness; such factors as government vision planning, people's application attitude and social culture atmosphere have become a great impetus for evolution of modern knowledge society (Yu, Zhang, & Zhu, 2009). If these aspects are not focused upon and improved, they will become an obstacle for enhancing the competitiveness of China's education informatization. The main purpose of this study is to explore the differences between informatization education and traditional education under China's Social Transformation, as well as the influences on teacher's psychology and behavior. What are the teachers' psychological difficulties, and how do these psychological factors negatively affect education informatization? The next sections will explain in further detail.

Low Intention of Application

The information society puts increasingly higher demands on school education; with the continuous deepening of education reform, the ability of information technology application has become an essential professional ability for teachers. However, to implement informatization in the deep-rooted traditional education environment, the pressure from the information society environment and the legitimacy of information reform from the administrative powers cannot simply replace teachers' initiative to become involved in informatization. Therefore, teachers face eminent contradictions: on one hand, concern about their work being largely replaced by various multimedia resources, courseware and teaching websites, and on the other hand, hope to share their achievements of informatization education as quickly as possible, to show immediate and obvious education effects, and to emancipate work to improve teaching efficacy and effect. According to the research report, in the process of information technology and curriculum integration, teachers must experience four stages: struggle–master–influence–innovate (Mandinach & Cline, 1992). Currently in China, teachers' information technology application is still at the early stage of application. The vast majority of teachers (74%) are at the early stage of learning, understanding, familiarizing and exploring the process, a few teachers have reached a higher level of adjustment and innovation application, and very few teachers are still at the stage of perception, basically without information technology (Lin, & Huang, 2013).

In contrast to the high expectations, teachers' intention of application is low, generally reflected on their resistance of informatization education. The resistance is divided into recessive resistance and dominant resistance. Recessive resistance mainly represents psychological non-recognition of emotion and attitude, and dominant resistance mainly represents rejection of language and behavior (Li, 2012). In-depth analysis of resistance reveals the following reasons:

First, considering a number of research results on teaching psychology and learning psychology under the traditional teaching environment, when teachers use existing knowledge in class, they feel great confidence and a strong sense of self-efficacy, however, they have insufficient experience to teach under informatization environment. This teaching method is not mature, and is without an effective teaching

method system to support this environment, so even if there was an information technology environment, the problem of how to teach often bothers teachers.

Second, the teachers' information quality is inadequate. Because China's education informatization started late, most teachers have acquired the ability of information technology through short-term intensive training, and they passively attend it. Plus, some trainings are a mere formality, with little effect, teachers lack self-confidence in the practical application process.

Third, the teachers' application cost is huge. With the reform and innovation in the process of education informatization, teachers have to devote more energy and time which increases their workload and pressure, and they may resist the reform behavior.

In summary, such factors as teachers' expectations, attitude and self-confidence for education informatization affect their intentions for information technology application, which is different from the effect of material technology input. The teachers' education informatization will be a longer process. In order to reduce their psychology of resistance and change their mentality, teachers should be encouraged to participate in education reform and be a part of the decision-making activity to fully understand the philosophy of education reform, fully mobilize their initiative, and generate the momentum of reform from bottom to top.

Self-Identity Crisis

Kevin Ryan believes four main attitudes affect teachers' behavior. The first is self-identity. A teacher's self-identity refers to the process in which teachers constantly reflect on their teacher career, with deep questioning, understanding and positioning of their occupational life and development, to ultimately seek self-value in their career (Zhou, 2009). In other words, teachers' self-reflection in their education practice is to answer the questions, "What kind of teacher am I?" and "What kind of teacher will I become?".

Under the influence of traditional education philosophy, the teacher still performs the role and image as a knowledge deliverer, accustomed to a fixed teaching mode, but the rapid development of the Internet brings a new education environment for students to easily acquire the previously inaccessible knowledge; a lot of knowledge is no longer open to teachers alone. Secondly, mobile learning with the use of personal electronic devices through social and content interaction is also transforming people's way of learning. Students may study without restriction of time or space, and have more autonomy in the arrangement of their study plans. Therefore, in the informatization environment, a teacher's authority in traditional social education is continuously disappearing, and the sense of identity is constantly blurring. The teacher is no longer the master of class, the feeder of knowledge, but the organizer, mentor, and facilitator, etc., which is probably inconsistent with their recognition of their role. Meanwhile, compared with the teaching mode under traditional technology, informatization education puts higher requirements on the teachers' abilities, so that they face more occupational pressure. The change of the overall teaching mode and teacher-student position is no longer just a change in the way of teacher profession, but exerts a certain impact on the teacher's educational view and self-identity, and even leads to the teacher's suspicion about their own ability. When teachers find it difficult to transfer their role with high expectation, as well as limited support and time, they will live in fear, lose their self-identity, and fall deeper.

Since teachers with self-identity crises cannot feel safety per se in their career, they tend to develop a mentality of discomfort or resistance, and suffer severe problems of extremity, and health, etc. in terms of emotion, behavior and body. On the contrary, if the teacher has a stronger sense of recognition on the profession and higher psychological level, the individual will dedicate to this profession in a more active,

positive and pleasant attitude, accepting new things well, eliminating pressures and contradictions, and feel a strong sense of belonging in the teacher career and value for self-achievement. In the process of constructing self-identity, teacher's responsibilities should be aroused, including education responsibility, legal responsibility and moral responsibility, etc., to develop and enrich them through their reflection, dialogue, research and practice on educational life, demonstrate their value, and improve their living conditions on the context of informatization.

Confusion of Interpersonal Communication and Cooperation

Modern society has changed the way of communication between teachers. Generally speaking, in the school environment, teachers, as the center of an interpersonal relationship network, need to smoothly interact and communicate with colleagues, leaders, students and parents. With the development of information technology, network breaks through the traditional outlook on time and space, makes information resources easy to share, activities are easy to organize and interpersonal cooperation is easy to realize. Learning activities through cooperation has become the direction of the current education development. In the cooperative environment, teachers should bear the skill of interpersonal relationship coordination, manifested in two aspects:

First, in terms of cooperative study with students, informatization has transferred the role of teacher in three aspects, from the authority type to democratic type, from separation to cooperation, or from dependence to equality (Li, & Liao, 2006). In the communication relations between teachers and students, teachers should play more of a role as the students' friends, partners and learning cooperators to greatly increase the time, space and frequency of communication between teachers and students. To master the new skill of such communication is especially critical.

Secondly, in terms of cooperative development with team members, modern information technology brings the discipline and inter-disciplinary connection closer. When teachers use network technology for teaching design or online course development, it cannot be achieved by relying on a single person's power, but needs communication and cooperation with other teachers, research experts and technicians. As a result, under the information technology environment, the teacher has to gradually become a coordinator, good at communication, to facilitate project implementation.

These changes need teachers to master certain interpersonal communication skills and perfect interpersonal support groups. However, nowadays, some teachers are not good at handling complicated interpersonal relationships, and fail to get along well with their students, colleagues and leaders. According to a survey, young college teachers show significantly higher interpersonal sensitivity than that of the national level, with characteristics of insensitivity, stubbornness, being suspicious and other unhealthy mentalities. Some teachers may also lack passion for communication, and pay more attention to transcending themselves, but have less self-improvement through external communication, and some teachers have a weak consciousness of cooperation, and think that communicating and sharing knowledge with each other may diminish the organizational value for the individual (Chen, 2010). In short, confronting communication and cooperation in informatization education, teachers have a lot of psychological vacillation; on one hand, it is caused by their lack of communication skills, and on the other hand, protection of their knowledge value leads to difficult communication and cooperation among teachers. Therefore, teachers should consciously improve their interpersonal communication intelligence, form a teacher learning and working community, create a cooperative and sharing atmosphere, and promote education informatization.

Emotional Role Imbalance

Emotion is a human's attitude and experience on objective things to meet their demands. Teacher's emotion has important educational value. Teacher's emotional labor includes emotional awareness, emotional management and emotional expression, etc., and the interaction between the elements constitutes the mechanism of emotional labor. In education informatization, teacher's emotional role imbalance is manifested in the following aspects: first, in the process of information teaching and learning, due to the involvement of modern educational media (computers, visual presenters, DVDs, video recorders, & projectors), intimate emotional communication of eye-contact between teachers and students in the traditional classroom becomes less. Secondly, as the flip classroom, MOOC and other online learning are a kind of virtual environment, the student's learning process and the teacher's teaching process are separated. When the teachers are making teaching materials, they face a human-computer working mode, and must assume a group of students sitting in front, which is different from emotional communication between teachers and students in the actual teaching scenario. Third, with the rapid popularity of the mobile Internet, smart mobile, tablets and other mobile devices that have become easier to carry, wearable mobile network devices support interaction with the virtual environment. With multi-dimensional integration of classroom learning, venue learning and onsite learning, this new learning mode adds uncertainty to the teachers' lives, and greatly shocks the teachers' emotional attitudes. We find that because of the "object-oriented" phenomenon existing in education informatization, people often see the object instead of the emotion; the coldness and stiffness in digital life makes an interpersonal relationship more detached and emotion displaced.

The teacher's emotional role imbalance is not only related to teaching mode transformation at the technical level, but also intertwined with the problem of education concept, policy, and system on the context of social transformation. It is determined by social circumstances and the emotional interaction mode based on it, including utilitarian learning objectives, quantitative assessment-driven teacher survival and competition, and control-oriented school management, so that it is difficult for teachers and students, and teachers and administrators to achieve ideal emotional exchange, and thus, fall into the dire straits of emotional imbalance. If a teacher's emotional imbalance is not diverted, negative emotions will continue to accumulate, resulting in emotional breakdown and depletion, and indifference will become the teacher's emotional appearance in educational activities (Li, 2015).

Education is a special communication activity among people, a process of interpersonal interaction covering emotion and rationality of teachers and students, so the teacher's education work is not only technical and cognitive activity, but in essence, it is a kind of emotional labor as well. Emotion has dual characteristic of being positive or negative, and to highlight emotional factor in education will play a positive role in the effect (Lu, 1993). Therefore, on the context of education informatization under social transformation, we should focus on the influence and role of emotional factors on the development of education, show more concern to teacher's emotional problems, follow emotional rules, enhance the power of emotional labor, reverse the pattern of knowledge better than emotion, and create education environment with profound emotions in practice.

Conclusion

Education transformation is an inevitable trend for China's education development to keep abreast with the world, whereas the teacher is the bridge linking teaching theory and teaching practice, as well as the key to education transformation. The analysis in this article helps us clearly understand the main

psychological problems of teachers in education informatization, the causes and the negative impact on education informatization. In our opinion, the problems of a teacher's low intention of application in education informatization, even psychological resistance, self-identity crisis, cooperation and communication confusion and emotional role imbalance is restricted by subjective and objective factors, including subjectively, teacher's idea, cognition and emotion affect their passion for informatization; objectively, the difference of teacher's information quality and traditional education policy and system hinder the process of teacher informatization. If these psychological problems are not focused on or resolved, they will lead to the teacher's mental crisis. Thereby, teachers' psychological quality should be strengthened and improved through various targeted measures, and teachers should enhance their recognition for education informatization and transfer the role, so as to help them get out of the dilemma of education, learn the strategy of solving inner conflicts, develop their value, ensure China's education development and talent cultivation, and provide intelligent support for China's scientific and technological innovation and economic development.

References

Chen, H. (2010). The significance, difficulties and adjustment of the role communication of university teachers. *Hubei Social Sciences*, *1*, 176-180.

Giddens, A. (1991). *Modernity and self-identity. California*: Stanford University Press.

Li, J. (2015). The fracture and return on teachers' emotion. *China Education Journal*, *5*, 86-90.

Li, X., & Liao, H. (2006). The influence of education informationization on the teaching mode and the relationship between teachers and students in colleges and universities. *Economic and Social Development*, *4*(5), 204-206.

Li, Y. (2012). Study on teacher resistance problem in education informatization process. *China Audio & Visual Education*, *308*, 67-75.

Lin, X., & Huang, R. (2009). An investigation on the attitude and behavior of information technology application of primary and middle school teachers. *China Audio Visual Education*, *279*, 17-22.

Lu, J. (1993). *Emotional teaching psychology.* Shanghai: Shanghai Education Press.

Mandinach, E. B., & Cline, H. F. (1992). The impact of technological curriculum innovation on teaching and learning activities. *Paper Presented at AERA.*

Palmer, P. J. (1997). *The courage to teach.* San Francisco: Jossey-Bass Publishers

Strongman, K. T. (2003). *The psychology of emotion – From everyday life to theory.* England: John Wiley & Sons Ltd.

Tsui, A. B. M. (2003). *Understanding expertise in teaching: Case studies of ESL teachers.* Cambridge: Cambridge University Press.

Yu, X., Zhang, R., & Zhu, Z. (2009). Comparison of the model design and international index of educational informationization competitiveness. *China Education Infor*, *17*, 4-11.

Zhang, Z., Wu, W., Chang, Y., Wang, J., & Ni, M. (2015). Research on the hot and developing trend of the domestic and foreign teachers' information technology teaching in recent ten years. *The Chinese Journal of ICT in Education*, *7*, 16-19.

Zhou, J. (2009). Teacher self-identity: Crisis and solution. *Teacher Education Studies*, *21*(4), 27-30.

An Empirical Study of Group Counseling on Improving College Students' Academic Procrastination

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[Abstract] *Group dynamics theory states that a group's overall atmosphere and function will affect the psychology and behavior of team members. Aiming at time management ability and self-control ability, this study used cognitive-behavioral intervention technology to design five units of a group counseling program and to implement group counseling for 15 college students from a university of Hangzhou who volunteered to participate in the Group Counseling of Academic Procrastination once per week for 5 weeks. The study used the pre-post test of The Academic Procrastination Scale-Student Form, Adolescence Time Management Disposition Scale and Self-control Scale for college students. The measurement data tracked one month after the end of group counseling, and the self-evaluation data of the group counseling effect, and obtained the following conclusions through the comparison between the experimental group and the control group, and the intra-group comparison of experimental groups: (1) Group counseling can effectively improve college students' time management ability and self-control ability; (2) College students' academic procrastination can be effectively improved through intervention in time management ability and self-control ability; (3) Group counseling has continuous effects on reducing college students' academic procrastination and improving time management ability and self-control ability.*

[Keywords] *college students' academic procrastination; time management; self-control; group counseling*

Introduction

Academic procrastination refers to the behavior that forms a gap between the actual action and intention although students intend to perform and complete the study task. Such behavior is often accompanied by a negative emotional experience, such as anxiety, or loss, etc. Academic procrastination is not only caused by inertia, but comprehensively affected by cognition, emotion and behavior. Studies have found that academic procrastination not only reduces the academic record and prevents students from achieving their achieving goals, but also weakens the confidence of procrastinators and brings feelings of inferiority, anxiety, depression and other negative emotions. At the same time, academic procrastination has brought more pressure, which easily causes more health problems (Wesley, 1994). Academic procrastination is relatively ubiquitous among college students. Studies have pointed out that more than 80% of college students have academic procrastination, nearly 75% think they often procrastinate, and 50% feel procrastination has brought negative effects (Solomon & Rothblum, 1984). Pang Weiguo (2009) also found that nearly 40% of college students had different degrees of academic procrastination when investigating 11 colleges and universities in the east, north and west areas of China.

At present, the study on academic procrastination mainly focuses on (1) The development of measuring instruments (Solomon & Rothblum, 1984; Milgram, 1998); (2) The study on influencing factors, such as motivation (Senecal, 1995); (3) The study on relevant variables, such as time management disposition (Zhou & Lv, 2014), and self-control (Senecal, 1995). On the whole, current studies have mainly remained in the stage of the status quo description and theoretical discussion. The studies on

intervention are relatively fewer. A few intervention studies intervene mainly through group counseling from cognitive behavior and self-control (Wang, 2014).

In the writer's view, group counseling activities under the framework of group dynamics theory can promote behavioral change of its members, so using the method of group counseling to promote and improve two important relevant factors of academic procrastination, namely time management disposition and the self-control, and can improve academic procrastination accordingly. As a result, based on predecessors' studies, this study improves the time management disposition and self-control of procrastinators through group counseling, and further explores the role of group counseling in improving college students' academic procrastination.

Research Methods

A university in Hangzhou recruited 15 college students who volunteered to participate in the Group Counseling of Academic Procrastination to form an experimental group. The experimental group was divided into experimental group A (8 students) and group B (7 students). Due to the limited number of recruits, students from control group randomly selected 45 students from elective courses of the entire university to measure academic procrastination, and selected the top 15 students as a control group. Two experiments were conducted with a group counseling once per week for 5 weeks. The control group conducted no intervention.

The Academic Procrastination Scale-Student Form (Milgram, 1998), *Adolescence Time Management Disposition Scale* (Huang, 2001), and *Self-control Scale* for college students (Mezo, 2005) were used to test the experimental group and the control group before and after the experiment, and conduct a one-month following test after the group counseling. The test data used independent sample t to test and compare the differences between the experimental group and the control group, as well as the differences of the two experimental groups.

The basic information of the sample: the experimental group and the control group respectively have 11 boys and 4 girls; 11 science students, 4 liberal art students, 6 freshmen, 7 sophomores, and 8 juniors.

Group Counseling Program Design

Based on cognitive-behavioral intervention technology, this study reduces the gap between behavioral intention and actual action through the intervention of behavior and the establishment of positive cognition, so as to help group members adjust their academic procrastination behavior. The study mainly investigated the effect of group counseling on time management, self-control and academic procrastination. The design principles and objectives of the five units of group counseling program were as follows.

The activity in the first unit mainly asked members to get to know each other and form a comfortable, warm and safe community atmosphere. Based on group dynamics theory, the overall atmosphere and function of the group will affect the psychological and behavior of group members. In addition, corresponding to the "setting goals" dimension of time management disposition, we asked members to develop a scientific and reasonable goal. The activity in the second unit was skill training of time management. Time management disposition has a predictive effect on academic procrastination and enhances the capacity of time management, which can effectively reduce college students' academic procrastination. "Time Survey" in the activity was the members' reporting and analysis on the utilization of the previous week, which helped to improve their time monitoring and self-efficacy. Draw "Time

Distribution Pie Chart" and "Time Management Four-quadrant Chart" corresponding to the "Time Distribution" and "Priority" of time management disposition. The activity in the third unit was interference elimination training. This activity required group members to analyze the causes interfering with their own learning plans, to learn to use ABC reasonable mood theory to change irrational time concept, and to solve the problems existing in time management one-by-one. The activity in the fourth unit was self-control training. According to the "Pygmalion Effect" in education psychology, we gave a psychological suggestion to members to stimulate their potential, to enhance their confidence, and to strengthen members' self-control from subconsciousness. The activity in the fifth unit was to let members share their change and growth, harvest and comprehension, and give affirmation and encouragement to the members' progress, namely give positive reinforcement to them, which helps members to continue their good behavior.

Results

Comparison Between the Experimental Group and the Control Group

Comparing the pre-test data of the experimental group and the control group (we merged the data of experimental group A and group B), it can be found that the experimental group was significantly higher than the control group in academic procrastination degree ($p < 0.05$). There was no significant difference between the two groups in time management disposition and self-control (see Table 1). Comparing the post-test data of the experimental group and control group, it is obvious that two groups have significant differences in academic procrastination, time management disposition and self control ($P < 0.05$) (see Table 1). From the point of average value, the experimental group significantly decreased in academic procrastination, and significantly increased in time management disposition and self-control.

Table 1. ***Comparison of Pre-Test Data Between the Experimental Group and the Control Group***

	Pretest		**t**	**Posttest**		**t**
	Experimental Group(n=15) M±S	Control Group (n=15) M±S		Experimental Group (n=15) M±S	Control Group (n=15) M±S	
Procrastination	3.79±0.53	3.41±0.12	2.728*	3.04±0.55	3.43±0.30	-2.457*
Time-Management	3.10±0.25	3.15±0.26	-0.629	3.41±0.27	3.03±0.35	2.426*
Self-control	3.18±0.26	3.31±0.52	-0.831	3.46±0.38	3.14±0.28	2.285*

*Note: * p<0.05; ** p<0.01*

Comparison in the Experimental Group and the Control Group

Comparing the pre-test and post-test data of the experimental group in academic procrastination, time management disposition and self-control, it can be found that they all have significant differences ($p < 0.05$); comparing the pre-test and post-test comparison of the control group, the difference is not significant (see Table 2), which suggests that through group counseling, the experimental group's academic procrastination behavior is significantly reduced, and their time management ability and self-control ability have been significantly improved, while the control group has no change in academic procrastination, time management and self-control because they did not participate in group counseling.

Table 2. ***Comparison in Experimental Group and the Control Group***

	Experimental Group (n=15)		t	Control Group (n=15)		t
	Pre-test M±S	***Post-test M±S***		***Pre-test M±S***	***Post-test M±S***	
Procrastination	3.79±0.53	3.04±0.55	3.835**	3.41±0.12	3.43±0.30	-0.346
Time-Management	3.10±0.25	3.41±0.27	-3.312**	3.15±0.26	3.03±0.35	1.243
Self-control	3.18±0.26	3.46±0.38	-2.326*	3.31±0.52	3.14±0.28	0.834

*Note: * p<0.05; ** p<0.01*

Comparison in the Experimental Group's Academic Procrastination

Academic procrastination contains three dimensions: homework completion, review for the exam and self-regulated learning. Table 3 shows the academic procrastination change of experimental group A and experimental group B before and after the intervention. In general, both experimental group A and group B have significant differences in academic procrastination before and after the intervention ($p < 0.05$ and $p < 0.01$, respectively). Comparing the two groups, it can be found that the difference in group B is more significant – the differences in homework completion, review for exams, and self-regulated learning are all significant ($p < 0.05$, $p < 0.05$ and $p < 0.05$, respectively), while experimental group A only has significant difference in the dimension of self-regulated learning ($p < 0.01$).

Table 3. Comparison in Experimental Group's Academic Procrastination

	Experimental Group A (n=8)		t	Control Group B (n=7)		t
	Pre-test M±S	***Post-test M±S***		***Pre-test M±S***	***Post-test M±S***	
Procrastination	3.86±0.61	3.16±0.65	2.192*	3.72±0.45	2.89±0.41	3.597**
Homework	3.79±0.81	3.18±0.58	1.741	3.86±0.63	3.02±0.41	2.941*
Review Exam	3.76±0.62	3.15±0.83	1.667	3.53±0.53	2.67±0.39	3.466**
Self-Learning	4.07±0.44	3.16±0.57	3.567**	3.82±0.55	3.04±0.50	2.774*

*Note: * p<0.05; ** p<0.01*

Comparison in Experimental Group's Time Management Disposition

Time management disposition is composed of time value, time control and time efficacy. In general, both experimental group A and group B have significant differences in the dimensions of time management disposition and the practice monitoring ($p < 0.05$) (see Table 4). The post-test scores of two groups are significantly higher than the scores before group counseling, it shows that both groups have significant improvement in time management ability, which is mainly reflected in the dimension of time monitoring; while the promotion of time value and time efficiency is not significant.

Table 4. ***Comparison in Experimental Group's Time Management Disposition***

	Experimental Group (n=8)		t	Experimental Group B (n=7)		t
	Pretest M±S	***Posttest M±S***		***Pretest M±S***	***Posttest M±S***	
Time-Management	3.13±0.25	3.46±0.30	-2.432*	3.06±0.26	3.35±0.25	-2.159*
Time Value	3.88±0.33	4.15±0.37	-1.553	3.76±0.58	3.60±0.71	0.455
Time Control	2.79±0.40	3.17±0.33	-2.097*	2.74±0.36	3.26±0.34	-2.738*
Time Efficacy	3.20±0.28	3.46±0.30	-1.825	3.10±0.30	3.33±0.36	-1.292

*Note: * p<0.05*

Comparison in the Experimental Group's Self-Control

Self-control includes three dimensions: self-monitoring, self-evaluation and self-reinforcement. It can be seen in Table 5 that the pre-test and post-test of experimental group A have marginal significant

difference in self-control, and experimental group B's pre-test and post-test have significant differences in self-evaluation dimension. Merging the two groups of data, the differences between the pre-test and post-test of self-control are significant ($p < 0.05$) (See Table 2). In addition, from the point of average value, except the self-reinforcing dimension of experimental group B, the post-test data of self-control and self-monitoring and self-evaluation are increased. Thus, it can be seen that self-control ability has been significantly improved through group counseling.

Table 5. ***Comparison in the Experimental Group's Self-Control***

	Experimental Group A (n=8)		**t**	**Experimental Group B (n=7)**		**t**
	Pretest M±S	***Posttest M±S***		***Pretest M±S***	***Posttest M±S***	
Self-control	3.17±0.21	3.49±0.37	-2.135△	3.20±0.32	3.43±0.41	-1.159
Self-monitoring	3.20±0.37	3.60±0.44	-1.965	3.03±0.51	3.37±0.41	-1.392
Self-evaluation	3.13±0.26	3.38±0.45	-1.368	3.20±0.28	3.60±0.33	-2.449*
self-reinforcement	3.18±0.51	3.50±0.49	-1.305	3.37±0.45	3.31±0.58	0.206

*Note: * p<0.05; △marginal significant, p = 0.053*

Comparison in the Experimental Groups' Post-Tests and Tracking Tests

One month after group counseling, a tracking test was conducted on the two experimental groups. Table 6 shows that the post-tests and tracking tests of experimental group A and B have no significant differences in academic procrastination, time management disposition and self-control. It shows that one month after group counseling, academic procrastination, time management disposition, self-control ability of the two groups of experimental group members maintained their levels at the end of group counseling, which illustrates the effect that group counseling is continuous.

Table 6. ***Comparison in the Experimental Groups' Post-tests and Tracking Tests***

	Experimental Group A (n=8)		**t**	**Experimental Group B (n=7)**		**t**
	Post-test M±S	***Tracking Test M±S***		***Post-test M±S***	***Tracking Test M±S***	
Procrastination	3.16±0.65	2.74±0.37	1.610	2.89±0.41	2.75±0.27	0.746
Time Management	3.46±0.30	3.38±0.60	0.349	3.35±0.25	3.42±0.24	-0.538
Self-control	3.49±0.37	3.58±0.30	-0.495	3.43±0.41	3.51±0.34	-0.425

Group Counseling Evaluation of Academic Procrastination

In order to further understand the intervention effect of group counseling on academic procrastination, this study used the members' self-evaluation method. Table 7 shows two experimental groups' evaluation results of group counseling. It can be seen that members feel satisfied with the group atmosphere, they feel comfortable, warm and safe in the group, and they actively participate. Most of the members believe that they learned something, and are willing to continue to participate in similar counseling. They gave the highest evaluation on "intervention makes them master the practical time management method". Most of the members agreed, "I can adjust my mood well" and "my self-control is improved, the execution of learning plan is strengthened".

Table 7. ***Experimental Group A and Group B's Evaluation on Group Counseling (the Data in Brackets Represent Experimental Group B)***

Title	Strongly disagree	Disagree	General	Agree	Strongly disagree
I feel comfortable, warm and have safe feeling in the group	0(0)	0(0)	0(0)	0(0)	8(7)
I like the atmosphere of group.	0(0)	0(0)	0(0)	0(0)	8(7)
I can freely express my ideas in the group.	0(0)	0(0)	0(0)	1(2)	7(5)
I think I'm actively involved in the group.	0(0)	0(0)	0(0)	1(4)	7(3)
My academic procrastination is reduced a lot than before.	0(0)	0(0)	0(0)	3(2)	5(5)
I think setting a target is effective.	0(0)	0(0)	0(0)	4(3)	4(4)
I have mastered some practical time management methods.	0(0)	0(0)	0(0)	1(1)	7(6)
I can regulate my emotions better.	0(0)	0(0)	1(1)	4(4)	3(2)
My self-control has improved and my execution of learning plan is also strengthened.	0(0)	0(0)	2(3)	4(3)	2(1)
Do you want to continue to attend a similar course?	0(0)	0(0)	0(0)	2(2)	6(5)

Discussion

The Analysis of Group Counseling's Effect on College Students' Academic Procrastination

The process of procrastination improvement includes: awareness, action, adjustment, acceptance and implementation (Knaus, 2000). At present, the method of group counseling is mainly used to improve academic procrastination. To cultivate and develop the procrastinators' positive attitude and behavior, Hoover (2005) used the method of personality feedback in group counseling, and found that the method of personality feedback not only improved students' procrastination, but also played an important role in model demonstration to other students with procrastination who did not participate in the group counseling. This study confirmed previous findings.

Analysis on Group Dynamics Theory

Group dynamics theory states that group counseling has an important role in the psychology and behavior of group members through the overall atmosphere and function of the group. Group counseling of academic procrastination creates a warm, comfortable and safe atmosphere. Group members are aware of the universality of academic procrastination problems, and realize that their language and behavior in the group can be accepted. They are hopeful about the group, they actively participate in the group, and they sincerely share and communicate. In the atmosphere, members found common goals and they were willing to find out the causes and solutions to their problems to reduce academic procrastination.

Analysis on Social Learning Theory

Bandura's Social Learning Theory emphasizes the self-regulating process of the human behavior. This study will bring together students from different grades and majors who volunteer to participate in the group counseling for academic procrastination. Members actively participate in the links for goals setting, time management and self-control. Members are asked to share their learning plan formulation, completion and time management of the last week at the beginning of counseling, they were asked to record their progress after counseling, make their next week's learning plan and time distribution, and achieve the regulation effect of academic procrastination through training the members' self-observation, self-evaluation and self-reinforcement.

The Analysis of the Group Counseling's Effect on College Students' Time Management Disposition

Time management disposition is an individual's psychological and behavior characteristics that show in their attitude, planning and use of time; it is a kind of multi-dimensional and multi-level mental structure, and is composed of time value, time monitoring and time efficiency. The study result shows that participants' time management skills can be effectively improved through group counseling activities themed with time management disposition training.

The Dimension Analysis of Time Control

Time control is an individual's concept and ability of using and managing time; it is an important dimension of time management. Time control has a certain prediction effect on academic achievement, and time value and time efficacy affect on academic performance through time control (Huang & Zhang, 2001). Time control also includes setting goals, scheduling, priority, feedback and time allocation. The study results show that the experimental group had a significant improvement in these aspects. It may be related to the fact that the program design of intervention activities in this study focuses on these dimensions of time control. The first unit of group counseling program is goal setting, the second unit is time management skills training, and the third unit provides members with the methods to eliminate external interference and internal irrational emotional interference, which helps members to set goals and distribute time better as well as make reasonable plans.

The Dimension Analysis of Time Efficacy

Time efficacy is an individual's confidence in their time management and estimation of their time management behavior (Huang & Zhang, 2001). The links of "Appreciation Journey" and "Self-Affirmation" confirm the progress of members from the internal and external aspect, respectively, to increase their self-confidence, which improves their confidence in time management and estimation of their time management behavior to a certain extent. Although experimental group A and experimental group B had no significant change in their time efficacy dimension of time management disposition before and after the intervention, their post-test scores were higher than the pre-test, which shows that although the change of the experimental groups' time efficacy was not obvious, it was enhanced.

The Dimension Analysis of Time Value

Time value is an individual's stable attitude and opinion to time value and function (Huang & Zhang, 2001). In this study, experimental group A and experimental group B's time value had fewer pre-test and post-test changes, partly because the operability activities about time value change in the intervention program were very few, partly because these values have relative stability and permanence which are difficult to change in a short time, and these may be the reasons why the two experimental groups have no obvious changes in time value.

To enhance time value, its understanding can be added into the project design of group counseling. However, time value is difficult to change in a short time because it is individual's stable attitude and idea of time value and function. Therefore, this study focuses on enhancing time monitoring and time efficacy to guide students to learn to manage their time reasonably.

The Analysis of Group Counseling's Effect on College Students' Self-Control

Self-control is an individual's behavior to change themselves such as repressing their feelings, or desires, etc., and make themselves maintain their inhibition ability with social standards and long-term goals. Wang Yalin's study shows that (2014) group counseling can effectively improve graduate students' self-

control ability and academic procrastination. In this study, the fourth unit of group counseling uses "Self-Suggestion Intervention' to regulate members' self-control ability. This method uses inner subjective imagination to conduct self-motivation, and states that this idea will bring the corresponding physiological and psychological changes, which consciously induces a positive and good mental state.

Self-evaluation is an individual's appropriate evaluation on their behavior. Through the first three groups counseling units, group members feel more and more progress. Mutual recognition and praise for growth and progress are conducted between members with the "Appreciation Journey" in the fourth unit. The "Self-Affirmation" link uses self-suggestion to make members conduct self-affirmation, which increases their confidence. In the fifth unit, group members first shared the harvest and inspiration of their group counseling, and then leaders reaffirmed the progress of each member. Internal and external affirmation strengthened the members' good behavior, and their own evaluation is also improved.

Control is less than that of time management in the entire group counseling activities, which may be the reason causing the improvement effect of the members from the experimental group is lower than that of time management skills. As a result, the model demonstration method and concentrated attention method are added into the link of self-control to improve the self-control ability of group members. Group members are asked to record their actions every day to judge whether their behavior is consistent with the plan to strengthen their performance of strong self-control ability, to weaken the performance of weak self-control ability, to timely reward them when completing the task, to punish them if they cannot complete the task; and correct unreasonable plans in a timely manner. In addition, self-control is related to internal motivation. In addition to the dependence on external supervision, the group members' intrinsic motivation should also be motivated, so that self-control ability can be enhanced persistently in this way.

The Analysis on the Intervention Plans of Group Counseling

Although this study was designed in accordance with the experimental procedures and data processing methods of psychology, there are still many shortcomings in the research due to the researchers' limitation in subjects for the following reasons: (1) The experimental group was made up of recruited volunteers with a stronger incentive to change their procrastination. As a result, the initial motivation factors may confuse the effect of group counseling; that is, motivation itself may be a factor to promote behavior change. (2) The time spent on group counseling was too short. There are five units in the group counseling program, three of them are about the training of time management skills, but only one unit is involved in self-control, which may be the reason that is the cause that the improvement effect of the latter is not as good as the former. Each intervention has at least three sessions of counseling together with the first group and the last share; it is more reasonable for complete group counseling to have eight counseling sessions. Intervention can be conducted more deeply in this way, and the progress of group members can be better strengthened. (3) The standard of effect evaluation is single. The study only used scale evaluation to evaluate the intervention, and the scale sometimes cannot fully reflect the actual situation of the subjects. For the evaluation of the intervention effect, the self-reporting of subjects can be combined with the behavior observation of subjects. Future studies can intervene by combining group counseling with individual counseling, which can achieve better effects. Future studies should conduct a primary comprehensive evaluation on procrastinators and their problems first, then classify visitors with different procrastination types and procrastination degrees, and conduct group counseling pointedly. In addition, future studies should combine group counseling with psychological counseling techniques of

famous schools, and develop targeted plans with good operability, thus enriching college students' mental health education teaching.

Conclusion

Aimed at time management ability and self-control ability, this study designed five units for a group counseling program according to group dynamics theory and used cognitive-behavioral intervention technology to implement in with 15 college students who volunteered to participate in the Group Counseling of academic procrastination once per week for 5 weeks. The obtained research conclusions are as follows:

1. Group counseling can significantly improve college students' academic procrastination behavior, which is especially obvious in self-regulated learning effect;
2. Group counseling can significantly improve college students' time management, and has an obvious effect on the improvement of time monitoring;
3. Group counseling has a positive effect on students' self-control ability enhancement, and has a significant effect on self-evaluation;
4. Intervention is conducted through time management skills and self-control, which can effectively reduce college students' academic procrastination behavior;
5. Group counseling has continuous effects on reducing college students' academic procrastination and improving time management and self-control.

Reference

Senecal, C., Koestner, R., & Vallerand, R. J. (1995). Self-regulation and academic procrastination. *The Journal of Social Psychology*, *135*(5), 607-619.

Hoover, E. (2005). Tomorrow I love ya. *Chronicle of Higher Education*, *52*(16), 30-32.

Huang, X., & Zhang, Z. (2001). The compiling of adolescence time management disposition inventory. *Acta Psychologica Sinica*, *04*, 338-343.

Knaus, W. J. (2000). Procrastination, blame and change. *Journal of Social Behavior & Personality*, *15*, 153-166.

Mezo, P. G. (2005). The Self-Control and Self-Management Scale (SCMS): A general measure of self-control and self-management skills. Doctoral Dissertation. Hawaii: The University of Hawaii.

Milgram, N., Mey-Tal, G., & Levison, Y. (1998). Procrastination, generalized or specific in college students and their parents. *Personality and Individual Differences*, *25*, 297-316.

Pang, W., & Han, G. (2009). Study on the popularity and causes of academic procrastination of Chinese undergraduates. *Tsinghua Journal of Education*, *06*, 59-65, 94.

Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive-behavioral correlates. *Journal of Counseling Psychology*, *31*(4), 503-509.

Wang, Y. (2014). Effect of group counseling based on self-regulation on academic procrastination of postgraduate. *China Journal of Health Psychology*, *02*, 208-210.

Wesley, J. C. (1994). Effects of ability, high school achievement and Procrastinatory behavior on college performance. *Educational and Psychological Measurement*, *54*, 404-408.

Zhou, Y., Lv, G., & Yang, Y. (2014). Time management disposition and academic procrastination: Sense of self-efficiency as a moderator. *Chinese Journal of Clinical Psychology*, *03*, 533-536.

Compiling and Testing the Reliability and Validity of the College Students' Integrity Education Questionnaire – Based on the Empirical Study of Integrity Education Group Counseling

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[Abstract] *Enhancing the effectiveness of college students' integrity in education is an important task to improve ideological and political education, and creativity is in dire need with regard to education methodology. As a consequence, integrity education group counseling has become one of the most important means to probe into college students' integrity education. This paper classifies the college students' integrity education questionnaire into five dimensions – political integrity, social integrity, study integrity, economic integrity and life integrity. In accordance with the procedures and requirements of carrying out college students' integrity education, a literature research method, interview and questionnaire survey method are applied to compile a college students' integrity education questionnaire, and the reliability and validity of the questionnaire are tested objectively afterwards. Results of the study show that the college students' integrity questionnaire is compatible with psychometrics, and the questionnaire has good reliability and validity. As a result, the devised questionnaire, together with group counseling, is applicable to the study to test and interfere in the results of the college students' integrity education.*

[Keywords] *college students; integrity education questionnaire; reliability; validity; questionnaire compilation*

Introduction

College students' integrity education is an indispensable component of the integrity system of the whole society, and it's an important part of the ideological and political education in universities (Zhao, X., 2014). However, traditional methods are not effective in college students' integrity education. Zhejiang University started to conduct psychological health education and group counseling earlier than any other university in the Chinese mainland, and the University began to combine group counseling in psychology with college students' integrity education, and this practice has brought out unique educational advantage and produced evident practical outcomes. College students' integrity education group counseling differs from any other form of ideological and political education, because it focuses on the guidance of group leader's values, and it takes the advantage of the internal impetus of groups, and helps students form correct views of life, views of the world and values by means of communication, discussion, clarification and guidance. Integrity education group counseling puts emphasis on students' internal demands and personal development, so it's easier for students to accept, and it provides a new solution to integrity education problems, thus enhancing the effects of college students' reception of integrity education.

During the practice of integrity education, the authors have adopted Professor Huang Rongsheng's perspective, and classified college students' integrity education into five dimensions, as follows:

- Political integrity requires that college students uphold integrity as their value orientation, stabilize their ideals and faith in socialism with Chinese characteristics, and make them take political responsibility and their historical mission, thus inspiring them to live up to integrity with self-awareness.

- Social integrity requires that college students abide by the moral principles of honesty and carry out the conduct of integrity throughout their social life.
- Study integrity requires that college students do not fall into misconduct like academic dishonesty and cheating, thus creating a good atmosphere for study and research.
- Economic integrity requires that college students manage their expenditures scientifically and pay their student loans on time.
- Life integrity requires that college students be honest and loyal in interpersonal communications, thus creating interpersonal harmony (Huang, R., 2014).

Many previous papers excluded political integrity as a component of college students' integrity education, but the authors hold that it violates the principle of putting moral education first in the universities. Political integrity is a priority of college students' integrity education because it serves as guidance for social integrity, study integrity, economic integrity and life integrity. As a consequence, political integrity is an indispensable part of college students' integrity education.

Literature Review

Concerning integrity, many scholars have given their respective definitions, "The basic connotation of integrity is to be loyal and true to people, believe other people and make people believe you" (Tang, 2005), Wu Jixia defined integrity from the perspective of personality psychology, stating "integrity is the steady psychological quality and behavior trend featured with honesty, trustworthiness and belief which an individual presents in certain social relationship" (Wu, & Huang, 2010). Liu Tonghui argued that integrity education is meant to make people know about integrity and make people internalize integrity as part of their psychological quality, and then transform the internalized psychological quality into conducts. From the perspective of people who receive education, integrity education is a process of cognition, acceptance, internalization and externalization, and from the perspective of educators, it's a process of explanation, persuasion, guidance and supervision (Liu, 2002). In this paper, the authors deem that college students' integrity education is the ideological and political education aimed at establishing integrity consciousness and enhancing integrity conduct, and college students' integrity education also integrates political integrity, social integrity, study integrity, economic integrity and life integrity.

Group counseling started late in China; the first published paper in Chinese on group counseling came out in 1996 (Lian, 1996). With the development of group counseling in China, papers on this topic have increased, for example, Pei Lihua (2006), Qiu Xiaoyan (2011), Jiang Jinhua (2012), Huang Wenqian (2012), Wang Lijuan (2014), and others probed into the relationship between group counseling and psychological health. Jiang Xu (2005), Huang Haiyan (2006), and others probed into the effects of group counseling on college students' careers, and Gao Shuang (2007), Zhang Haiping (2012), and others have probed into the effects of group counseling on ideological and political education, as well as shaping college students' values. In general, scholars conducted more research on general integrity education than they did on college students' integrity education. During the two decades from 1995 to 2015, the retrieval results in the Chao Xing system (2015) show that there are more than 8000 related papers, among which there are 801 master theses, 17 doctoral dissertations. However, there were only 14 papers that are related with college students' integrity education group counseling, and there has been only one master thesis on this topic in the past five years, but there is no related doctoral dissertation (Chao Xing, 2015).

After retrieving related information, we found that although many universities in China are carrying out college students' integrity education, they are using different versions of integrity questionnaires. A

systemic questionnaire with high reliability and validity has not been devised yet, which poses an unfavorable situation on promoting college students' integrity education and testing its effectiveness. Under these new circumstances, in order to measure college students' integrity levels and test the effectiveness of college students' integrity education group counseling, an eligible questionnaire needs to be compiled. Therefore, the authors have compiled a college students' integrity education questionnaire based on integrity situations in Zhejiang University, with the aim to measure the degree of their integrity cognition and test the effectiveness of their integrity education practice.

Method

Activity Design of College Students' Integrity education Group Counseling

The activity design of college students' integrity education group counseling consists of three phases. The first phase includes building groups, getting to know each other, creating a friendly atmosphere, making rules, and deepening understanding. The theme is "meeting each other from thousands of miles away", which helps to form a harmonious atmosphere and help students make acquaintances with each other, and this game also helps to build trust and cohesion within the group.

In the second phase, integrity education will be carried out, which includes clarifying concepts, highlighting major content, solving problems, and consolidating exercises. The topic of this phase is "more integrity, more excellence". Brainstorming is used to understand the connotations of integrity, listening to the call of your hearts through compliments, drawing pictures of your understanding of integrity, discussing white lies, reading some related stories, then discussion and sharing feedback with each other.

In the final phase, practical education will be carried out, which includes generalization, sharing, and continued action. This includes retrospection and integration of the group experience of the former two parts, reinforcing the group effects, and dealing with dissatisfaction. The theme of this phase is "I have an appointment with integrity", where group members share their experiences and feelings, and then all of the group members participate in the game and give soliloquies on integrity. In this part, individual counseling is needed to remedy the disadvantage of group counseling, which is more specific and can enhance the effectiveness of group counseling.

Compilation of the College Students' Integrity Education Questionnaire

In order to compile a college student questionnaire with high reliability and validity, an interview was conducted among 48 college students, and all students were from different grades and majors in Zhejiang University. A preliminary questionnaire was compiled based on the interview minutes, and there were 32 items that came out of these interviews. Then a test for the questionnaire was conducted among 200 college students from different schools of Zhejiang University, and after the test, some repetitive or misleading items and those items with a low factor value were dropped,. The final questionnaire with five dimensions and 16 items was formed; the five dimensions include political integrity, social integrity, study integrity, economic integrity and life integrity. Finally, another test was administered among 377 college students of different genders, from different majors and schools, in Zhejiang University (103 art students, and 274 science students), and the authors obtained 340 valid questionnaires. Based on the valid questionnaires, exploratory factor analysis and confirmatory factor analysis were carried out to test the reliability and validity of the college student integrity education questionnaire, and all of the data were processed with SPSS19.0 and AMOS21.0.

Result Analysis

Exploratory factor analysis shows: the general KMO of the college student integrity questionnaire is 0.752, the KMO of political integrity is 0.562, the KMO of social integrity is 0.836, the KMO of study integrity is 0.795, the KMO of economic integrity is 0.764, and the KMO of life integrity is 0.685. As the results show, the KMO of every dimension is above 0.6, so the questionnaire is suitable for further tests. According to the results of the exploratory factor analysis, all 16 items were testified to be applicable.

Table 1. ***Factor Structure of College Students' Integrity Questionnaire*** *(n=150)*

Item No.	Political Integrity	Social Integrity	Study integrity	Economic Integrity	Life Integrity
B103	0.800				
B104	0.683				
B105	0.682				
B106	0.654				
B208		0.795			
B210		0.715			
B212		0.896			
B313			0.499		
B318			0.666		
B319			0.407		
B421				0.465	
B424				0.822	
B425				0.797	
B526					0.720
B527					0.492
B529					0.587
Eigenvalue	3.697	2.207	1.214	1.099	0.936
% of Variance	23.107	13.793	7.590	6.867	5.853
% of Cumulative	23.107	36.901	44.491	51.358	57.211

Table 1 shows the factor load of most items in their respective dimensions is more than 0.5, which testifies that the questionnaire has a good structure, moreover, all five dimensions can explain 57.21% of the variance of the questionnaire, which testifies that the questionnaire has a good interpretation ratio.

Table 2. ***Cronbach's a Coefficient of the College Students Integrity Questionnaire*** *(n=150)*

Constructs	Political Integrity	Social Integrity	Study Integrity	Economic Integrity	Life Integrity	General Questionnaire
Item No.	4	3	3	3	3	16
a	0.524	0.793	0.775	0.754	0.601	0.886

Table 2 shows that the Cronbach's *a* coefficient of the questionnaire is 0.886, and all the Cronbach's *a* coefficient of five respective dimensions were higher than 0.600, which testifies that the questionnaire has good internal reliability.

The results of confirmatory factor analysis are as follows:

Table 3. ***Composite Reliability and Average Variance Extracted of the College Student Integrity Questionnaire*** *(n=227)*

Constructs	Composite Reliability	Average Variance Extracted
Political Integrity	0.5327	0.3873
Social Integrity	0.5916	0.3327
Study integrity	0.6993	0.3704
Economic Integrity	0.5918	0.281
Life Integrity	0.6175	0.351

Table 3 shows the composite reliability of the five respective dimensions are higher than 0.50, which testifies that the quality of the questionnaire is acceptable; However, average variance extracted of the five respective dimensions are lower than the suggested critical point 0.50, which shows the convergent validity of the questionnaire is not as satisfying as expected.

Table 4. ***General Goodness of Fitting degree of the Questionnaire*** *(n=227)*

X^2(df)	P	X2/df	GFI	AGFI	NFI	RFI	TLI	CFI	RMSEA
155.331(93)	0.000	1.670	0.910	0.869	0.793	0.733	0.873	0.901	0.057

Table 4 shows that most of the goodness of fitting degree of the modal has reached or approached the required standards – for example, GFI=0.910, CFI=0.901, RMSEA=0.057, and TLI=0.873, etc. Generally speaking, the internal structure of the questionnaire is reasonable.

Discussions

All of the available college student integrity questionnaires designed by other scholars were not classified into different dimensions, which does not reflect the overall landscape of college students' integrity education. Moreover, traditional college students' integrity education is based on ideological and political education, which is unable to adapt to the transfer of the society and is not effective. College students' integrity education can't be limited to the surface or a single dimension, and current research should integrate with the backdrop of the times, students' attitudes, and their behaviors, and then combine theory and education practice. This kind of research helps scholars collect data on college students' integrity education, and then the scholars can develop education schemes to enhance college students' integrity levels and promote their physical and mental health according to the data. As a result, we introduced group counseling in the psychology field of college students' integrity education, and this creative practice forms college students' integrity education group counseling, and the college students' integrity questionnaire is also compiled on this basis.

This questionnaire brings the following benefits to college students' integrity education:

1. The classification of the five dimensions is based on literature research and interview, which combines theory with contemporary college students' mindsets, so it's very effective.
2. A clear dimension classification brings great advantage to designing question items and calculating and analyzing data.
3. Scholars can gather information on students' attitudes towards different dimensions and their integrity level on every dimension, and scholars can also make improvements based on the data.
4. Scholars can learn which dimensions of integrity are lagging behind, so that education schemes can be adjusted and modified with clear orientation.

5. The questionnaire can serve as a measurement tool to compare changes before and after the integrity education group counseling practice, thus providing evaluation and improvement for the practice.

According to the theory of psychometrics, the general reliability of a good questionnaire is higher than 0.8, and if the reliability varies from 0.7 to 0.8, it's still acceptable (Wu, 2001). In this research, the general reliability and the reliability of every dimension all have high internal consistency, and every dimension is highly related to the general significant correlation, which means the questionnaire is highly homogenous.

Conclusion

This research shows that group counseling plays a positive role in promoting college students' integrity education, and the effects are shown in the following aspects: group counseling can enhance college students' cognition to integrity; group counseling avails college students of an opportunity to experience integrity education in a positive way; group counseling helps college students foster integrity consciousness and integrity ability.

The questionnaire compiled by the authors consists of five dimensions: political integrity, social integrity, study integrity, economic integrity and life integrity. The questionnaire is proved to have good reliability and validity after exploratory factor analysis and confirmatory factor analysis, so it meets the requirements of psychometrics, and it is applicable to use in other universities in China to test the effectiveness of college students' integrity education.

Limitations and Future Research

Due to limited resource and time, the research was only conducted at Zhejiang University, all of the subjects were students in Zhejiang University, and the number of subjects was relatively small. In future research, subjects from other universities in Zhejiang province or other provinces can be tested, and the number of subjects can be increased to lower measurement deviation, so as to ensure veracity and principles of the questionnaire. Moreover, the five dimensions of college students' integrity education lack sufficient data and theoretical support. In future research, more theories are needed to form a college students' integrity education modal, and the questionnaire also needs to be improved.

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References

Chao, X. (2015). http://www.chaoxing.com/

Deng, H. B., & Yao, H. (2011). Problems and strategies on current college students' integrity education. *Education Exploration*, (235).

Dong, Y., Liao, X. M., & Liu, W. (2008). The investigation and in-depth analysis of learning integrity of college students. *Journal of Southwest University (Social Sciences Edition)*, *34*(3).

Gao, S. (2007). The application of group guidance in the College of Political and ideological work. *Harbin Engineering University*, 33-34

Huang, R. S. (2014). A reader on trustworthiness for college students. *Jiangsu People's Publishing, LTD*, 200-237

Huang, W. Q., Zhang, R., Liu, Y. X., & Zhu, W. E. (2012). Effect of group counseling on graduate students' mental health – Based on positive psychology. *Chinese Journal of Clinical Psychology*.

Jiang, J. H. (2012). A study on the effect of group counseling based on positive psychology on freshmen's mental health. *Beijing Forestry University*, 32-35

Jiang, X. (2005).The intervening effect of group counseling on college student's career programming. *Tsinghua University*, 34-39

Jiang, Z. D. (2003). Discussion on the connotation and contents of political integrity. *Theory Journal*, *5*(117).

Lian, S. F. (1996). Psychological factors influences communication of ideological and political education. *Thought·Theory·Education*.

Liu, T. H. (2002). On sincere and credit education. Journal of Shanghai Teachers University (Social and Education Science), 31(10).

Pei, L. H. (2006). Group psychological guidance in mental health education course. *Chinese Mental Health Journal.*

Qiu, X. Y., & Tang, J. (2011). An empirical study of group guidance in mental health education course of college students. *Journal of Educational Science of Hunan Normal University*, *10*(1).

Shi, W. F. (2014). General research overview on students' integrity education in recent years. *Journal of Hunan University of Science and Engineering*, *35*(9), 80-83.

Tang, G. Z. (2005). General research overview on the connotation of integrity. *Social Sciences Review*, 20(4).

Wang, C. (2013). College students living faith system construction – Based on the perspective of Shanxi Province in the empirical analysis of college students. *Shanxi University*.

Wang, L. J. (2014). The intervention of group counseling on fresh vocational students' mental health and adaptability. *Lanzhou University*, 26-28

Wu, M. L. (2001). *SPSS application practice.* Beijing: China Railway Publishing House.

Wu, J. X. (2009). *Fostering personality of integrity,* (pp. 10, 285-319,74-76). Hefei: Anhui Education Press.

Wu, J. X., & Huang, X. T. (2010). A theoretical thinking on integrity psychology research. *Journal of Southwest University (Social Sciences Edition)*, *36*(6).

Xia, H. Y. (2006). A research of the influence of group counseling on college students' career planning. *Nanjing Normal University*, 47-49

Yang, X. Q., & Wan, L. (2009). Constructing evaluation indicator system and evaluation modal of college students' integrity. *Intelligence*, (31), 247.

Zhang, G. K., &Yan, S. Y. (2008). Presentation and strategies on the loss of college students' economic integrity. *Market Modernization*, (31), 242-243.

Zhang, H. P. (2012). Research in group counseling on the impact of college students' core values education. *Chongqing Jiaotong University*, 34-40

Zhang, X. M. (2008). Multiple dimensional thinking about the construction of trust system for Chinese university students. *Journal of Southwest University (Social Sciences Edition)*, *34*(3).

Zhao, X. H. (2014). Research on college students' integrity education. *Youth and Society*.

Zou, J. P. (2005). *On integrity*, (p. 31). Tianjin: Tianjin Ren Min Chu Ban Sh.

Abusive Supervision and Subordinate Promotive Voice Behavior: The Moderation Effect of Employee Forgiveness Behavior

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[Abstract] *Using the data from 668 employee questionnaires, this thesis examines the influence mechanism of abusive supervision on subordinate promotive voice behavior, especially the mediation effect of organizational justice, and the mediation effect of employee forgiveness behavior. The empirical study suggested that (1) Abusive supervision negatively affects subordinate promotive voice behavior. (2) Organizational justice mediates the relationship between abusive supervision and subordinate promotive voice behavior. (3) Employee forgiveness behavior can moderate the relationship between abusive supervision and subordinate promotive voice behavior. The less a subordinate receives abusive supervision, the more he has a promotive voice, when forgiveness behavior is higher. (4) Employee forgiveness behavior can moderate the relationship between abusive supervision and organizational justice. The less a subordinate receives abusive supervision, the more he perceives organizational justice, when forgiveness behavior is higher. (5) The interaction between abusive supervision and forgiveness behavior affects subordinate promotive voice behavior through the mediation effect of organizational justice.*

[Keywords] *abusive supervision; promotive voice behavior; organizational justice; employee forgiveness behavior*

Introduction

Voice behavior includes two types – promotive voice behavior and prohibitive voice behavior. Research has indicated that promotive voice behavior makes more sense for an enterprise. Promotive voice behavior means an "employees' expression of new ideas or suggestions for improving the overall functioning of their work unit or organization" (Liang & Farh, 2012). Promotive voice is positively related to organizational learning (Edmondson, 2003), work performance (Detert & Burris, 2007; Mackenzie, Podsakoff & Podsakoff, 2011), and creativity (Zhou & George, 2001). How to motivate an employee's promotive voice behavior is always important to enterprises. However, so many leaders in enterprises do not treat subordinates well, and abusive supervision continually happens. This can decrease subordinate voice behavior (Wu, et al., 2012), as well as promotive voice behavior. Many scholars have pointed out this negative effect, but the mechanism is still under discussion. Research has indicated that abusive supervision can affect organizational citizenship behavior mediated by organizational justice (Zellars, et al., 2002). We reason that promotive voice behavior is a kind of organizational citizenship

behavior, and abusive supervision can affect it, mediated by organizational justice. Meanwhile, if subordinates can forgive their supervisors, they can hold more will to contribute to a promotive voice.

In the following sections, we develop a conceptual framework to understand the effect mechanism of abusive supervision on promotive voice behavior, mediated by organizational justice, and moderated by forgiveness behavior. We then present a test of this model among a sample of 668 members of enterprises in China.

Theory and Hypotheses

Abusive Supervision and Promotive Voice Behavior

Promotive voice behavior is "employees' expression of new ideas or suggestions for improving the overall functioning of their work unit or organization" (Liang & Farh, 2012). Just as voice behavior, promotive voice behavior is one kind of Organizational Citizenship Behavior (OCB). Some researches have pointed out that leadership behavior can affect OCB. For example, Podsakoff, et al. (1990) and Podsakoff, Mackenzie, & Bummer (1996) found that subordinates' OCBs are positively related to transformational leadership behaviors. On the contrary, some negative leadership behaviors, like abusive supervision, can restrain OCB (Zellars, et al., 2002). Promotive voice behavior is one kind of OCB, and also can be affected by abusive supervision. Many researchers have already indicated that abusive supervision negatively affects voice behavior (Burris, et al., 2008; Wu, et al., 2012). We assume that abusive supervision negatively affects the promotive voice behavior.

Hypothesis 1: Abusive supervision negatively affects promotive voice behavior.

Mediating Effect of Organizational Justice

Abusive supervision affects OCB, mediated by organizational justice (Zellars, et al., 2002). Promotive voice behavior is one kind of OCB, and abusive supervision can affect promotive voice behavior mediated by organizational justice. Abusive supervision can negatively affect a subordinate's organizational justice perception (Aryee, Chen, Sun, & Debrah, 2007). Tepper (2000) indicated abusive supervision negatively relates to subordinates' perceptions of interactional and procedural justice. The perception of organizational justice of subordinates mainly comes from the actions of their supervisors. When a subordinate is abused by a supervisor, they may feel their organization has not treated them justly. And organizational justice affecting OCB has been confirmed by many researches (Zellars, et al., 2002; (Aryee, Chen, Sun, & Debrah, 2007), 2007). We assume that abusive supervision negatively affects promotive voice behavior mediated by organizational justice.

Hypothesis 2: Organizational justice mediates the relation of abusive supervision and promotive voice behavior.

Moderating Effect of Forgiveness Behavior

Forgiveness is an interpersonal reaction, and is the action of a victim abandoning the authority of resentment, denouncement, or revenge on an injustice violator, but instead sympathizes, or even loves, the violator (Goodstein & Aquino, 2010). In forgiveness behavior, the motives of the victim change, the motives of revenge against the violator decreases, but the motives of reconciliation and friendship are enhanced, and there is no more concern of injurious behavior from the violator (McCullough, Worthington, & Rachal, 1997). Organizational researchers regard forgiveness behavior as a coping strategy of workplace violations (Aquino, Tripp, & Bies, 2006). Many researches have focused on

forgiving the organization and the organizational forgiveness climate (Fehr & Gelfand, 2012). Researchers have also found that forgiveness behavior can reduce negative emotions (Fitzgibbons, 1986; Hebl & Enright, 1993), repair the controlling force from the violator (Bies & Tripp, 1995) and interpersonal relations. Fehr & Gelfand (2012) found that the organizational forgiveness climate can affect relationship commitments of employees and interpersonal citizenship behavior. Hence, we forecast that if the a subordinate can forgive the unjust treatment from a supervisor, their reduction of organizational justice perception may be improved, as well as their promotive voice behavior. So, we form the following hypotheses.

Hypothesis 3: Forgiveness behavior can moderate the effect of abusive supervision on subordinate promotive voice behavior.

Hypothesis 4: Forgiveness behavior can moderate the effect of abusive supervision on organizational justice.

Hypothesis 5: The interaction of abusive supervision and forgiveness behavior affect subordinate promotive voice behavior mediated by organizational justice.

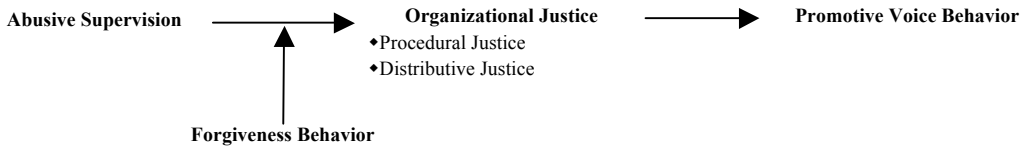

Figure 1. **Conceptual Model**

Method

Participants and Procedure

Data were collected from 668 employees from enterprises in Dalian, Tianjin, Xiamen, and Shenzhen in China and included some leading global enterprises, some large state-owned enterprises, and other types enterprises. The response rate to this survey was 83.6% (n=1254), and only 688 questionnaires were effective. Of the participants, 49% were male, and 51% were female.

Measures

All variables were rated on a 1-5 scale, with responses ranging from 1 (strongly disagree [or never, for the stress scale]) and 5 (strongly agree, [or very often for the stress scale]).

Abusive supervision. Employees completed a 15-item measure of abusive supervision developed by Tepper (2000). An example of a statement is "My supervisor tells me my thoughts or feelings are stupid". Cronbach's α was 0.984.

Organizational justice. Employees completed a 12-item measure of organizational justice developed by Liu, Long & Li (2003), including procedural justice and distributive justice. An example statement is "Have you not had enough time for yourself because of your job?" Cronbach's α was 0.965.

Forgiveness behavior. Employees completed a 5-item measure of forgiveness behavior developed by Bradfield & Aquino (1999). An example item is "I accepted their humanness, flaws, and failures". Cronbach's α was 0.966.

Promotive voice. Employees completed a 5-item measure of promotive voice developed by Liang, Farh, & Farh (2012). An example item is "Proactively develop and make suggestions for issues that may influence the unit". Cronbach's α was 0.966.

Data Analysis

First, we used AMOS for confirmatory factor analysis to test the discriminant validity of the scales, and tested the common method variance using Harman single factor testing. Then descriptive statistical analysis and correlation analysis was done using SPSS. Finally, we analyzed the relation of abusive supervision, organizational justice, employee forgiveness behavior, and promotive voice behavior with regression analysis using SPSS, and tested the impact of interaction between abusive supervision and forgiveness behavior on promotive voice behavior through organizational justice.

Results

Confirmatory Factor Analysis and Common Method Biases

To assess the factor structure of the measures in the study, we tested a series of confirmatory factor analysis models (see Table 1). The results suggested that the five-factor model was a relatively good fit to the data, χ^2=3224.64; $p < 0.001$; CFI=0.92; NFI=0.91; IFI=0.92; RMSEA=0.08. In summary, the hypothesized five-factor model (Model 5) was the best fit for the data, which means the five factors are different concepts.

We also tested the common method variance using Harman single factor testing. We explored factor analysis and separated out 5 factors before rotation, which explained 39.015% of the variance. This data is below 50%, which means the influence of common method biases is not serious (Harrison, McLaughlin, & Coalter, 1996).

Descriptive Statistical Analysis and Correlation Analysis

Descriptive statistics and intercorrelations among the study variables are provided in Table 2. All variables are strongly correlated. The negative correlation between abusive supervision and promotive voice behavior is strong ($r=-0.088$, $p<0.05$). Abusive supervision negatively correlated with procedural justice and distribution justice ($r=-0.211$, $p< 0.01$; $r = -0.246$, $p< 0.01$). Forgiveness behavior positively correlated with procedural justice, distribution justice and promotive voice behavior ($r = 0.286$, $p < 0.01$; $r = 0.231$, $p < 0.01$; $r = 0.363$, $p < 0.01$). Promotive voice behavior positively correlated with procedural justice and distribution justice ($r = 0.346$, $p < 0.01$; $r = 0.293$, $p < 0.01$).

Table 1. ***Model Comparisons of the Measurement and Structural Models*** *(n=668)*

Model	χ^2	*df*	CFI	NFI	IFI	TLI	RMSEA
1 Factor Model	19835.68	594	0.43	0.42	0.43	0.39	0.22
2 Factor Model	15753.24	593	0.55	0.54	0.55	0.52	0.20
3 Factor Model	12142.23	591	0.66	0.64	0.66	0.63	0.17
4 Factor Model	8024.30	588	0.78	0.77	0.78	0.76	0.14
5 Factor Model	3224.64	584	0.92	0.91	0.92	0.92	0.08

Note:

1 factor model: abusive supervision + procedural justice + distribution justice + forgiveness behavior +promotive voice behavior

2 factor model: abusive supervision + procedural justice + distribution justice + forgiveness behavior, promotive voice behavior

3 factor model: abusive supervision + procedural justice + distribution justice, forgiveness behavior, promotive voice behavior

4 factor model: abusive supervision + procedural justice, distribution justice, forgiveness behavior, promotive voice behavior

5 factor model: abusive supervision, procedural justice, distribution justice, forgiveness behavior, promotive voice behavior

Table 2. ***Means, Standard Deviations, and Correlations***

Variable	M	SD	1	2	3	4	5
1. Abusive supervision	1.75	0.889	1				
2. Forgiveness behavior	3.23	1.246	-0.072	1			
3. Procedural justice	2.59	0.956	-0.211**	0.286**	1		
4. Distribution justice	2.52	0.887	-0.246**	0.231**	0.740**	1	
5. Promotive voice behavior	2.94	0.998	-0.088*	0.363**	0.346**	0.293**	1

Note: ** p<0.01, * p<0.05

Regression Analysis

According to the research of Muller, Judd, & Yzerbyt (2005), we tested the mediate effect and moderate effect of H1, H2, H3, and H4. According to the research of Wen, Zhang, & Hou (2006), we tested the moderated mediation models of H5. We setup 16 models to test the 5 hypotheses through the hierarchical regression method. Procedural justice was the dependent variable from Model 1(M_1) to Model 4(M_4). Distribution justice was the dependent variable from Model 5(M_5) to Model 8(M_8). Promotive voice behavior was the dependent variable from Model 9(M_9) to Model 16(M_{16}).

Hypothesis 1 was supported. The result of Model 10(M_{10}) suggested that abusive supervision negatively affects subordinate's promotive voice behavior (β= -0.11, $p < 0.01$).

Hypothesis 2 suggested that organizational justice mediates the influence effect of abusive supervision on a subordinate's promotive voice behavior. According to Muller, Judd, & Yzerbyt (2005), we employed a four-step mediated regression analysis. At Step 1, the control variables were entered (M_9). At Step 2, the main effect of abusive supervision on a subordinate's promotive voice behavior was examined (M_{10}), and abusive supervision negatively affected a subordinate's promotive voice behavior (β= -0.11, $p < 0.01$). At Step 3, the main effects of abusive supervision on organizational justice were examined (M_2, M_6); abusive supervision negatively affected procedural justice (β= -0.28, $p < 0.01$) and distribution justice (β= -0.30, $p < 0.01$). At Step 4, the effects of abusive supervision and organizational justice on a subordinate's promotive voice behavior were examined (M_{11}, M_{12}). The effect of abusive supervision on a subordinate's promotive voice behavior was not significant, when procedural justice entered, and the same for distribution justice. The effects of procedural justice and distribution justice on subordinate's promotive voice behavior were significant (β=0.28, $p < 0.01$; β=0.23, $p < 0.01$). That means the mediation effect of organizational justice existed, and organizational justice can mediate the effect of abusive supervision on a subordinate's promotive voice behavior. Hypothesis 2 was supported.

Hypothesis 3 suggested that forgiveness behavior can moderate the effect of abusive supervision on a subordinate's promotive voice behavior. According to Muller, Judd, & Yzerbyt (2005), we employed a three-step mediated regression analysis. At Step 1, the control variables were entered (M_9). At Step 2, the effects of abusive supervision and forgiveness behavior on a subordinate's promotive voice behavior were examined (M_{13}) (Adjusted R^2=0.34). At Step 3, the effects of abusive supervision, forgiveness behavior, and the interaction between abusive supervision and forgiveness behavior on a subordinate's promotive voice behavior were examined (M_{14}) (Adjusted R^2=0.35). The ΔR^2 between M_{14} and M_{13} was significant (ΔR^2=0.01; $p < 0.05$), and the effect of the interaction between abusive supervision and forgiveness behavior on a subordinate's promotive voice behavior was significant (β=0.09, $p < 0.01$). Hypothesis 3 was supported.

Hypothesis 4 was also supported. We separately tested the moderation effects of forgiveness behavior between abusive supervision on procedural justice and distribution justice. First, according to Muller, Judd, & Yzerbyt (2005), we employed a three-step mediated regression analysis to test the

moderation effects of forgiveness behavior between abusive supervision on procedural justice. At Step 1, the control variables were entered (M_1). At Step 2, the effects of abusive supervision and forgiveness behavior on procedural justice were examined (M_3) (Adjusted R^2=0.17). At Step 3, the effects of abusive supervision, forgiveness behavior, and the interaction between abusive supervision and forgiveness behavior on procedural justice were examined (M_4) (Adjusted R^2=0.18). The ΔR^2 between M_4 and M_3 is significant (ΔR^2=0.02; $p < 0.01$), and the effect of the interaction between abusive supervision and forgiveness behavior on procedural justice was significant (β=-0.12, $p < 0.01$). Forgiveness behavior can moderate the effect of abusive supervision on procedural justice. Then, we employed a three-step mediated regression analysis to test the moderation effects of forgiveness behavior between abusive supervision on distribution justice. At Step 1, the control variables were entered (M_5). At Step 2, the effects of abusive supervision and forgiveness behavior on distribution justice were examined (M_7) (Adjusted R^2=0.15). At Step 3, the effects of abusive supervision, forgiveness behavior, and the interaction between abusive supervision and forgiveness behavior on distribution justice were examined (M_8) (Adjusted R^2=0.19). The ΔR^2 between M_8 and M_7 is significant (ΔR^2=0.04; $p < 0.01$), and the effect of the interaction between abusive supervision and forgiveness behavior on distribution justice was significant (β=-0.17; $p < 0.01$). Forgiveness behavior can moderate the effect of abusive supervision on distribution justice. Therefore, forgiveness behavior can moderate the effect of abusive supervision on organizational justice.

Hypothesis 5 was supported. According to Wen & Ye (2014), we employed a six-step model to test the interaction of abusive supervision and forgiveness behavior affect on subordinate promotive voice behavior mediated by organizational justice. At Step 1, the control variables were entered (M_1). At Step 2, the effects of abusive supervision, forgiveness behavior, and the interaction between abusive supervision and forgiveness behavior on abusive supervision were examined (M_{14}). The interaction between abusive supervision and forgiveness behavior on abusive supervision was significant (β= 0.09; $p < 0.01$). At Step 3, the effects of abusive supervision, forgiveness behavior, and the interaction between abusive supervision and forgiveness behavior on procedural justice were examined (M_4). The interaction between abusive supervision and forgiveness behavior on procedural justice was significant (β= -0.12; $p < 0.01$). At Step 4, the effects of abusive supervision, forgiveness behavior, and the interaction between abusive supervision and forgiveness behavior on distribution justice were examined (M_8). The interaction between abusive supervision and forgiveness behavior on distribution justice was significant (β= -0.17; $p < 0.01$). At Step 5, the effects of abusive supervision, forgiveness behavior, procedural justice and the interaction between abusive supervision and forgiveness behavior on promotive voice behavior were studied (M_{15}). The impact of procedural justice on promotive voice behavior was significant (β= 0.22; $p < 0.01$). At Step 6 the effects of abusive supervision, forgiveness behavior, distribution justice and the interaction between abusive supervision and forgiveness behavior on promotive voice behavior were examined (M_{16}). The impact of distribution justice on promotive voice behavior was significant (β= 0.19; $p < 0.01$). Consequently, Hypothesis 5 was supported – the interaction of abusive supervision and forgiveness behavior affect a subordinate's promotive voice behavior mediated by organizational justice.

Table 3. ***Regression Analysis Results***

Variable	Procedural Justice				Distribution Justice				Promotive Voice Behavior							
	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}	M_{13}	M_{14}	M_{15}	M_{16}
Control Variable																
Gender	0.16*	0.13	0.08	0.09	0.12	0.10	0.06	0.08	0.06	0.05	0.02	0.03	-0.02	-0.03	-0.05	-0.05
Age	-0.05	-0.05	-0.08	-0.07	-0.03	-0.03	-0.05	-0.05	0.04	0.04	0.05	0.04	0.00	0.00	0.02	0.01
Education	-0.09**	-0.11**	-0.10**	-0.11**	0.08**	-0.10**	-0.09**	-0.11**	-0.25**	-0.26**	-0.23**	-0.24**	-0.24**	-0.23**	-0.21**	-0.21**
Work seniority	-0.04	-0.04	-0.03	-0.04	0.00	0.00	0.01	-0.01	-0.04	-0.04	-0.03	-0.04	-0.03	-0.02	-0.01	-0.02
Company property	0.01	0.25**	0.30**	0.27**	-0.02	0.23**	0.26**	0.22**	0.39**	-0.30**	-0.37**	-0.35**	-0.24**	-0.21*	-0.27**	-0.26**
Post property	0.25**	0.19**	0.19**	0.19**	0.22**	0.16**	0.16**	0.15**	0.31**	0.29**	0.23**	0.25**	0.29**	0.29**	0.25**	0.26**
Independent Variable																
Abusive supervision		-0.28**	-0.26**	0.17		0.30**	-0.29**	0.33**		-0.11**	-0.03	-0.04	-0.09*	-0.41**	-0.45**	-0.47**
Mediator																
Procedural justice											0.28**				0.22**	
Distribution justice												0.23**				0.19**
Moderator																
Forgiveness behavior			0.21**	0.39**			0.15**	0.42**					0.26**	0.12*	0.03	0.03
Interaction Effect																
Abusive supervision × forgiveness behavior				-0.12**				-0.17**						0.09**	0.11**	0.12**
Adjusted R^2	0.04	0.10	0.17	0.18	0.04	0.11	0.15	0.19	0.23	0.24	0.30	0.28	0.34	0.35	0.38	0.37
ΔR^2	0.05**	0.06**	0.07**	0.02**	0.04**	0.08**	0.04**	0.04**	0.24**	0.01**	0.07**	0.04**	0.10**	0.01*	0.04**	0.02**
F	5.51**	11.10**	17.43**	17.42**	5.10**	12.83**	15.78**	18.76**	34.67**	31.00**	37.42**	32.74**	43.53**	40.23**	42.23**	40.02**

*Note: ** p<0.01, * p<0.05*

Discussion

The purpose of our study was to explore the mediation mechanism of organizational justice and the moderation mechanisms on the relationship of abusive supervision and promotive voice behavior. Our research found that abusive supervision negatively affects a subordinate's promotive voice behavior. Organizational justice mediates the relationship between abusive supervision and subordinate promotive voice behavior. Employee forgiveness behavior can moderate the relation between abusive supervision and subordinate promotive voice behavior. The less a subordinate received abusive supervision, the more he showed a promotive voice, when forgiveness behavior is higher. Employee forgiveness behavior can moderate the relationship between abusive supervision and organizational justice. The less subordinate received abusive supervision, the more he perceived organizational justice, when forgiveness behavior is higher. The interaction between abusive supervision and forgiveness behavior affects the subordinate's promotive voice behavior through the mediation effect of organizational justice.

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References

Aquino, K, Tripp, T. M., & Bies, R. J.(2006). Getting even or moving on? Power, procedural justice, and types of offense as predictors of revenge, forgiveness, reconciliation, and avoidance in organizations. *Journal of Applied Phycology*, *91*, 653-668.

Aryee, S., Chen, Z. X., Sun, L. Y., & Debrah Y. A. (2007). Antecedents and outcomes of abusive supervision: Test of a trickle-down model. *Journal of Applied Psychology*, *92*, 191-201.

Bies, R. J., & Tripp, T. M. (1996). Beyond distrust: "Getting even" and the need for revenge. In Kramer, R. M. & Tyler, T. R., (Eds). *Trust in organizations: Frontiers of theory and research*, (pp. 246-260). Thousand Oaks, CA, US: Sage Publications.

Bradfield, M. & Aquino, K. (1999). The effects of blame attributions and offender likableness on forgiveness and revenge in the workplace. *Journal of Management*, *25*, 607–631.

Detert, J. R., & Burris, E. R.(2007). Leadership behavior and employee voice: Is the door really open? *Academy of Management Journal*, *50*, 869–884.

Edmondson, A. C.(2003). Speaking up in the operating room: How team leaders promote learning in interdisciplinary action teams. *Journal of Management Studies*, *40*, 1419-1452.

Fehr, R., &Gelfand, M. J.(2012). The forgiving organization: a multilevel model of forgiveness at work, *Academy of Management Review*, *37*, 664.

Fitzgibbons, R. P. (1986). The cognitive and emotive uses of forgiveness in the treatment of anger. *Psychotherapy: Theory, Research, Practice, Training*, *23*, 629-633.

Goodstein, J., & Aquino, K. (2010). And restorative justice for all: Redemption, forgiveness, and reintegration in organizations, *Journal of Organizational Behavior*, *31*, 624-628.

Hebl, J., &Enright, R. D. (1993). Forgiveness as a psychotherapeutic goal with elderly females. *Psychotherapy: Theory, Research, Practice, Training*, *30*, 658-667.

Liang, J., Farh, C. I. C., & Farh, J. L. (2012). Psychological antecedents of promotive and prohibitive voice: A two-wave examination. *Academy of Management Journal*, *55*, 71-92.

Liu, Y., Long, L. Y., & Li, Y. (2003). The effect of organizational justice on organizational outcomes. *Management World*, *3*, 126-132.

Mackenzie, S. B., Podsakoff, P. M., & Podsakoff, N. P. (2011). Challenge-oriented organizational citizenship behaviors and organizational effectiveness: Do challenge-oriented behaviors really have an impact on the organization's bottom line? *Personnel Psychology*, *64*, 559-592.

McCullough Jr., M. E., Worthington, E. L., & Rachal, K. C. (1997). Interpersonal forgiving in close relationships. *Journal of Personality and Social Psychology*, *73*, 321-336.

Muller, D., Judd, C. M., & Yzerbyt, V.Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, *89*, 852-863.

Tepper, B. J. (2000). Consequences of abusive supervision. *Academy of Management Journal*, *43*, 178-190.

Wen, Z. L., & Ye, B. J. (2014). Different methods for testing moderated mediation models: Competitors or backups? *Acta Psychologica Sinica*, *46*, 714-726

Wu, W. K., Wang, W., Liu, J., & Wu, L. Z. (2012). Abusive supervision, perceived psychological safety and voice behavior. *Chinese Journal of Management*, *9*, 57-63.

Zellars, K. L., Tepper, B. J., & Duffy, M. K. (2002). Abusive supervision and subordinates' organizational citizenship behavior. *Journal of Applied Psychology, 87*, 1068-1076.

Zhou, J., & George, J. M. (2001). When job dissatisfaction leads to creativity: Encouraging the expression of voice. *Academy of Management Journal*, *44*, 682-696.

Moral Abnormality and Rational Reconstruction of the Social Organizations in China's Social Transformation

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[Abstract] *Based on Gramsci's Theory of Cultural Hegemony and Habermas's Theory of Cultural Criticism, this paper identifies and explores issues of a social organization's moral abnormality in China, such as a tendency toward self-interest. In this paper, the application of rational reconstruction tactics is proposed so as to achieve the social organization's value regression.*

[Keywords] *social organization; moral abnormality; rational reconstruction; China*

Introduction

Due to historical and realistic reasons, China practices a developing path with special character under a powerful government. This powerful political authority has changed China deeply in a short time, which moves the economy from backward to prosperous, and the society from disordered to orderly. However, every coin has two sides. Politics cannot replace everything. If the political power becomes too strong, the economic operation will lack autonomy and social development will lack independence. When the contradiction between social diversity and political oneness intensifies, then disadvantages will appear. People no longer depend on government for protection only. They believe the moral assurance of the social organizations, which are non-governmental and non-economic, so people consign their value pursuits to social organizations and want to get an equitable, fair and open developing chance of life with them. However, reality may not be satisfied. The Chinese political system is too powerful, which makes instrumental rationality totally overwhelm the communicative rationality, which not only "keeps the public away from the progress of power operation and power balance" (Habermas, 1999), but also "makes the power and money, which is in the form of punishment and payment, become the common model of behavior adjustment in place of communicative action" (Xingfu Wang, 2000). The social organizations even give up their purpose of representing the public will. They become selfish in that they cannot strive for favorable support for people and cannot provide strong guarantees for morality and ethics. Consequently, there are some troubles in the development of these Chinese social organizations. As for this question, this paper first discusses the moral characteristics of social organizations. Second, it concludes the reasons that lead to their moral abnormality. Finally, this paper puts forward some alternative strategies to deal with the problem of moral abnormality.

Moral Characteristics of the Social Organizations in China

A common idea in modern social organization theory is that social organizations, which have special moral characteristics, are in the realm of cultural relations. Hegel put forward that "association is the second ethical origin of forming a country, while civil society is the first". Association is independent of political state, and it "constitutes the fundament of individual's trust and loyalty to the country, which is the support of public freedom" (Hegel, 2003). Gramsci thinks what social organizations represent is ideology, which should be separated from economic foundations. However, Habermas considers social

organizations as "some non-governmental, non-economic relations and voluntary unions, it aims at discussing and solving the confers upon the matters that the public concern" (Habermas, 2003). On the basis of the above opinions, this paper concludes that social organizations have the moral characteristics of independence, public interest, and public consciousness.

Characteristic of Independence

This is the proposition about the essential position of social organizations. Hegel finds that the political state is no longer the only social being. There are additional social spheres. From an historical aspect, two forces contribute to this change. The first is economic strength. The capitalist economy has changed the distribution pattern of interests, which transfers more and more wealth to private people. The "commercial life and industrial life" begin to separate from the political state, and an independent strength springs up, which is a social organization. The second force of change is class strength. The appearance of the citizen class leads to the situation that political discourse is no longer the privilege of the ruling class, and social organizations start to speak for the "non-ruling class". The emergence of social organizations has changed the traditional political pattern. The characteristic of its independence has a positive effect on breaking the political monopoly and promoting social justice.

Characteristic of Public Interests

This is the proposition of the fundamental attitude of social organizations. Gramsci and Marx share different opinions in this proposition. Marx believed that social organizations were in the range of the economic foundation, and that they existed on behalf of people's material intercourse, which was centered on the economic relationship. Gramsci considers that social organizations are in the range of superstructure, which represents all the people's knowledge and spiritual life. This paper supports the latter because in practical terms, social organizations usually take part in the redistributional process of material goods. They don't participate in economic exchange directly, but only adjust and relax economic relations. Consequently, social organizations contain the affectional and cultural factors in people's material intercourse. So they have a tendency toward public interests, which is the characteristic that economies cannot have. Therefore, social organizations are in the realm of a superstructure detached from economies. They are the particular relationships generated after adjusting the economic operation.

Characteristic of Public Consciousness

This is the proposition on the basic function of social organizations. Habermas thinks there is an area between the political state and the civil society, which is "in a debate over the general rules governing relations in the basically privatized but publicly relevant sphere of commodity exchange and social labor" (Habermas, 1999). Habermas calls it a "public sphere" which is constituted by non-governmental and non-economic social organizations on a voluntary basis. In practice, social organizations try to "experience, select and condense the resonant problems in private lives and then magnify into public sphere". They try to "discuss and solve the confers upon the matters that the public concern". Therefore, social organizations represent the public consciousness which focuses on the common private problems in society.

The above moral rules are applied to social organizations in different contexts. However, in real life, social organizations usually have to confront great pressure from both external and internal environments. The ethical values that they support will definitely suffer an ordeal. Once they cannot stand up to the ordeal, then the moral abnormality will appear.

Moral Abnormality of Social Organizations in China

The social system is relatively weak in the three systems of society. The political system achieves its goal through political power, and the economic system achieves it by wealth. The social system only depends on authority, which comes from public recognition. This recognition is uncertain and will be disturbed by external factors. In China, this condition is particularly obvious. The powerful government is a kind of support, as well as a restriction to social organizations. Once the balance is broken up, the weak will lose independence. What's more, economic factors affect social organizations to a large degree. To gain interests is always the most important in economic thinking. If it is extended to the social area, social behaviors will become more benefit-tending, which will depart from the social organizations' characteristic of public consciousness. This loss and deviation is the moral abnormality.

Administrative Tendency

This discusses the moral abnormality of social organizations from a political aspect. In China, people's organizations and quasi-governmental organizations are the connection between the government and people, and most Chinese have the experience of participation. Generally, the government affects social organizations in the following three ways: The first way is that the government sponsors the social organizations directly and takes control of them. The government endows the social organizations' political position to some degree. Some social organizations are sponsored by the government, and they are also brought into the executive establishment and are often given financial allocation from the government. The staff can enjoy the same administrative rank and treatment with officials. In this situation, social organizations work as an assistant to the Communist Party and the government.

The second way is that the government regulates the social organizations indirectly by supervision and administration. The Chinese government takes dual control of the social organizations. Some unofficial organizations can get legal status by being attached to correlative administrative organizations. According to some statistics, only 17% of the social organizations in China operate totally by themselves in daily life. Twenty-one percent (21%) are totally attached to the sponsored administrative units, while 61% are governed by sponsored administrative units in business and undertake some responsibilities although they maintain independence to some degree (Gao, & Yuan, 2008).

The third way that the government influences the social organizations is by government purchase. This is a new method put forward by the government when facing "de-administration". It seems that this method can reduce administrative intervention, but in practice, the government's selection is still unfair to the social organizations. Some social organizations that have close relationships with the government can obtain programs more easily. Therefore, it is the most obvious situation of moral abnormality that the social organizations are usually attached to administration and lose their independence.

Economic Tendency

This section regards moral abnormality of social organizations from the economic aspect. Although the economic system has less impact on the social system than the political system, its impact cannot be ignored. The economic system connects with social organizations through financing by government funds, corporate grants and social donations. At first, the government funds some social organizations. The government has its own interest in social affairs and requests that social organizations that get government funding must maintain their same goals and engage in public service of some special field. So government funding has obvious tendentiousness and needs the social organizations' coordination.

The next area is corporate grants. Generally speaking, the reason why some corporations are willing to provide financial aid to social organizations is that these organizations are related to the development goals and the enterprisers' partiality of the corporations. They want to get good public comments through donations in order to maintain their corporate image and satisfy their personal psychology. Thus, corporate grants are apparently biased, which needs social organizations to cater to them. Finally, society donates to the social organizations. Comparatively speaking, these kinds of donations are the purest for public interest. But the numbers are small in that the social organizations cannot get enough funding by this type of donation. Therefore, social organizations must pay for something if they want to get government funding or corporate grants, and they usually give up moral insistence as the cost of obtaining the funding. Economic trends not only change the way of operation but they also have an impact on the organization's mentality. When the social organizations ignore this deviation of goals, their essence has changed.

Self-interest Tendency

This section discusses the Moral Abnormality of social organizations from the organization development aspect. Both external and internal factors contribute to the development of social organizations. The external development depends on public praise and internal development comes from the protection of its own interests. There is a contradiction between the two in achieving goals because public praise can come from public consciousness, while interests must take their own interests into consideration. Public consciousness and protection of its own interests are ambivalent. So when organizations think more about their own interests, public consciousness will be ignored. On the one hand, social organizations may choose illegal means of bribery in order to protect their own political interests, which can become the main driving force of corruption in the area of public affairs. On the other hand, for the purpose of the economic interests, social organizations may also do damage to public consciousness and expend the donation illegally regardless of the contributors' intention. In daily life, many charity organizations have been thrown into public doubt because of financial problems. Thus, the difference between external and internal goals is the basic reason that leads to the loss of the public consciousness goals.

China is at a key point of social transition in that both the political system and the economic system are confronted with the fact of system update. In order to improve system function, a part of the affairs in regard to public goods and services should be divided from the political-economic system and be taken charge by some other organizations. So the moral abnormality of social organizations will affect their own development as well as the entire political-economic system. We should face the problem with caution.

Rational Reconstruction of the Social Organizations in China

Habermas leads people to believe that the key point of life world recovery is to reconstruct communicative rationality. It is a linguistic proposition. However, Habermas overlooks an important problem in that language is the most direct expression of thinking, but it is also sensitive and has the characteristic of instability and non-persistence; it cannot always stand for individual's true idea. The faiths that people indeed adhere to come from the rational cognition deep inside their hearts, which is the prediction of developing stable values. This paper emphasizes the cognitive reason, which is in the field of psychology.

The development of social organizations in China does not experience struggle and revolution from bottom to top. Instead, they develop in the care of the government and their self-cognition mainly stems from the political system. This system has political tendencies and its role orientation in social organizations is indefinite. In the long term, the government creates social organizations as assistant tools on the basis of pragmatism, so it seldom realizes that the external value of social organizations as system tools is inferior to the internal value of spiritual support. Social organizations are not only system tools, but they are also a kind of spiritual pursuit. So this paper puts forward the reconstruction of cognitive reason by thinking about the following three questions:

First, what kinds of social organizations are more suitable for the political interest in China? In the age of globalization, China confronts a more complex political environment, which means the government should concentrate on strategic problems in the macroscopic field from an overall direction, while other organizations should share responsibility for affairs in the microscopic field. So independent social organizations may cater to a country's political interest in social transition. For this reason, the government should give a free hand in psychology, interest and procedure to help social organizations accomplish independent reconstruction.

With regard to psychology, the government should give up its desire of controlling social organizations and consider their relationship from an equal aspect. In daily work, the government should regard social organizations as partners, show enough respect, weaken their authority effect and help them to construct psychological confidence.

In interest, the government should loosen up resource restrictions and consider their relationship from a tolerant aspect. The government should be of the opinion that if they transfer a part of their resources to social organizations, it will not damage their own interest, but instead will contribute to the exertion of political authority. Basically, the final beneficiary of social organizations is the government.

At last, in procedure, the government should give up having too much interference in social organizations and consider their relationship from a trusting aspect. The government should "break with" social organizations thoroughly, which is not only the apparent separation of identity, but also loosen in procedure. When the government hands concrete affairs to social organizations, it doesn't affect or interfere in the process of operation, and gives them enough private space for the normal activities of social organizations.

Secondly, what kinds of social organizations are more suitable for the economic interest in China? As a socialist country, the evaluation index of economic development in China is different from Western countries' because public ownership is the core of the nation's economy. The Chinese economy naturally has the appeal to give back to society, and the the ultimate goal to develop economy is to realize social harmony. This means that China needs a mechanism or method to regulate market economy so as to control the market tendency to seek private interests and instead, realize public interests. Thus, it shows that social organizations with the characteristic of public interests are more likely to conform to Chinese economic interests. Therefore, we should purify the environment of fundraising and protect the public interests of social organizations. This paper suggests an attempt to set up a new fundraising management in the community, which takes the community as a basic unit to raise funds. This model integrates government funding, corporate grants and social donations into the community which is responsible for fund allocation based on their actual situation. In this way, social organizations can avoid economic risks. Of course, it cannot be denied that there are limitations of fundraising management in a community because this model can only protect the development of small and medium social organizations. But this

paper supports the opinion that small and medium social organizations develop from a basic level and connect closely with people's real interests. Taking these organizations as the core of giving back from economy to society, we can get the most direct social benefits.

Third, what kinds of social organizations are more suitable for social interests in China? The ultimate goal of Communism is to realize the dream of community lives, which is the result of personal consciousness and public consciousness. In the condition of the community, society is extremely merciful – where everyone can find a perfect connection between self-beliefs and public will. As a transition, socialism must also observe this target. Therefore, social organizations with the characteristic of public consciousness are more suitable for the social interests. For this reason, social organizations must examine themselves frequently, look for balance between social expectations and self-development, try to correct the deviations caused by pursuing their own interests in order to avoid internal corruption, increase communication, reconstruct their organizations' images, and win the public trust once again. Social organizations must recognize that the public will be the most important factor which determines organizations' existence and development.

In conclusion, the rational reconstruction of social organizations is actually a process of refreshing our cognition. Social organizations need management innovation by changing the idea so as to look for a realistic way for development. After that, the problem of their Moral Abnormality will be solved. Social organizations will recapture enthusiasm, and the value will return to the organizations.

Conclusion

Nowadays, the moral function of social organizations in China is undergoing some delicate changes. The pressure and challenges from the political system, economic system and self-circulating system have changed the original moral characteristics of the social organizations. The moral characteristics of independence, public interests and public consciousness are disappearing gradually, which we call the Moral Abnormality of social organizations. Apparently, this phenomenon changes "the thing itself"; that is, to change the model, function and so on of the social organizations. But in a deeper level, it means that people's cognition is changing, which is quite awful because people will lose their white souls and become numb by being controlled by interests. What's more, they will use every method to make private interests reasonable, no matter whether it is legal or not. Initially, people may accept and agree with the social organizations to the hilt in order to avoid this inner craziness. We can see that it is not good for our country, society and people if social organizations become disordered. So this paper presented the reconstruction of cognitive reason to create value back to the social organizations. We should think about the following three questions:

1. What kind of social organizations is more suitable for the political interest in China?
2. What kind of social organizations is more suitable for the economic interest in China?
3. What kind of social organizations is more suitable for the social interest in China?

These questions will make people understand that social organizations with initial value are the most suitable for national interests. Therefore, this paper suggests to correct the value deviation of social organizations by the innovation of government administration, economic management and organization management. In short, we can conclude three points: deregulate government control, avoid economic risk, and examine the organizations themselves.

Finally, this paper concludes by quoting a statement from a famous celebrity: "The separation of system and life world is necessary to realize the transition from European feudalism hierarchical society

to modern class society" (Habermas, 1994). If our China wants to realize modernization, we must experience the separation of system environment and living environment, which is the final target and the only way that we have to pass if we want to realize social transition. It is a part of harmonious society construction to cultivate and support life world and to accomplish beneficial development of China, which should be resonated by all the Chinese people.

References

Gao, B., & Yuan, R. (2008). *Blue book on civil society development in China*. Beijing: Beijing University Press.

Habermas, J. (1999). *Strukturwandel der Offentlichkeit*. Shanghai: Xuelin-Bass.

Habermas, J. (2003). *Faktizität und Geltung*. Shanghai: SDX Joint Publishing Company.

Habermas, J. (1994). *Theory of communicative action.* Chongqing: Chongqing-Bass.

Hegel, G. W. E. (2003). *Elements of the philosophy of right.* Beijing: China University of Political Science and Law press.

Wang, X. (2000). *Move away from the plight of the times: Habermas's reflection on modernity*. Shanghai: Social Science Department Press.

Research on Model of Case Features, Based on Analysis of Criminal Psychology and Behavior

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[Abstract] *This paper designed a management model of case information for joint cases based on dominant features and implicit features. Dominant features and implicit features are extracted through the analysis of the mental characteristics and behavior characteristics. The cases will be jointed based on the dominant features and verify based on the implicit features of the cases. A real case is analyzed, and a good result is obtained.*

[Keywords] *dominant feature; implicit feature; joint cases; mental orientation; behavior tendency*

Introduction

In the social transition period, with the increase of the gap between rich and poor and the continuous growth of high consumption and hedonism, the problem of surplus labor in urban areas and laid-off unemployment have become increasingly prominent, which lead to the continued upward trend in all kinds of property infringment and violence cases (Zhang, 2006). With the development of transportation and communication, the number of floating population increased in the coastal areas. Crime is not restricted by region; the criminal suspects commit the crimes from one place to another and crime has the feature of salutatory and continuity, which has a serious impact on social stability. So strengthening joint cases is important in investigation practice, which can improve the efficiency of case investigation and greatly reduce the cost of investigation. One case was solved, so the other cases were solved too.

The concept of Joint Cases is that the police analyze the similarities and the law of many cases to join them. Meanwhile, in investigating the joint cases, they need to thoroughly analyze the behavior and psychology of the criminal suspects, and analyze the nature of clues through various phenomena (Ma, 2007). Realizing the joint cases are based on the mental orientation and behavioral tendency of the criminal suspect, in order to determine the features of the case, whether they are of the same, or similar law, we need to extract the feature information of the cases, and these features usually can be divided into two categories –dominant and implicit. The cases will be joint based on their dominant features and verified on their implicit features. Therefore, when collecting the information of the case, we should extract the dominant and implicit features as much as possible, which needs a scientific system to support the management system.

Analysis of Dominant Features of a Series of Cases

There are many features to be considered when joining the cases, and these features are found to be regular. The cases are joined according to the dominant feature. The dominant feature is closely related to the cases and is very specific and very intuitive, such as type of case, time, site, infringed body parts, and physical characteristics, etc. Because of the features of professional characteristics, personality characteristics, physical characteristics, cultural background, hobbies, experience, living environment and other factors, and the fact that the criminal suspect is caught in the process of committing a crime, will be

a natural reaction from mental orientation and behavior tendency of the criminal, so further analysis of the potential features is key to the cases.

1. Type of case – There are many types of cases. The Initial motivation and purpose is different from the type of case, because the criminal suspect is found in the process of committing a crime and his counter action may evolve the case into a murder case. According to the principle of misdemeanor felony absorption, the case can be classified as a murder case. But the murder is a means of meeting the purpose or the result from a fault in the development of the matter. Therefore, in this case, we shouldn't only analyze the result of the crime, but also analyze the motive of the case.
2. Time of crime – It may be labeled as the exact time (such as at 20:00), or labeled as the time of opportunity, such as when the residents are at work, when there is a crowd, or when the customer is lifting the curtain of a shop.
3. Site of crime – The site of the crime is regular, which can infer the suspect's residence, and even predict the next area of a crime. The choice of the site also reflects the familiar degree to the area, work experience, education level, living habits, and many other characteristics.
4. Body parts of infringement – Infringed body parts are usually planned in advance, and the behavior is suitable, which can get to the purpose of the crime.
5. Physical characteristics – These are the most direct clues, and they can be obtained through the description of the people involved, and can also be inferred through the traces at the scene.
6. Tools of crime – According to the characteristics of the case, criminal suspects will select the tool which is used flexibly, and easily obtained. The tool is usually associated with the occupational characteristics and living environment of the criminal.
7. Object of infringement – It reflects motive and purpose of the crime, and sometimes is determined by the suspect's hobby and means. From most of the series of cases, the characteristics of the object infringed are found to be basically consistent.

Although the implementation of the crime may have different circumstances, the suspect, according to their own characteristics and external features, will choose the appropriate object, time, and site and body parts. After many successful cases, the pattern used is formulated. The suspect will tend to rely on this pattern of crime, so the pattern is relatively stable. Therefore, the series of cases will be found to have consistent characteristics.

Analysis of Implicit Features of a Series of Cases

Joint cases must make full use of the evidence of the crime scene and the law reflected from the cases. In a series of cases, we usually make a comparison between the dominant features, and find the law of the cases. Also, there are some implicit features that can be analyzed, and these features are generally considered to have little to do with the case, but it is precisely these features that will reflect the suspect's intrinsic psychological, emotional nature. The implicit features seemingly have little to do with the case and are not obvious, but they can reflect the nature of the case-related features.

In the last section, a primary analysis is made of the dominant characteristics. These characteristics are very specific and clear. In addition, there are implicit features of the case to suggest that these characteristics can more accurately reflect the details of the case. When joining cases, these characteristics play a very important role (Wei, 2005).

1. The suspect's personality or psychological characteristics, whether psychological metamorphosis or paraphrenia systematiea – The dominant features of such cases are obvious, and the implicit features are more easily analyzed. The characteristics of the objects are more consistent, and even the suspect himself is unable to explain the purpose and motivation of the case. Language expression or behavior characteristics usually have a certain distance with the case. For example, the mean of murder is more brutal, showing a sense of confusion; suspects in a case of theft will only steal special items, and there may even be no purpose of the destruction of behavior, etc.
2. Skillful means, pre-prepared and psychological tension – The choice of entry, the method of entry, the use of tools and the degree of camouflage, can be analyzed to learn whether the suspect has a criminal record, whether there is experience, whether there is pre-preparation, and even whether experience is rich. These also reflect the characteristics of the suspect's personality. If there is more than one way to enter the scene, it is necessary to analyze why the suspect entered through a specific area. There are also other features to consider such as the use of tools is particular, whether there were other alternatives and why the criminal used such tools. These details, such as the process of the crime, the degree of disguise and other details, can reflect the degree of experience and degree of tension, which are helpful to analyze personal characteristics.
3. The purpose of behavior and motivation – This can reflect the personal characteristics of the suspect, such as whether the theft was found to be a direct snatch or escape, or when a snatch is unuccessful, whether the suspect chooses to use violence or to leave. In order to reach the purpose is to use various ways or give up; steal cigarettes, take away the stamp and other unconventional items. These details do not seem important, but they will play an important role in joining cases.

Case Information Management

All aspects of the features should be considered in the process of joining cases, and it is necessary to consider whether the dominant features are consistent; the implicit features also need to be analyzed. Therefore, in the process of the case, the features are transformed into computer information, the dominant feature must be recorded, and also the implicit features must be recorded to become the complementary clues of the dominant feature. The two features can reflect the psychological characteristics and behavior, and they can be very vivid and improve the accuracy of joining cases. Therefore, how to restore the scene, how to see through the digital information and even learn what an experienced investigator feels at the scene, which will be seen in a specific project? This paper will analyze the details of the case, design the information management mode, and vividly restore the scene, which is important (Ma, 2013).

Dominant Features

These may include the initial type of cases, type of case, time, site, entrance, the way to enter the scene, tools used to enter the scene, number of suspects, physical characteristics of suspect, characteristics of object infringed, body parts of infringement, lost item, kind of lost item, value of lost item, lethal weapon, or threatening language. The dominant feature describes the basic characteristics of the case, and implicit feature reflect the details of the case.

Implicit Features

These features include the reason of type evolvement, situation of case type evolvement, who promotes the evolution of the case, opportunity of committing the crime, law of opportunity, surrounding environment, number of entrances, condition of entrance, specificity of ways to enter the scene, brutality of committing the crime, proficiency of means, specificity of weapon, loss of unconventional goods, preference for goods, unconventional behavior, unconventional words, and the degree of camouflage, as well as other prominent details. Dominant and implicit features are scientifically analyzed to vividly restore the scene, which play a very important role to join cases and investigate crimes. These elements are shown in Figure 1.

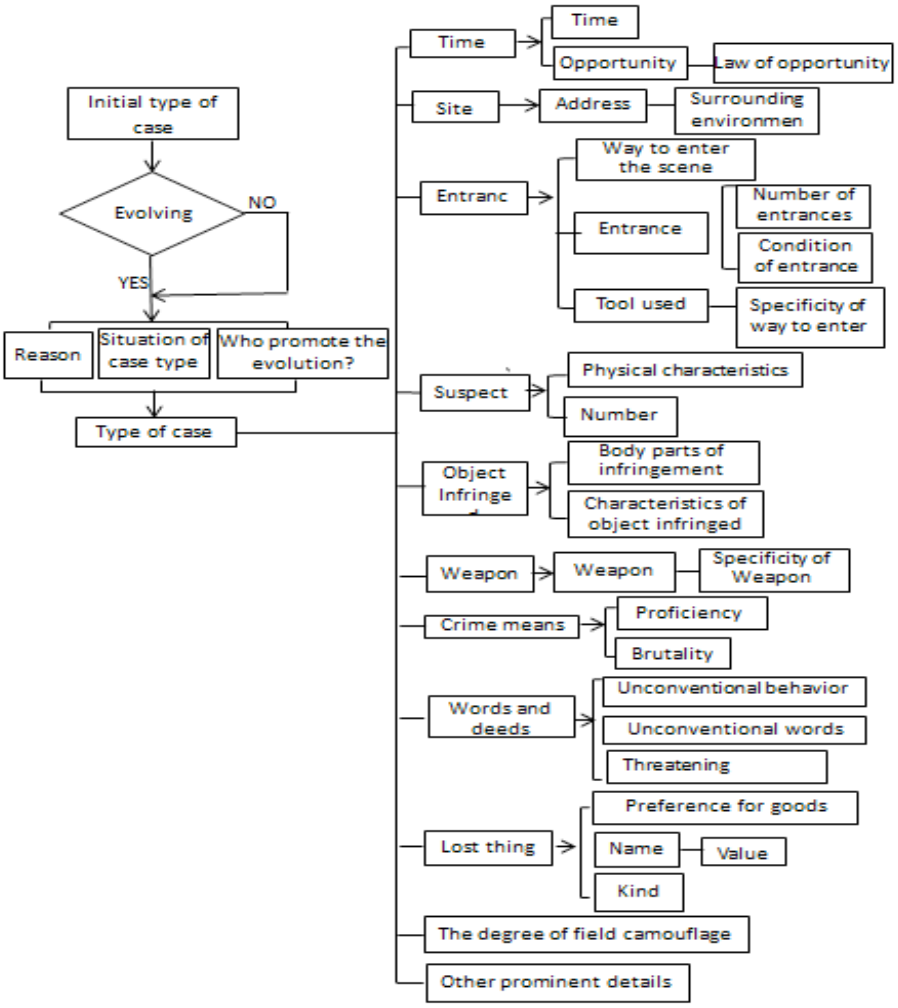

Figure 1. **The Features of Case**

Case Series and Analysis

There were four robbery and murder cases in April 2003, and they all occurred in the daytime, in dense residential districts where women were alone at home (Hao, 2006). The windows and doors of the scene were intact, which was analyzed to mean that the suspect knocked on the door to enter the site by pretending to check or repair the water meter, electricity meters, gas table or other reasons to defraud the

victim's trust. After entering the scene, the suspect pulled a curtain to prevent neighbor's discovery. The ways of committing the crime were using rope at the scene to tie up the victim's hands and threatening them. The tools of the crime were a single blade single blade and a double-edged knife. The suspect pried open a drawer by a knife fetched from the kitchen. The way of killing was to cut the neck of each victim, wrapping the head and neck, and laying the victim beside the bed to bleed to death. The scene had little splashed blood. The room was greatly changed. Suspects stole cash, cell phones, jewelry and other items, and the suspect had an interest in delicate arts and crafts. It is obvious that the suspect's purpose was to plunder property. According to the features of the scene – the capacity of subduing the victim and the situation of slipper and footprint – there were two suspects.

Dominant Feature of These Cases

The type of case is a murder case; the time is daytime; opportunity of the case is women alone at home; entrance through the door; tools of crime are a single blade and a double-edged knife; the way is to cut the victim's head and neck; stolen items include cash, cell phones, jewelry and other items; the number of suspects estimated is two people.

Implicit Feature of These Cases

The means of the murder was more brutal, and skillful; in a dense residential district; the suspect had an interest in delicate arts and crafts; obtaining tool at the scene.

We can understand the case from the dominant features, and these cases are more consistent. The joint cases are further verified through the implicit features.

Conclusions

When a series of cases are joined, it is usually a dominant feature to carry on a collision. The dominant features of each case are consistent, and implicit feature can be a more detailed reflection of the features of the suspect's behavior and psychological characteristics. So implicit features are important. Maybe a series of cases are committed at different sites, and the interval of time of these cases is long, or these cases are handled by different policemen, so a systematic and clear understanding of the cases is necessary. The combination of dominant and implicit features vividly restore the scene through the information system, which plays a very important role to joint cases.

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References

Hao, H. (2006). Scientific apply of the condition for investigating merged cases. *Journal of People's Public Security University of China*, (4), 40-47.

Ma, Z. (2007). Discussion on network cases' joint-investigation. *Journal of Xinjiang Police College*, (3), 26-29.

Ma, Z. (2013). Analysis of the case after jointing cases series. *Journal of People's Public Security University of China*, (3), 33-38.

Wei, C., Zhang, G., & Li, W. (2005). On joint investigation in series cases. *Journal of Beijing People's Police College*, (2), 32-34.

Zhang, J., Shen, J., & Yu, K. (2006). Brief analysis to the conditions and methods of jointing case. *Police Technology,* (3), 53-54.

Online and Offline: An Integrated Model of Mental Health Education of College Students

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[Abstract] *The internet is influencing and changing people's living and learning styles. The traditional means of mental health education has to be optimized and updated. This paper attempts to construct an integrated mental health education online and offline model which applies big data into the assessment of college students' mental health states and personalized mental health management, combines MOOCs and traditional mental health education courses. This model will improve traditional mental health, incorporating modern information technologies and the cognitive characteristics of college students in the information age.*

[Keywords] *big data; MOOCs; social media; mental health education*

Introduction

According to the requirements of the Ministry of Education of China[1], all colleges and universities are now equipped with full-time mental health teachers, with special places for psychological consultation, equipment and special funds for mental health education, and have carried out psychological counseling and mental health education in related courses. The contents and the ways of mental health education are also very much the same: i) investigating freshmen's mental health via psychological census, setting up psychological files for every student, tracking students with serious mental health problems; ii) setting up class psychological committee members (CPCM) to assist teachers to carry out mental health work, report students they've found who have mental health problems in a timely manner; iii) setting up psychological associations to carry out group activities for mental health education; iv) carrying out psychological counseling and mental crisis intervention work; v) establishing compulsory or optional courses for mental health.

However, current mental health education also has some problems such as: the predictive validity of mental health census is not high, carrying out 24-hour monitoring of students with serious mental health problems is very difficult, teachers and CPCM are not sensitive to some mental problems because of work and professional background limits, some students are reluctant to seek professional psychological help, and mental health curriculum teaching methods need to be updated. In addition, with the popularity of the internet and smart phones, great changes have taken place in the lives and learning styles of college students. Mobile phones have become the most intimate partners of college students, the network has become the first target for help when college students encounter problems in learning and life, social media is the primary place for social activities, and network games and online videos have become their main entertainment source. The traditional pattern of mental health education also needs to adapt to the characteristics of contemporary college students' digital life.

The applications of big data, smart phones and social media in the field of health and education are providing new opportunities for mental health education. This article will explore the application of big

[1] The document of *"The basic construction standards of college students' mental health education (trail)"* (the Ministry of Education of China, 2011) has specific requirements in the construction of mental health education.

data technology into personalized mental health service, social media and mobile apps into mental health assessment and individual mental crisis monitoring, and computer-aided psychological treatment for college students. In addition, we will reform the teaching methods of mental health with the application of MOOC resources. On the basis of these aspects, we will try to construct an online and offline integrated model of mental health education.

Mental Health Assessment and Individual Crisis Tracking on the Basis of Social Media and Mobile Apps

Traditional mental health tests mainly use self-reported scales, such as SCL-90, SDS, and SAS, etc.; these tests for college students' mental health assessment have two main disadvantages. On the one hand, some students who have had psychological test experiences would conceal their symptoms. On the other hand, the mental health scales will lose their effectiveness after a certain time, while repeated measuring is unrealistic. The assessment based on social media and mobile apps can compensate for these two disadvantages of traditional psychological scales.

Young people usually release information about their status and mood, which will immediately reflect the psychological condition of the college students. Someone may even broadcast their wish to commit suicide through the internet. Since 2010, there have been 51 cases in total who have broadcasted their suicidal process (Li, Huang, Hao, O'Dea, Christensen, & Zhu, T., 2015, in press). Guan, Hao, Cheng, Yip, & Zhu (2015) investigated the users' characteristics from the Sina Blogging platform which is the biggest blog platform, analyzed the accounts' blogging behaviors and text characteristics, and built the blogging characteristics system of high risk suicide individuals. The system can evaluate the individual's risk of suicide in a large-scale and carry out real-time monitoring. Usually, when the individual has a mental health crisis, he/she will release abnormal behaviors and words in the network. If we can construct a set of index systems for mental health crisis of the individual's network behavior characteristics, using computer algorithms to cooperate with the psychological worker's monitoring, we will greatly improve the recognition rate of the individual's mental health crisis.

Besides social media, most college students use smart phones with a variety of apps (Seko, Kidd, Wiljer, & Mckenzie, 2014). The mental health apps have many functions such as assessing the mood, pressure, recording and monitoring of sleep, heart rate, blood pressure and other physiological indexes, as well as GPS positioning, and real-time remote communication, etc. (Luxton, McCann, Bush, Mishkind, & Reger, 2011). Mobile phone application software can be applied to monitor individuals' mental health crises, detect the emotional state in real-time, and remind them to take their medicine. Kim, Nakamura, Kikuchi, Sasaki, & Yamamoto (2013) used the app to detect an individual's changes in physical activity, in order to predict their risk of depression and provide early warning. A study found using a mobile phone app to remind the individual to take medicine can effectively improve depressive college students' adherence to their medication (Hammonds, Rickert, Goldstein, Gathright, Gilmore, & Derflinger, et al., 2014). An app called BeWell, through monitoring the individual's sleep status, physical activity and social interaction, provides feedback to the user, making the user aware of their current state of their body, so that they can take corresponding measures (Lane, Lin, Mohammod, Yang, Lu, & Cardone, et al., 2014).

Applying social media and mobile apps into mental state assessment and monitoring individuals with mental crises have two advantages: i) high efficiency – theoretically, the technology can undertake monitoring for all people by analyzing the detected results with computer software; ii) real-time

monitoring – recording the latest indicators of the body and mind, the individual's abnormal data is provided to regulators and users at the first instance. Using these technologies for school mental health assessment, combined with an enrolled freshmen psychological census, we can track individuals with abnormal scores, screen the entire school in mental crisis peak seasons, and monitor the individuals with mental crises in real-time.

Computer-Assisted Therapy

Although every university has established a psychological consulting room, equipped with professional counseling teachers, there are quite a number of students with mental problems who are not willing to seek professional psychological help. Failing to identify problems, time limits, fear of confidentiality and stigma are the major reasons why young people are reluctant to seek professional psychological help (Gulliver, Griffiths, & Christensen, 2010). When they encounter problems, young people are more willing to turn to network resources; two-thirds of teenagers turn to network when they run into mental health problems (Rickwood, Mazzer, & Telford, 2015). Ellis, Collin, Davenport, Hurley, Burns, & Hickie (2012) surveyed 1038 young people online, aged 16 to 24, and found that more than half them had sought help online, and were satisfied with the online help. Psychological service resources on the network, however, are intermingled with good and bad. College students lack discrimination ability, so offering school-based mental self-help resources is very necessary. We can build an online psychological self-service platform, and provide programmatic psychological problem solutions. Mitchell (2009) adapted a cognitive behavioral therapy for self-help psychological management program - *BEATING the BLUES* plan. The computerized CBT self-help intervention had a significant effect in reducing students' anxiety and depression symptoms. Meta-analysis confirmed the network-based interventions may be cost-efficient, accessible, and a less stigmatizing alternative to traditional face-to-face treatments delivered in mental health settings (Andrews, Cuijpers, Craske, McEvoy, & Titov, 2010).

In addition to not wanting to turn to a psychological consultant, consulting drops and the self-management within consulting sessions is another of the other main problems in psychological consultation institutions. Computer-assisted therapy is an effective way to solve these two problems. Clough & Casey (2011) indicated that mobile phones, personal digital assistants, biofeedback, and virtual reality assisted therapy would increase the communication between the therapist and clients, reduce drops, and improve the effects of treatment. Using mobile phones and other tools to assist the treatment can effectively increase the clients' treatment adherence (Proudfoot, 2013). Computers and mobile phones could be used as the main auxiliary tools in order to keep in touch with and track the clients.

Big Data and Personalized Mental Health Service

Big data has quickly obtained the attention in business, management, medical and other fields, and brought a revolutionary impact. In 2008, a paper in *Science* successfully predicted the flu outbreak by using the method of big data, analyzing the retrieved information from Google (Ginsberg, Mohebbi, Patel, Brammer, Smolinski, & Brilliant., 2008). The characteristics of big data are the "5v's": volume (quantity of data), variety (data from different categories), velocity (fast generation of the new data), veracity (quality of the data), and value (in the data) (Terzo, Ruiu, Bucci, & Xhafa, 2013). The characteristics of big data make personalized medicine and the Virtual Physiological Human (VPH) possible (Viceconti, Hunter, & Hose, 2015). After the appearance of big data technology, many scholars tried to build personalized medicine, and achieved great success. Chawla & Davis (2013) put forward the personalized

medicine of a patient-centered model and developed a system called Collaborative Assessment and Recommendation Engine (CARE) for personalized disease risk predictions. Through matching the individual with the database information of all diseases, the system can predict the disease which is most likely to develop, and what kind of treatment is suitable. The model can describe the patient's own disease risk profile and provide them with disease management and wellness plans.

The emergence of big data also makes personalized mental health services possible, because big data can analyze all of the available data. In the university, all the information of students' learning, making friends, consumption, sports, internet surfing and so on could be analyzed. We can predict the tendency of change of the students' mental statuses and forecast the group's psychological change. We also can carry on personalized analysis of mental and behaviors, and predict psychological changes, so as to provide personalized intervention. It is conceivable that if, for some reason one day, a classmate was in a bad mood, he/she will get more comfort messages from the school's big data platform, receive measures to regulate his/her mood, and reminders that his/her friends can provide caring and support. If the student is still depressed, and pretends to be happy, cries a lot, begins to have suicidal ideations, or browse suicide websites, then the big data platform will send a warning message to psychological teachers to intervene.

MOOC-Based Mental Health Teaching

Since Massive Open Online Courses (MOOCs) was raised in 2008, it has rapidly spread to many countries and regions of the world. The *New York Times* has called 2012 the era of MOOC (Pappano, 2012). In accordance with the young generation's characteristics of digital life, the MOOC platform can share resources of high quality mental health education, and provide students the ability to learn, anytime and anywhere, about emotion regulation, mental health knowledge and coping skills. The popularization of smart phones in particular, ensures the MOOC platform becomes a portable self-help tool for mental health.

Because smart phones have a variety of functions, it has become an indispensable tool for young people. No matter in class or after class, eating or at bedtime, students will use their mobile phones. The teachers can't stop students from using their phones. Bringing tools, such as mobile phones, into the classroom, learning network resources have become a trend of current teaching reform. Constructing a MOOC-based mental health class teaching mode is imperative. Hence, we advocate the Flipped Classroom teaching-based MOOC for mental health class teaching. The Flipped Classroom is a teaching mode for teaching after learning (Hawks, 2014). Students learn knowledge online first, and then internalize the knowledge and expand the application in the classroom. It subverts the traditional teaching process. In the traditional teaching process, knowledge is taught by teachers in the classroom, and the knowledge internalization requires students' practice after class. Accordingly, in the flipped classroom, students learn knowledge online first, and then internalize the knowledge under the help of teachers and classmates' assistance.

The students complete the MOOC resources learning online before class; these learning materials include video lesson learning materials, dubbing PPT, and rapid tests, etc., which are generally 3 to 7 minutes long. These materials are convenient for students to study at any time, and they can also participate in the learning interaction BBS discussion, and mark mutually homework, etc. In the class, teachers give feedback about the tests, interpret difficult knowledge, organize group discussions, and display homework, etc. Because of its strong vitality, flexibility and interactivity, the teaching model conforms to the characteristics of contemporary students and is popular among them.

Online and Offline Integrated Model of Mental Health Education

Based on the above analysis, we raise the Online and Offline Integrated Model of Mental Health Education (see Figure1).

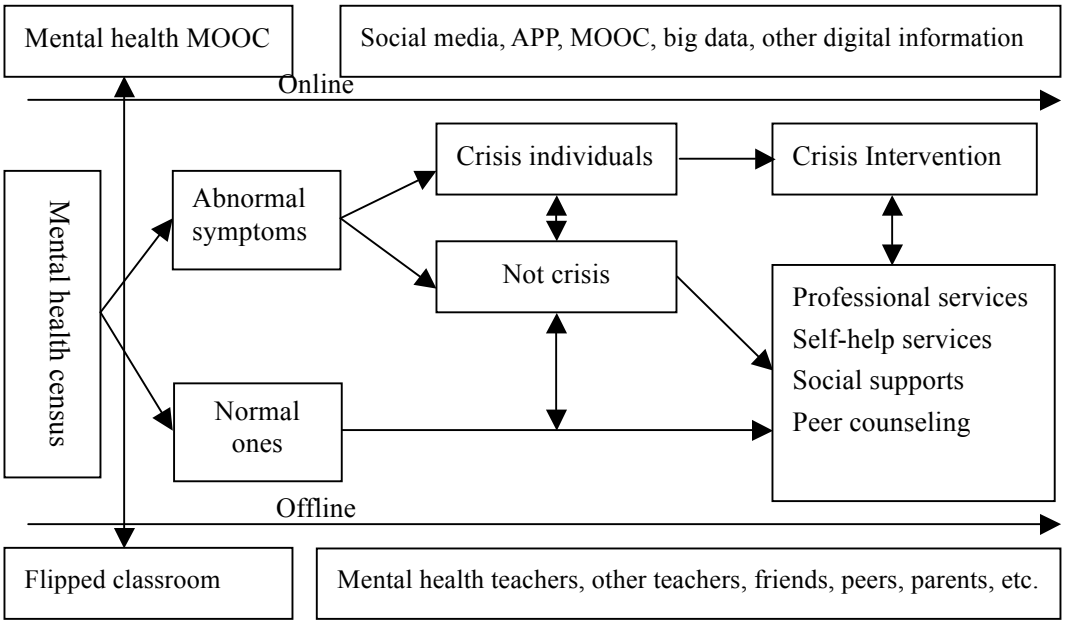

Figure 1. **Online and offline integrated model of mental health education.**

The basic logic of the model is as follows:

1. As *Figure 1* shows, the model works on the basis of two main ways, **online and offline**. Online mental health education is carried out through all kinds of internet tools, such as social media, apps, MOOC, big data and other digital information. Offline means traditional methods.
2. All students take part in the mental health census when they are freshmen. The mental health teachers will track and carry out intervention for the students with abnormal symptoms.
3. All students get mental health knowledge and skills from the flipped classroom, which is based on MOOC.
4. After the two processes, students can use the self-help mental health resources online. They can also seek online psychological counseling, peer counseling, and social support.
5. If the online resources are useless, the students can seek the professional help of psychological consultants. By the way, the psychological consultants will work with the clients through all kinds of tools analyzed above.
6. Most importantly, online and offline methods will be very helpful to evaluate the students' mental statuses through the big data analysis of a great deal of information.
7. For those students with serious mental problems, the mental health teachers will monitor their mental statuses and behaviors through social media, apps, all kinds of digital information, as well as classmates' observations.
8. Because mental status is dynamic, students with serious symptoms can recover and normal students may get into trouble during their college lives.

After freshmen enroll, they will take comprehensive mental health tests. For those students with a history of mental illness, suicide or self-wounding tendencies, mental health teachers will track them during their entire four-year college life through face-to-face interviews and online assessments. If someone is in trouble with mental problems, both online tools and offline methods may detect the signals, and action can be taken. Normal students can use *Professional services, Self-help services, social supports and Peer counseling,* according to their needs. *Professional services* are psychological counseling services provided by fulltime mental health teachers. *Self-help services* include a great deal of knowledge and skills about how to deal with mental troubles from the internet, apps, and books. *Peer counseling* is provided by students who have been trained in how to help. *Social supports* include the students' parents, friends, teachers, lovers and so on. Students with mental crises may vary during their college lives. Both online and offline methods will monitor all students, and if anyone meets serious mental troubles he/she would get help from these resources.

Almost every college in China has established mental health education curriculum. In our model, as mentioned above, the curriculum could be carried out in a *Flipped Classroom,* based on MOOC.

Mental health census and mental health education curriculum are mainly concentrated in the freshman year. Psychological consultation, mental self-help, mutual assistance and psychological assessment based on the network and artificial observation are sustained during their entire university career. Mental health resources from the network and apps are useful for students throughout their lives.

Conclusion

The 21st century is the era of information, and education simply relying on traditional offline methods can not keep up with the pace of the times, and also cannot be adapted to students' real lives. This paper reviewed the implications for mental health from relevant researches on social media, smart phones, big data, and MOOC, etc. and suggested that a mental health education model should use information technology in order to improve efficiency, and conform to the characteristics of modern college students' digital lives.

The model's main context is "mental health evaluation – mental health teaching – psychological counseling and psychological crisis intervention – self-help and mutual aid", which integrates traditional education means and information technology to construct a mental health education model with online and offline integration.

The core of mental health education is based on the students' mental health status and different needs, so the mental health assessment is particularly important. Mental health status is dynamic. To accurately understand the student's psychology, the mental health census at the student's entrance to college alone is not enough. Real-time monitoring based on social media, mobile phone apps and students' electronic records make dynamic monitoring possible.

Mental health teaching with the *flipped classroom* based on MOOC conforms to the requirements and characteristics of contemporary college students. It can improve the classroom teaching's efficiency, and improve the students' interest in learning. The role of the offline workers is also emphasized by the model because all the work of mental health education needs to be eventually carried out by humans.

However, this model is only theoretically being explored. Further refinement and specific operation steps should be developed in future research. Moreover, an empirical evaluation about this model is also needed in the future.

References

Andrews, G., Cuijpers, P., Craske, M. G., McEvoy, P., & Titov, N. (2010). Computer therapy for the anxiety and depressive disorders is effective, acceptable and practical health care: A meta-analysis. *Plos One*, *5*(10), e13196.

Clough, B. A., & Casey, L. M. (2011). Technological adjuncts to enhance current psychotherapy practices: A review. *Clinical Psychology Review, 31*(3), 279-292.

Chawla, N. V., & Davis, D. A. (2013). Bringing big data to personalized healthcare: a patient-centered framework. *Journal of General Internal Medicine, 28*(3), 660-665.

Ellis, L. A., Collin, P., Davenport, T.A., Hurley, P. J., Burns, J. M., & Hickie, I. B. (2012). Young men, mental health, and technology: Implications for service design and delivery in the digital age. *Journal of Medical Internet Research, 14*(6), 338-346.

Ginsberg, J., Mohebbi, M. H., Patel, R. S., Brammer, L., Smolinski, M.S., & Brilliant, L. (2008). Detecting influenza epidemics using search engine query data. *Nature, 457*(7232), 1012-1014.

Guan, L., Hao, B., Cheng, Q., Yip, P. S. F., Zhu, T. (2015) Identifying Chinese microblog users with high suicide probability using internet-based profile and linguistic features: Classification model. *JMIR Mental Health*, *2*(2), e17.

Gulliver, A., Griffiths, K., & Christensen, H. (2010) Perceived barriers and facilitators to mental health help seeking in young people: A systematic review. *BMC Psychiatry*, *10*, 113.

Hawks, S. J. (2014). The flipped classroom: now or never? *Aana Journal, 82*(4), 264-269.

Hammonds, T., Rickert, K., Goldstein, C., Gathright, E., Gilmore, S., & Derflinger, B., et al. (2014). Adherence to antidepressant medications: A randomized controlled trial of medication reminding in college students. *Journal of American College Health, 63*(3), 204-208.

Kim, J., Nakamura, T., Kikuchi, H., Sasaki, T., & Yamamoto, Y. (2013). Co-variation of depressive mood and locomotor dynamics evaluated by ecological momentary assessment in healthy humans. *Plos One, 8*(9), e74979.

Lane, N. D., Lin, M., Mohammod, M., Yang, X., Lu, H., & Cardone, G., et al. (2014). Bewell: Sensing sleep, physical activities and social interactions to promote wellbeing. *Mobile Networks & Applications, 19*(3), 345-359.

Li, A., Huang, X., Hao, B., O'Dea, B., Christensen, H., & Zhu, T. (2015, in press). Attitudes towards suicide attempts broadcast on social media: An exploratory study of Chinese microblogs. *Peer J*.

Luxton, D. D., McCann, R. A., Bush, N. E., Mishkind, M. C., & Reger, G. M. (2011). mHealth for mental health: Integrating smartphone technology in behavioral healthcare. *Professional Psychology Research & Practice, 42*(6), 505-512.

Mitchell, N. (2009). Computerised CBT self-help for depression in higher education: reflections on a pilot. *Counselling & Psychotherapy Research, 9*(4), 280-286.

Proudfoot, J. (2013) The future is in our hands: The role of mobile phones in the prevention and management of mental disorders. *Australian & New Zealand Journal of Psychiatry*, *47*(2), 111-113.

Pappano, L. (2012, November 2). The year of the MOOC. *New York Times*, p. A3.

Rickwood, D. J., Mazzer, K. R., & Telford, N. R. (2015). Social influences on seeking help from mental health services, in-person and online, during adolescence and young adulthood. *Bmc Psychiatry, 15*, 40.

Seko, Y., Kidd, S., Wiljer, D., & Mckenzie, K. (2014). Youth mental health interventions via mobile phones: A scoping review. *Cyberpsychology Behavior & Social Networking, 17*(9), 591-602.

Terzo, O., Ruiu, P., Bucci, E., & Xhafa, F. (2013). Data as a Service (DaaS) for sharing and processing of large data collections in the cloud. *Complex, Intelligent, and Software Intensive Systems (CISIS), 2013 Seventh International Conference. IEEE*, *8174*, 475-480.

Viceconti, M., Hunter, P., & Hose, R. (2015). Big data, big knowledge: Big data for personalized healthcare. *IEEE Journal of Biomedical and Health Informatics*, *19*(4),1209-1215.

The Absence and Location of Youth's Sense of Meaning in the Period of Social Transformation

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[Abstract] *As technology rapidly increases, the quality of human life is improving and living space is expanding. Faced with the breaking of the traditional cultural world and the complexity of modern life, many youth's substance desires have been seduced and their spiritual space is continually squeezed. They are so tired that they lose their life meaning. This kind of phenomenon may produce a sense of emptiness. In the period of social transformation, a youth's pointless life can include chronic alcoholism which is harmful to mental growth. Youths' deep sense of meaninglessness is mainly caused by the difficultly of self-identity, the plural social-values and the loss of the meaning of life. There is a feasible way for youth to promote their sense of meaning by establishing a professional social support system, constructing a dominant value order, and having the feelings of life.*

[Keywords] *sense of meaning; meaning of life; youth; the period of social transformation*

Introduction

Since ancient times, it is the eternal topic of human beings to explore life. What does life mean? How should we spend our time? How can we make our lives valuable in the vast universe? These reflections open the way for young people to explore the meaning of life. In the pursuit of the meaning of life, the young people have the mind to settle and the spirit of the transcendence. For individuals, a man's life is a process that can neither be copied, nor repeated. In the long river of time, we only have one life opportunity, the precious which can be imagined.

With the rapid development of technology, the field and space of human life have become enriched and expansive, which has created the conditions and opportunities for improving the quality of life. However, the material living standard has improved in recent decades, while happiness has not. In the period of social transformation, youth living in China enjoy the material civilization, but they also carry a huge spiritual pressure. A large number of young people are being shrouded with anguish, emptiness, confusion and other negative emotions, which often produces a meaningless sense of life, leading to the emptiness of values. The hopelessness of life meaning and the negation of their values have led to the phenomenon that some young people appear to give up their own lives and ignore the lives of others. Life is one of the most basic and important rights in all of the citizen's personal rights. Any other rights are just like the castles built in the air if care and respect are deprived.

The Main Performance of the Sense of Meaningless in the Period of Social Transformation

In a rapidly changing world, faced with the breaking of traditional cultural world and a complex modern life, many youth's substance desire have been seduced and their spiritual space has been continually squeezed. In the struggle of the material and desires, they are so tired that they lose their life meaning and generate a sense of meaningless.

The rapidly changing society has deepened youth's fatigue and frustration. The process of modern society is becoming more and more quickly. More and more areas have been involved and information is ever-changing. Fast, diverse, and variable are not only the external features of modern society, but also the internal state of modern people. The slow and leisurely life conditions of the past traditional society are gone. Faced with the compression of time and the acceleration of the lifestyle, youth always feel fresh and shocked, and at the same time, they also feel the tension and stress. They are not only going to learn and adapt to the modern way of life, to constantly think of transformation, knowledge adjustments and updates, but also to seek out and acquire more material and spiritual enjoyment. What's more, they have paid more and more attention to external targets and others' evaluations. When the youth living in China feel that their social transition period's limited time, energy, and space can't grasp the social life which has changed so much, they are like sitting on a high-speed train. Their main characters will be forced to follow the objective environment. For individuals, they feel less ease and more powerless than others and even for the world's understanding. Many young people are in their efforts to reach their target values. But after a short period of joy, they become quickly surrounded by the flood target value, making them deeply exhausted and more frustrated.

The spiritual lives of the materialized lead to the sense of emptiness and debris of the youth. Material life is the foundation of the spiritual life and the basis for the existence and development, which determines that it is difficult to measure and ponder spiritual life from the material life. However, it is easy to find people's own materialized life if it has an over-reliance on and the pursuit of material things. In this regard, Marx had a profound description, "All our discovery and progress, it seems that the results make material force has rational life, and a man's life is alienation in dull material force" (Marx & Engels, 1972, p. 79). The growth of human spirit direction has been impacted with highly developed modern material civilization. The sense of meaninglessness will be filled with people's feelings, and can even lead to seriously ignoring the pursuit of life. "Under the background of the late modernity, personal sense of meaninglessness and that kind of life did not provide the feeling of anything of value, because of the fundamental psychological problems" (Maslow, 1987, p. 400). A materialized tendency penetrates into the relationship between people and things, showing an unlimited possession to achieve happiness. People are constantly seeking profits, desire and other material wealth. Spiritual life, such as morality, faith and ideology, was suppressed because it's not a commodity and does not have a value. Driven by material benefits, there is a phenomenon that exists varying degrees to the primary pursuit of material value-based items and ignore the spiritual values of bias in today's society. The rich are seen as the winners in society and are often admired and worshiped. The supreme respect and worship of money, the sole object, has cornered the Chinese people to ultimate anxiety and fickleness. "Fast-food success" and "Instant style fame" have been advocated. Some young people have a sense of spiritual emptiness and fragmentation of life when they put their value and meaning of life on the basis of the pursuit of money and other unscrupulous material wealth, ignoring the pursuit of a better spiritual life. Nowadays, more and more young people have no time to feel and enjoy life in today's fierce competition. Once suffering from the

blow and the setback, they are likely to be undergo different degrees of psychological problems, and even head to self-destruction more seriously.

The interpersonal relationship diaphragm brought by the social transformation has added to the young people's sense of loneliness and unreal. Under the influence of a pragmatic philosophy on life, the factor of interpersonal emotional relationships are weakening, and utilitarian consciousness is increasing, sometimes even behaving as a naked relationship of mutual advantage. When materialization penetrates people's lives, relationships are saturated with economic exchanges and the principle of equivalent exchanges. When dealing with people, what they consider first is whether the other side could give them anything good or how they can benefit from each other. Only the person who is able to bring a benefit or has a useful talent will become their contact. Thus, interpersonal relationships show as an economic association, which are decided by whether they can benefit from each other. The light of human nature, such as love, cooperation and care, etc., is concealed.

With the development of modern technology, communication is becoming more and more convenient. From the telephone, fax to email, which brings people a new experience, but at the same time they have also gradually faded in the inherent use of language and the rich emotion of text, losing eye communication and spiritual exchanges when in face-to-face contact. The popularity of the network makes people's work, study and lives more and more "intelligent", and it can also meet their needs, on the one hand. But it also leads people to become unaccustomed to both interpersonal and emotional communication. As we all know, many teenagers are becoming addicted to the virtual network world and may even refuse to return the reality of life. Finally, they lose their ability in social life.

Reasons for the Absence of Youth's Sense of Meaning in Social Transition Period

In the period of social transformation, the youths' pointless lives are including the likes of chronic alcoholism, which is harmful to their mental growth. The psychological mechanism of the lack of a sense of meaning on young people has lead to investigation from the following three aspects.

First, the difficulties of self-identity on young individuals are increasing. As a critical period of life, an important task for the youth is to be self-reassured and have a self-identity in order to form a stable personality system. In the famous psychologist Erickson's opinion, it is usually relatively smooth to complete this psychological task in a traditional society where the traditional society maintains a high homogeneity and stability. In contrast, modern society has demonstrated heterogeneity and variability. it is not easy for the young to establish self-identity clearly and quickly. In the process of modernization, the psychological development period of the youth's mental development and their social transformation are just intertwined, making psychological contradictions of young people exist in all levels of youth's attitudes and mentalities, which further increases the incoordination between their external environment and internal growth in their psychological development.

Second, youth social values are presented in a blank or in a plurality of states. In the case of growing social transformation, there have been some confusing phenomena in the values and social mentalities of youth. The explanation could result from two reasons. One reason is the loss of specification during social transformation. Some of the old norms or standards can't meet the needs of social development and economic growth while the new norms or standards are not established completely. The second point is the multiple difficulties caused by the standard. In the contemporary society, politics, economy, and culture, including language media, have been brought to the commercialization of public order, and the youth will inevitably come into contact with a variety of values and standards. There are many young

people continuing to trend values of materialization. The lack of sense in human beings is an issue of mind and spirit. What values are needed to pursue survival and development? What is the highest value? If these values reflected behind these issues deviate from the core value system, life will lose navigation and the crisis of the spiritual realm will appear.

Third, the search for meaning is a human's way of life. On the face of it, youth's deep sense of meaninglessness comes from the plight of survival, but the fundamental point of view is from the loss of the meaning of life. "The existence of man is never pure existence, it always contains the meaning. Significance of the degree is inherent in life" (Heschel, 2009, p. 46). As early as the mid-20th century, Austrian psychologist Dr. Victor Frank had proposed that there is a crisis of survival setbacks in modern society that are kneaded by a meaningless sense of emptiness. The emptiness made of survival is actually the reason why modern people do not see the meaning of life. Youth living in this social transition period are facing a great rich material life and have forgotten the objectification of tools exist, which are not used to create a rich life or show the senses of endless pursuit of enjoyment and material desires, but to feel a sense of meaning and a sense of the value of life. These realities will bring a sense of meaning that has been missing in the youth. Youth can't enjoy spiritual satisfaction and material happiness. Meaning is both the product of human practice and the purpose of the requirement of life. This purpose abandoned the biological instinctive impulse to pursuit a higher level of significance on the basis of survival and life.

Suggestions and Conclusion

During the period of social transformation, the youth not only taste the rich material life, but they also feel colorful life changes. Each personal growth is a process of constantly enriching their life. When the youth build their own material home, they also need to focus on building their spiritual home.

Firstly, we should establish a strong social support system. Social support is the affect that person gets from social contact, which can reduce psychological stress, relieve tension and improve social adaptability. The sound development of youth values and social psychology needs to effectively address a variety of survival and development. In the transition period, the impact of environmental factors in the growth of the younger generation has become more complex than ever, people need to be a concerted effort to solve many problems from all aspects of society. Therefore, it is necessary to establish a strong social support system that is a cooperative body that works with the family, school, community, media, community groups and government and other aspects of composition. In general terms, the youth urge for social support which includes interventions to promote mental health, psychological crisis, the mitigation and elimination of poverty, design career planning, a timely job, and successfully enter the job market information, etc. In addition, young people must optimize the use of individual social support. Some youth stay at a psychologically "high" state for a long-term. Physical and mental health is affected by excessive accumulation of negative emotions. Faced with difficulties and setbacks, people do not know how to seek help. It is an immature coping method to bear all the pressure.

Secondly, we should construct the dominant social order of values. People's sense of meaning is closely related to the order of value (Zhang, 2012). The dominant social order of values is the dominant, ideal and desirable order of values which gets general agreement on the development and has a role in promoting moral civilization. Construction of the dominant order of values does not require that the value of the order for each person be consistent, but the premise of respecting diversity and maintaining the value of the individual order is not contrary to morality or jeopardize the social order in the public domain, creating better order value that can better reflect people's freedom ideal of comprehensive

development. The value of the order brought by the model brings recognition to actively establish and practice core values, making the dominant value in the field of public order affect the heart of youth and guide their development in the direction of a meaningful existence. The order value affects individuals to reset in the situation where meaning and value is missing. In an ideal value order, instrumental rationality and value rationality have achieved a reasonable unity, and the youth would no longer blindly be influenced by material interests and stimulating consumption, but would gradually get the direction to survive of a sense of meaningful and valuable from their real needs.

Thirdly, we should cultivate a positive emotional life. The youth's cognition, acceptance, affirmation of their own lives, the treasure, compassion and caring for others and the whole world of nature should form their unique emotional life. Emotional life is enthusiastic, and high-spirited caring, which is the motivational power of a happy life. Enjoying life is the highest level, which makes young people feel warm and have lasting joy from their own meaningful and worthwhile life. To actively demonstrate an optimistic concern and happy feeling does not mean to reject suffering. To take care of the suffering of young people on the negative perspectives to enhance their experience of suffering is to deepen their emotional life of proper meaning. The experience of suffering and surpassing makes people explore the depths of life which will lead and inspire the potential of youth and mobilize their own individual vitality. The pursuit of happiness and escape from suffering are human nature, but when disaster, misfortune and adversity inevitably arise, people often demonstrate the nature of the subject's personality, strength and dignity. People's abilities to experience, knowledge structure, character and family background are different. It is better for youth to combine their social environment and their own advantages to find the coordinates of their own life. At the same time, they should take a correct view on the setbacks and difficulties they encounter, and overcome their feeling of nothingness caused by their short life and the social changes. To venture social challenges and get the joy of suffering, the youth will live a full and wonderful life.

References

Marx, K., & Engels, F. (1972). *Complete works of Marx and Engels, (3rd Volume)*. Beijing: People Press.

Maslow, A. (1987). *Person's potential and value: Humanistic psychology translation corpus,* (p. 400). Beijing: Huaxia Publishing Company.

Heschel, A. J. (2009). *Who is man.* Guiyang: Guizhou People's Press.

Zhang, Y. (2012). The order of value and the absence and location of people's sense of meaning. *Oriental Forum*, 36-39.

Study on the Moral Sense and Ethical Conduct Changes of Female College Students during the Social Transformation Period

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[Abstract] *Currently China is experiencing a social transformation. The rapid development of society has brought obvious changes to people's moral sense and ethical behaviors. Modern female college students are standing in the forefront of the social transformation, so they are most likely to be affected. The condition of their moral sense and ethical behavior will greatly influence the result of the transformation, and thus, directly affect the overall qualities of women, as well as the Chinese modernization construction. This thesis tries to explore the importance, general change situation, causes of these changes, change trends and other aspects to explore the moral sense and ethical behaviors of modern female college students.*

[Keywords] *social transformation; female college students; moral sense and ethical behaviour; change; explore*

Introduction

Everything in the world is changing at any given time. Everyone has to face change, as change is the survival state of reality. Changes can occur in any aspect, including the world view, view of life, value system, consciousness, emotions, attitude, behavior, and way of life. Changes can be positive or negative, large or small. At present, China is experiencing many changes. As Dickens put it in *A Tale of Two Cities*, "It was the best of times, it was the worst of times" (Dickens/Sun Fa Li translated, 2008) About its advantages, people can understand them very easily. However, for the drawbacks of this time, they mainly refer to the hard transformation, during which various challenges and difficulties are mingled. In addition, the public are suffering from the pains of the transformation, concept collision, profit friction, worse idea upheaval and increasing development changes. Changes lead to smoothness and turns may lead to prosperity. Since the Eighteenth People's Congress, China has stood on a new starting point and its economy has faced reforms and transformation.

During this transformation stage, the rapid development of the society has obviously changed people's moral standards and ethical behaviors. The condition of their moral sense and ethical behaviors will greatly influence the result of the transformation, and thus, directly affect the overall qualities of women, as well as the Chinese modernization construction. Following, this paper tries to explore the importance, general change situation, causes of these changes, change trends, and other aspects to explore the moral sense and ethical behaviors of modern female college students, to promote female students to become the leading force of the social transformation.

Literature Review

There has been some research on the ethical issues of female college students at home and abroad. China HowNet online, searched by the topic "Moral Sense and Ethical Conduct Changes of the Female College Students during the Social Transformation Period", returned less than 10 records, including "Students Ethical Issues and the Education Measures during Social Transformation Period" by Xin De Juan, to

clarify that social transformation is not only that the material aspects of society have undergone tremendous changes, but also the morality of college students has been a huge impact (Xin, 2012); master's thesis in "Ethics of Contemporary Female University Students' Sexual Morals" by Li Li in Nanhua University, states that women students' sexual morality is in a huge development and complex dilemma (Li, 2013). These studies are still very limited, and this topic is still a blank study from the "change" perspective of female college students' moral consciousness and moral behavior in the society transition directly, of which the author is willing to try to discover.

Importance of Grasping the Moral Sense and Ethical Behaviors of Female College Students During the Social Transformation

People's moral sense and ethical behaviors organically make up their moral qualities, which are the basis of their moral personality. Under the dominance of certain moral consciousness, ethical behaviors of female college students behave differently. Their behaviors are related to other people's profits. Their behavior in practice is the objective standard to measure female college students' ethical levels.

With the deepening of reform and opening up and development, Chinese society is in an important transitional period from an Agriculture, closed, one dollar, traditional society to an industrial, open, pluralistic, modern society of change, with a rapid process of development of the country. There have been a series of issues such as the distribution of wealth, coupled with the rapid development of mobile Internet, networking and cloud computing and other social networks, and information technology is affecting every aspect of people's lives. Great changes have taken place in the social materials level, but it has severe psychological shock and anomic behavior, bringing some pressure to people's psyche and behavior, so that people's ideas and values also had a deep selection level of the collision (Notice, 2015).

There are more collisions between people's idea concepts and value choices. During the transformation period, the moral sense and ethical behaviors of female college students are inevitably influenced by the market economy. Nowadays, there are more and more female college students who are outstanding persons among women and important components of female talent resources. As one of the civilization progress symbols of the time, female college students are the hope of the country. They have shouldered great responsibility. It is their duty to cultivate the next generation and realize the Chinese Dream. Their moral and psychological health has a great impact on the promotion of the entire female quality and the construction of bisexual harmony. Standing on the forefront of the social transformation, they are considered the backbone forces and are most likely to be affected by the transformation from various aspects. During their college years, the students are in a key point of moral concept formation. Thus, their moral conditions directly decide the result of the social transformation (Xiang, 2012).

Although the mainstream of their moral consciousness and manners is positive, as the backbone force to build socialism with Chinese characteristics, their moral consciousness and manners must make more positive changes so as to adapt to the development of the society. In these modern times, it is quite important to make an overall analysis and grasp their moral consciousness and behaviors. We aim to guide its development.

The General Changing Situation of Female College Students' Moral Consciousness and Behaviors During the Transformation

During the transformation, the modern female college students have had many new characteristics. They long for success and are ready to make contributions for the building of socialism. They are aware of their

important role in the society and are always thinking of their futures of their motherland. In addition, they have strong sense of crisis and sense of mission; they have strong self-awakening. Because of this, their value concepts have become more multivariate and more realistic. They pay more attention to profits and their moral behaviors are in a more popular style. Generally speaking, the honesty and morality situation is good. Both the public morality and family moral conduct are good. People approve the importance of honesty. In 2011, the well-known “work emperor” was invited to Nanjing Forestry University to deliver a speech entitled “My Success Can Be Copied”. He was faced with an angry female student who claimed that people without moral qualities should not stand on the university platforms. From this event we can easily see that the female college students are not lacking in pressure and they are realistic and pragmatic (Wang, 2011).

Recently, a post became popular in the network – “Sichuan Normal University female students to the community by funding two million to repay their parents upbringing." Ancients “prostitute buried father” the harvest is moving full, now people “Rather Than bondage” have seen a lot of criticism. Some experts said that this idea is extremely tricky, there is a something for nothing suspect. There are user friends that are “filial, there are many ways, like whatever.” It’s not that people do not have compassion, but compassion is worried about consumption, but fearing it would encourage the entire community to do nothing, while thinking flourishes. It seems that it is difficult to speculate whether some of the female students have moral consciousness and behavior in real life sometimes (Shin, 2015).

Here, we hope to pay more attention to the prominent problems of female college students during the social transformation. The civilization qualities of some female college students make people feel anxious. They even lack basic moral common sense. Their responsibility concept has been badly contorted (Wei, 2010).

For some, their ideology and morality state are reversed, and their dreams are vague. Others regard the realization of self-value as the core, being very individual-based. In the transformation process the self-awareness of female college students is increasing. They want to be free from the custody of society and family as soon as possible. They even cry loudly to society and ask for people to trust them. However, their discrimination ability is still very weak and they lack the ability of self-control. Without proper guidance it is hard for them to tell good from evil, honesty from hypocrisy, justice from prejudice, honor from humiliation, and nobility from cullion. In this way, their moral-awareness has become vague and they often make moral mistakes.

They pay excessive attention to the preocular chances and development, ignoring their life goals in the long run. Many female college students think high income and a stable life status are the most vital, so they desert their own responsibility to a certain degree. For some, they are even caught up by extreme individualism.

In terms of profits and dedication, they emphasize the latter. They hold the single-faceted concept that personal donation should be equal to the profits. Some don’t even have the basic devotion or spirit to work.

In terms of personal civilization conduct, some overemphasize the randomness of individual conduct. They believe randomness is being natural and unrestrained. They look down upon morals and disciplines and think that to ignore them is to display their personality.

While contacting the opposite sex, they only emphasize the emotional experience and long for physiological need. They often neglect the duty and responsibility of love. Even a very few disobey the rules and regulations published by the schools. They think to limit their sexual behaviors is actually to

limiting their freedom. According to a report published by Guangzhou City Women's Federation, in this city about sixty percent female college students dream of marrying into the affluent second generation. In many universities, more and more female college students hope to get married as soon as possible. It is common that they want to change their life with the help of marriage. They lack the pioneering spirit which was common for their parents (Li, 2010).

In the aspect of the maintaining public interest, many female college students ignore it, which can embody the college students' sense of duty and degree of civilization. The problems of honesty have become worse. A fairly large number of female college student are unable to catch the connotation of honesty. They are always self-contradictory when facing issues related to honesty. Part of them lack honesty in study, interpersonal communication, love, economic life, net life and interviewing for a job. Some lack self-discipline: They sleep, play games or watch movies in class; they contradict the teacher, ruin public property: some even cheat in exams: some jump the queue in the canteen or spit everywhere and destroy the public landscaping.

The education of some families is far from enough. They often spoil their children. Some children are used to seeing themselves as the center of the family. They take it for granted that they are the center of the entire family and they, of course, should be given special treatment. As time goes by, they become even less grateful. They no longer respect the old and love the young. They become cold and selfish. In addition, they are reluctant to work hard. Finally, many bad habits have gradually formed.

Causes of Moral Awareness and Ethical Behavior Changes of Female College Students During the Transformation

Morals conducts are usually affected by moral consciousness and moral judgment. The moral consciousness of the modern female college students tends to show individualization, their moral judgment tends to be diversified, and their moral conducts are changeable. While choosing a moral example, they moral examples they worship are transferred into hotspots and their grades. During the transformation, the completely new social changes will have an obvious impact on these students. Due to some negative social influence and the multivariant concept consciousness, some students' moral consciousness and conducts are dislocated. Female college students are in the key period of shaping their moral views gradually. Though they have the approval consciousness of the social ethics standard, it is in fact not stable. This leads to the contradiction of the moral consciousness and moral conducts (Wu, & Guangdong, 1999).

The shaping of their moral consciousness and moral conduct is not only closely related to their own characteristics, but also to their cultural backgrounds, outer surroundings, college morals and psychological health education. It is related to the coeducation of family, school and the society.

Moral mentality is a part of moral consciousness and the psychological state of people. It is shaped in the moral practice and is the manifestation of the social moral emotions and moral relationship in people's mental process and mental characteristics. Consistent with many psychological factors such as moral emotions, will and consciousness, it has a great impact and dominance power on people's moral conducts (Wang, J., 1992).

When talking about family-related factors, we find that many parents fail to set a good example for their children in terms of the talent moral values and cultivation of the children's moral characters. The parents are negatively influenced by the wrong education concept that girls should be raised in a wealthy way. Some other education methods that include threatening, bribery, guarantees and satire also guide the

family education in the wrong way. Some parents would rather lead a hard life themselves in order to make their children study and live comfortably and gracefully. They almost meet all the demands of the kids and seldom ask about their detailed consumption, which has encouraged the children's bad habits such as high level of consumption, parading their wealth and hankering after vainglory in a disguised way.

The schools should also take the responsibility. The schools fail to provide female college students with enough mental health education. They fail to encourage the girls to educate themselves. The schools need to do more work to educate students in an all-dimensional way. They must take more measures to stimulate the study interest of the female college students, enhance their political ideological quality, and establish the correct Three Viewpoints, set up the right view of marriage and the outlook for honor and dishonor. Having been influenced by the exam-oriented education for so many years, many schools have overemphasized the learning progress of the students but have neglected students' moral consciousness and moral conduct progress. Many universities are guided by wrong concepts. They prefer majors to humanity. The phenomenon that some universities are too open also inevitably leads to the rapid moral changes of the female college students. It is not surprising to see lots of short-term house renting and exam cheating help on the advertisement board. A college student who has never had a boyfriend or a girlfriend is labeled an antique…At present, the psychological problems of college students are very serious in their scale and degree. Many can't even continue their studies. An increasing number of college students have suspended their schooling or quit their studies due to various mental problems. Some college social science teams fail to cultivate and expand the socialist core values and don't succeed in spreading the advanced socialism culture. They can't adhere to the correct direction, cry the main vocal or spread the positive energy. They take the western education for an example under the wrong preconception. Some colleges need efficient citizenship education, which leads to students' lack of moral awareness and dependence. The students are not responsible or polite. They have low cultural accomplishment. It seems that students are a container for knowledge and skills.

In the aspect of social elements, it is common that people only aim to do the economic construction. They do this at any cost, but neglect democracy and law building, spiritual civilization development and ecological civilization. They are doing far from enough to maintain the social justice and protect women's rights. Being influenced by the Open and the Reform and market economy, the female college students face more employment pressure. On the one hand, the girls have a more initiative spirit. On the other hand, they become more realistic when facing marriage and employment. In the modern times both the domestic and the international unhealthy ideology can't influence the female college students in a proper way. Thus, they may be negatively affected by politics, economy and culture (Lei, 2006). Internet culture is also an important factor that influences the female college students' moral consciousness and conduct. Many of its characteristics including virtuality, liberty, openness, anonymity and diversity make some students indifferent and immoral. Eventually they display certain personality dissimilation.

Tendency of the Moral Consciousness and Conduct Changes in the Transformation

Society is developing, and so is the education culture. The moral consciousness and conduct of female college students are also changing at any time. With the cultural atmosphere building, the development quality of the female will be obvious. Accordingly, it will promote the social development. However, nowadays the Chinese cultural education environment still has many elements limiting the development of the girls' moral consciousness and conduct development. In a certain degree and period, this problem

and the contradiction will be more serious. However, at last the organic unification will be achieved (Feng, Huimin, & Lie"an, Cai, 2011).

This is the best and the most beautiful time for women's development (Zhang, 2015). The development of the female, means the development of the whole society (Yan. 2014). This is especially true for the female college students. With more positive family and social influence, as well as the establishment of the college mental health education model which can meet the demands of the development in the transformation, the moral consciousness and conduct of female college students will conform to the times and develop in a proper way. The female college students will of course adopt the good points and avoid the shortcomings. They will better display their subjective initiative, become more independent and become the forerunners in the process of the transformation.

Conclusion

During this Social Transformation Period, rapid development and progress of society have significantly changed students' moral sense and moral behaviors. There are more problems due to the background of society and their own reasons as a result of female students ethical awareness and behavior, but the overall is positive, and they will exceed the times, and become an important force for social transformation pilot.

References

Dickens, C. (2008). *A tale of two cities.* F. L. Sun, (trans.) Nanjing: Yilin Press.

Feng, H., & Lie"an, C. (2011). A rustic opinion of the cultural education environment for the female Chinese development. *Wuhan University Journal (Philosophy and Social Science Edition)*, *6*, 175.

Lei, D. (2006). *Study on the moral education issues of the female college students.* Central China Normal University.

Li, L. (2013). *Ethics of contemporary female university students' sexual morals.* Nanhua University.

Li, Z. Q.(2010).To be du lala or marry the rich second generation? Retrieved from www.lizhiqi.com, 4.

Notice. (2015). International symposium on psychology and behavior in China's social transformation under the Background of Information, *5.*

Shin, J. (2015) Comment: Female students "borrow themselves to" moral dilemma faced . Retrieved from http://star.news.sohu.com/20150805/n418189609.shtml. *People's Daily*, 8.

Wang, Jitao. (1992). Simple analysis of the morality of the female college students in the Socialist commodity economy. *Shanxi Institute of Finance and Economics*, *1*, 67-71.

Wei, Z. (2010). Research on the moral quality of the modern female college students – Taking the female college students of Chongqing for example. *Xi'an Ouya University Journal*, *2*, 39.

Wu, C., & Guangdong. (1999). Moral consciousness and conduct falling of the college students and the countermeasures. *East China Jiaotong University Journal*, *1*, 101-105

Xiang, Z. (2012). The moral socialization of the female college students during the transformation. Guangxi Normal University.

Xin, D. J., (2012). students' moral education in transition period and countermeasures. *China Education Innovation Herald,* (31), 7.

Zhang, W. (2015). The best time for women's development. *Xi'an Daily*, *3*.

Wang, H. (2011).Tang lecture female college "BACK OFF" duly inappropriate. Retrieved from http://blog.sciencenet.cn/blog-5414-439501.html. *Science Network*, 5.

Yan, L. (2014). The development of women is the development of the society. Retrieved from http://money.163.com/14/1216/16/ADJOJIV1002554JM.html>.12.

Investigation and Interrogation of Criminal Behavior Under the Background of Big Data

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[Abstract] *Big data is a higher stage of the technological revolution of cloud computing, the Internet of things. The development of big data and information, massive valuable electronic information storage and efficient "cloud computing" analysis and processing data have made the world change (Ma, 2013) Public security investigation departments try to use the advantages of big data in collection management, classified storage, analysis and other aspects for criminal investigation and interrogation work. The use of big data to achieve insight to criminal behavior, analyze criminal psychology, look for evidence of a crime, collect criminal information, study the law of crime and criminal clues, and predict crime trends will provide a lot of information support to prevent and combat crime.*

[Keywords] *big data; investigative and interrogation; criminal offense; analysis; prediction*

Introduction

Humans have entered the information era, governments and international organizations in many countries have recognized the importance of big data, and they are going to use big data as an important starting point to win a new round of competition. Since 1998, public security departments have implemented the "Golden Shield Project", and with the rapid development of public security information construction, the police departments have established a corresponding management system to effectively improve the work efficiency and management level (Yin, 2014).

Now, the investigation work in public security uses big date technology to classify the different cases according to their nature, and to create statistical storage, classification and extraction, which are great help for maintaining laws and fighting against crime. However, in public security investigation and interrogation work, the timely and efficient use of big data for the corresponding work has just been realized by a fraction of the people, but it has not been fully implemented, which is regrettable. If we make full use of big data technology in the investigation and interrogation of criminal suspects, this investigation and interrogation will have far-reaching significance for the analysis of the behavior and psychology of the object, the formulation of interrogation strategy, the investigation of crimes and warning of criminal acts.

Big data technology is bound to improve the accuracy and efficiency of the correlation analysis, so that the capture of the present and predicting the future become possible. In recent years, computer scientists, physicists, mathematicians, sociologists have proven that the majority of human behavior is subject to the rules of models and the principles of law through numerous experiments. Even some American scholars have pointed out that in the era of big data, the behavior of human beings in the age of 93% can be predicted (Zhou, 2013).

Investigation and interrogation of the public security investigation department are not only required to find out the facts of the case and ensure that innocent people are not subject to criminal investigations,

but also crimes will be better prevented and fought against through the investigation of the object in the interrogation, studying criminal law, and predicting crime trends.

The study of criminal investigation and interrogation based on big data technology builds the scientific application of data module, data type, data request and processing speed, data value density, the correct use of the data in the investigation and interrogation, and the analysis of the psychological behavior of the criminal suspect. Learning the current social crime ideology and crime dynamics can help analyze the suspect's criminal behavior and rules, and very quickly ferret out clues, predict anti investigation or resist interrogation of suspects, which will play an important role in the interrogation and investigation. At the same time, the summary of the investigation of the criminal acts can continuously enrich the database of investigation and interrogation. This is also a trend of the reform and development of public security investigation and interrogation.

The Relationship Between Big Data and Criminal Investigation

Big data, also known as the huge amount of data, is a very large amount of data that popular software cannot finish extracting, managing and processing in a reasonable time to give a conclusion to help make a decision (Li, 2013). Big data also has four characteristics, which include a large scale of data, a wide range of data, fast processing speed requirement, and the value of the data is not high (Yin, 2014).

Investigation and interrogation is one of the main methods of investigation of the object of an investigation by questioning. It is a criminal investigation activity in the investigation stage of the criminal procedure. Investigators, in order to find out the truth, collect evidence according to the legal procedures, use language to interrogate the suspects, and all these are in order to obtain a true confession and interpretation (Hu, 2007). When investigators use language to interrogate a criminal suspect during their investigation, the task of investigation and interrogation also tells us: first, the investigation and interrogation must find out whether crime suspects exist, and if there is a crime, the investigation must identify the facts of the crime under the guidance of the law. In addition, they also analyze the criminal behavior and psychology of the subject, study the law of criminal activity, and predict the trends of crime. Not only that, but they also analyze the criminal behavior and psychology of the subject, to study the law of criminal activity, and predict the crime trends. The technical characteristics of big data for criminal investigation and interrogation have a far-reaching effect mainly in that big data will make investigators acquire more sufficient and reliable information in a very short period of time, it will shorten the time of obtaining suspect's psychological information in the process of confrontation with the suspect, get the initiative, and can reflect the efficiency of investigation and interrogation.

Big data has an important value in the investigation of the crime, the analysis of the crime, and the investigation. Under the premise that the object of the investigation and interrogation is not innocent, if we want to have a successful trial, we should analyze crime psychology, the means of the crime, and its evidence. Investigation and interrogation, based on big data, can give more detailed personal information so that the investigators develop a set of practical interrogation techniques according to the criminal suspect's living habits, family conditions, contact people, life experiences, social environment, behavior, crime, and crime characteristics, etc., and through the analysis of the behavior and psychological characteristics of the object of investigation, the investigators will obtain more external clues and evidence, and thus, the case investigation will have a breakthrough.

The interrogation of criminal behavior is the modification, expansion and improvement for big data and plays an active role in its increase. Big data is huge and complex, and in the era of rapid development

of information, data is change constantly, and the speed of change is unimaginable. In this context, the information is not very accurate. So, for example, when the suspect is arrested, the results of the investigation and interrogation of the criminal suspects are modifying the big data and adding to it. After each interrogation and investigation, we can compare data information that the investigators have obtained and the the crime suspects' confession with previous information. Under the influence of big data and promotion, the work of investigative interrogation will be more standard and modern.

Investigation and Interrogation of the New Era Needs to Rely on Big Data

The application of big data in investigation and interrogation can enhance the rate of response and the ability to combat crime. In investigation and interrogation, big data is conducive to ferreting out criminals and tracing accomplices. Analyzing the characteristics of the cases, we find out that many cases are very similar because more and more suspects of cases are recidivists, even are career criminals, and they gradually form groups, and some teach each other crime skills and anti-reconnaissance of their experiences. Analyzing big data to extract common characteristics of the crimes, methods, and means can sketch the relationship graph of the suspects and evidence transferred, channels of stolen goods disposed, and through the similarity of characteristics, can even join the cases. During interrogation we should pay attention to uncovering a crime and combatting more criminals to maintain law and maintain social stability, so this is an important guarantee to ensure investigation and interrogation works smoothly.

In the course of interrogation, the criminal record, the confession of the suspect, and the original evidence combined are leads that should be comprehensively analyzed to accurately grasp the source of life, living area, spending money and other social trajectory that provides a guiding idea to management and control of the population, key areas, and key industries. To carry out investigations, investigation of cases, joint cases, and analyzing big data information can judge the other crimes of the suspect and provide a preliminary anticipation to determine the next step in the direction of digging for the interrogation. Big data not only broadens the sources of clues in the investigation and interrogation, but also reduces the dependence of the investigators. For investigation and interrogation work, big data enriches the type of evidence, broadens the evidence, and changes the structure of the evidence. Video, mobile phone records, ad electronic evidence, etc., have been more and more widely used for case detection work for public security, and more and more evidence is from the database. The psychological analysis of the crime based on big data is helpful to select the best method of investigation and interrogation.

According to information provided by the data, investigators can find clues of the crime and find a breakthrough and select the appropriate methods of interrogation. In summary, big data analysis of investigation and interrogation should cover the following aspects: The first is to grasp the overall situation of the case and its key evidence, and at the same time, understand the information of the crime cases roundly, dynamically and connectedly. The most important point is that the case should be linked to the others and be thought to obtain all the information about the case, as much as possible. The second aspect is the information not only refers to this case itself, but also the information connected with other cases, so that it is possible to filter out the most valuable information. The third aspect is, according to the problems or doubtful points of the case, we will comprehensively understand everything about the case. These things are not found from the scene and file materials, but also according to the questions or doubts of the cases to understand the rest of the information about it. That is to say, at some time, the circumstances of the case in the file materials do not show everything, and while the file only records the

surface phenomena of the case, the nature and the hidden problems often can be found through the comprehensive understanding of the cases and the related cases.

The last aspect is understanding the personal details of the criminal suspects. This includes the criminal suspect's personal life experiences, family situation, social relations, cultural degree, professional skills, thinking mode, life habits, hobbies, personality traits, personality, emotions and so on. During interrogation, investigators rely on big data to find the problems of criminal behavior from the details and find a breakthrough to solve the case (Ye, 2012). Based on big data in investigation and interrogation, we can lock the criminal evidence, and fix the statement of a suspect.

In the trial, the suspect may try to escape guilt, so his fluke mind and resistance will be highlighted. But at this time, if the investigators do not yet have more substantive evidence to point to the suspect, then the trial of the link is more difficult to breakthrough. So investigators should use the data to analyze in order to testify and authenticate the confession judged by the data. A comprehensive analysis of judgment to confession can help investigators find a countermeasure, review evidence about oral confession, timely discover doubts and contradictions, or even make a risk assessment. The methods of fixing oral confession determined by big data are: recording and videoing when investigating; repeated interrogation and alternate different police and details asked; objective and detailed records; let the criminal suspect write or draw a confession; promptly eliminate contradictions; timely verification; make a third person attend the trial; gather other collateral evidence; use emotion to fix and also structure evidence system (Zhou, 2010). For example, in the process of investigation and interrogation, recorded and videoed evidence are locked, which reduces the possibility of the suspect denying his oral confession, and also embodies the legitimacy of the interrogation and authenticity in the investigation stage.

The Impact of Big Data Development on Investigation and Interrogation

The continuous improvement of the database of the investigation and interrogation of criminal acts is a guarantee for the smooth development of investigation and interrogation. Big data can develop healthily, which must rely on constantly enriching and perfecting of the database. The data used by interrogation work should be updated continuously by the information obtained from interrogations and classified. The personal data and social information of the object investigated are written into the database, so that the process and results of big data collection can be comprehensive and complete, well covered; this ensures the quality of the data, so that the data is not completely upgraded into complete data, and data are real and reliable, which makes the investigators fully understand the object before the investigation and interrogation. Big data must be constantly enriched, so that the amount of information can be enough to meet the needs of the investigation and interrogation work. But at the same time, a point we will pay attention to is to fully protect the suspects' privacy, so for the use of big data to handle the case well, a corresponding supervision mechanism must also be established. For example, when investigators query information, the database will automatically generate a query record, which will effectively prevent violations of the legitimate rights and interests of citizens, and also make the investigations open and just. The important point of investigation and interrogation work based on big data is training law-abiding, technical investigators with high professional levels.

In the era of rapid development, the information provided by the big data system will be unprecedented to the investigators. But currently, the team responsible for information collection and management must be strengthened. In practice, the information collection of the data is often scattered, fragmented, isolated, and information processing is not in place, and it also needs to be further processed;

the regularity of big data, and its relevance also needs to be refined. Information processing is not perfect, and still needs to be further processed and calculated, and the law and the relevance of big data need to be refined (Shi, 2015).

Big data information processing is a systematic project, which requires the investigator to change the previous concept of interrogation, and instead use big data on the investigation and interrogation work. Therefore, it is very important to cultivate comprehensive talents, not only to cultivate their abilities in investigation and interrogation, but also to cultivate their abilities in data analysis, which requires that the investigator can integrate data information, and understand the entire trial system, so that data and trial become a whole to achieve a comprehensive reform of the investigation and interrogation.

Big Data Application Planning in Investigation and Interrogation

In the process of the development of investigation and interrogation, network data, electronic data, DNA data, fingerprint and physical evidence data are not independently applied, but must be integrated and make big data more unified (Liu,2014). According to the characteristics of big data, the investigator should be good at tracking a series of cases from one case, be good at tracking a criminal gang from a criminal suspect, and be good at identifying potential suspects and high-risk groups, and fully display the value of investigation and interrogation work (Yang, 2014). Therefore, the investigator must make full use of big data, so that investigators can have a clear understanding of the data of the investigation and interrogation, and extract the valuable data. For different cases and different criminal suspects, the investigator is able to find the right breakthrough, and through interrogation to fix evidence to form an unbreakable chain of evidence, and ensure the criminal procedure is carried out smoothly.

Conclusion

Big data is being widely used in different countries and areas of the world, and the public security organizations are reacting in response to the requirements of public security information to strengthen the use of large data. With the rapid development of science and technology, the application of big data will bring huge development space for investigation and interrogation. Big data will not only bring real and reliable information data for investigation and interrogation work, but can also improve its quality. When the suspect is being investigated, the investigators can extract, filter, and analyze the information data of the criminal suspect, and select the most effective strategies and methods of interrogation, and select the most effective way to make a plan. When the suspect is being investigated and questioned, the investigators can extract, filter and analyze the information data of the criminal suspect, select the most effective strategies and methods based on the big data, and form a comprehensive and multi angle investigation and interrogation system.

In the big data era, the scientific innovative work idea will carry out the investigation and interrogation work, through police interrogation personnel efforts, and actively use big data technology, so that investigation and interrogation work will produce a great leap forward.

References

Hu, G. (2007). Science of investigation and interrogation. *Chinese People's Public Security University Press*, (1, 21).

Li, X. (2013). Opportunities and challenges of the era of big data. *Telecom World*, (8), 60-61.

Liu, P. (2014). On informatization and investigative interrogation. Chinese People's Public Security University Press.

Ma, J., & Jiang, W. (2013). The concept, characteristics and application of big data. *National Defense Science & Technology*, (2), 10-17.

Shi, H. P. (2015). Exploration of pre-trial information research work. *The Internal Data.*

Yang, Z. L. (2014). *Thinking on the interrogation.* Chinese People's Public Security University Press.

Ye, M. (2013) Techniques and methods of investigation and interrogation. *Chinese People's Public Security University Press*, (77, 253).

Yin, M. (2014). Thinking on investigation and interrogation work. *Symposium on Research on the Frontier Problems of Investigation and Interrogation.*

Yin, S. (2014). Big data and public security basic information. Chinese Police Network.

Zhou, F., Shi, J., & Cui, L. (2013). Initial probe into police work in the big data era. *Journal of Shanghai Police College*, (2), 33-27.

Zhou, S. (2010). Interrogation tactics and forensic skills. *Chinese People's Public Security University Press*, (314).

The Hidden Psychological Contract Formed Under the Influence of Zen Meditation

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[Abstract] *Methods of interviews, literature and logic analysis are used to discuss the hidden effects of Zen meditation practice occurring in the psychology of non-converted individuals. As a search practice, meditation combines religion, psychology and Ancient Chinese Literature. Meditation plays an important role in other aspects except the curriculum knowledge. According to the monastic life and its people, practitioners will be influenced into deep psychological constraint, although they do not receive formal conversion, they will form a psychological contract, which can influence their thinking and behavior. While a psychological contract is freedom and not officially converted to become binding, it will strengthen and repair the practitioners' moral cognition, combining daily activities with religious beliefs. They will be attributable to Buddhism which can have lasting effects.*

[Keywords] *Zen meditation; psychological contract; hidden effects*

Introduction

Currently, more and more college students are choosing to participate in Zen Buddhist temple activities. They sign up for student activities or choose to become volunteers. Short-term meditation on the activities in the temple in learning corresponding courses and Buddhist rites is a test for the participants of body and mind, and the activity itself will be formed by the sponsors of potential impact. Students in these activities improve recognition of religious meditation, and accept the teachings. Use in our daily life, at the same time, is the requirement specification of Buddhism's own behavior. The temple carries forward traditional Chinese at the same time, and shows an inclusiveness, guiding contemporary college students' physical and mental development, increasing fresh blood in the era of progress, inheriting an excellent national culture, and bettering the implementation of the localization of the innovation and development of religion. Meditation has a different influence on different age stages of the individual, and this paper discusses meditation for college students to form the recessive effect.

The Application of Zen Meditation in Psychology

Zen is prakrits "Zen" eclipsis, free translation is "thinking", or "contemplation"; it was first officially defined in China by Indian Brahmans (Zhai, & Wei, 2012). The Zen way of diversity, including meditation and contemplation, in addition to the indoor activities, stills has a lot of outdoor walking meditation. For a long life in the busy city of little things, it provides the people a good opportunity to reflect on their own and become close to nature. Many monastery meditation activities for college students are free, as long as they spend enough time and have a willingness to conform to the temple's requirements of the relevant application to participate in summer camp activities.

Meditation is the regulation of important therapeutic effects with the body and mind. Mindfulness meditation is one of the southern Buddhist ways of practice, and through observation of the various feelings is just purity and awareness. Development of Chen is to embrace the equality of the heart to no greed by increasingly subtle and keen awareness and to extend the equal heart, and make the person achieve

enlightenment and liberation...Mindfulness meditation is in psychological consultation and treatment, as well as various empirical studies on the mental and physical health are increasing (Yu, 2010). In addition, some scholars think that meditation, as a means to adjust the mood and as a kind of traditional method of mental therapy, has been the category of traditional Chinese medicine into health rehabilitation, further enriching the basic role in a quiet God and enriching the connotation of Qigong health preservation of traditional Chinese medicine, has also played a certain effect on the health preservation of TCM's two aspects (Zhai, & Wei, 2012). In Shi Xinping and Chu Dongdong's article (2014), they describe that mindfulness meditation in mental and physical health, emotional management and moral sense, interpersonal relationships and moral sense, has a positive impact in five aspects. This shows that Buddhist mindfulness meditation is very suitable for modern people, is very useful in our daily life, shows its survival of meaning and value, and also is a Buddhist humanities concern, active in the market of a kind of embodiment. In 1979, Kabat-Zinn (1982), through an effective mindfulness training experiment, introduced the technique of meditation to the psychological consulting field. The technique of Mindfulness based on Stress Reduction, an application of Zen in the therapy of a mindfulness training program, is to find hope for suffering patients and an effective tool for the relief of pain. This de-religious value orientation makes the therapy avoid Buddhist beliefs and rituals, but according to psychosomatic medicine, successful cases, and clinical research of mindfulness meditation are explained (Shi, 2012). In addition, the Zen thoughts and practice methods and the modern western psychotherapy schools explore the relationship between the An Rongjin theory (2008) and also provide feasibility for psychological counseling localization. But these studies focused on meditation for participants in a de-religious influence, because participants in the religious psychological constraints are discussed in detail.

Selected Reasons of College Students in Meditation

Features of the College Students

Many meditation activities are entitled a College Students Group, which is the group's own meaning. First of all, there are the meditation motives. College students are 18 years of age or older, and their perception of things are in a gradual forming stage; they usually treat people and things in a simple way, their sincere way of life is more basic, and moreover they are filled with a strong curiosity for external things. By exploring spirit with them, meditation is another way of life which provides an opportunity to have contact with the outside world, and as a result, the members of the group have their own motivation factors in meditation. Secondly, there is the time factor. Students get more vacation time, especially in the summer, and their time is free for them to allocate, and continuously uninterrupted to participate in the activities. In addition, there are the psychological characteristics of the college students. In high school they enter society in a transition period, and many students are bored. They have an intention of an easy life, to advance their lives beside the fact that their life directions are not clear. The spirit of college students from the boom has disappeared. From the research of Deng, Yin, Zou & Tian (2010), after 90, the proportions are weak, there is a fear of loneliness, but they are reluctant to inform parents and teachers, and are actively looking for a friend (including some virtual friends) on the network communication, and their quality education calls for them to grow up, and they hope to get more respect, more pursuit of freedom, equality and independent personality.

So after the opportunity to provide the Zen theme, it will attract more students to pursue life itself and the meaning of life. Mr. Porter had said, "All the great religions in the world are for those who accept its

arguments and statements provides a worldview". Giving meaning to life, as it were, is the main function of religion, and it is also one of the main reasons why religion can.

From the monastery's point of view, the student groups' pure goodness, in before they are wet behind the values shaping period, guide their focus on their own, dedicated to good, so it will be easier to put ideas into action, to spread the effect of positive energy, and will be easier to receive. Just outside, student groups have a high knowledge level, they quickly accept the study of the theory of related Buddhist rituals, there is a high propaganda speed between the groups of students, which is conducive to the spread of the Buddhist culture and the development of the temple. At the same time, many young people with a fix for a close range between the temple and their practice, make the temple maintain the development of their time and promote the perfection of Buddhist thought.

Psychoanalytic theory emphasizes that the individual achieve self-transcendence, overcoming impulses of the self and improving themselves, trying to move towards the direction of the superego; they have the idea of realizing self-transcendence and they expect to further perfect their personality. Theorists argue that the individual personality development views forever at the growing stage, and at the same time, in different stages of development it has different physical and mental requirements to realize the continuous development of their own is the meaning of life and theme. Epstein feels that to participate in religious activities should be fun and avoid pain, have a concept system, raise self-esteem, establish and maintain relationships from four aspects. College students actively participate in both their own need to actively explore meditation activities, and also in promoting psychological effect of the result of the interaction of religion.

Different Forms of Meditation

Meditation forms besides those associated with Buddhist rituals and practices, include many practices associated with the Chinese traditional culture, such as the participants' daily clothing, food and life in the temple, the first Buddhist learning etiquette, and in addition to meditation, there is worship, outdoor walking meditation, slope, lectures, supplication, courses and so on. In the monastery, a teacher or special person will be subject to related courses. The students in the process share learning, psychedelics, relax and clean up the complex mood everyday, and at the same time, quickly adjust body and mind.

The Zen way will be linked with Chinese traditional culture, including Zen tea, Chinese classic popularization, etc., and under the big cultural atmosphere, it provides the convenience for the participants to gather together at the temple, harvesting life drunk with the compassion for others, stimulating their inner good nature and dedication.

The Effects on College Students of Zen Meditation

The De-religious Effects on Meditation

There are many obvious impacts of meditation, the external lifestyle and inner spiritual beliefs. To convert into this point of view, college students' contact with Buddhism after three or four years or so will form a conversion behavior to Buddhism (Yang, 2005). So, in contact with Buddhism and the conversion between real time, how can meditation affect have on converting an individual?

Traditional Buddhist beliefs, mostly with "vow", "let" or "soft touch", are a two-way agreement in the contract form of class, construct a kind of ethics culture centered on the exchange principle, the symbol of the Buddha Bodhisattva between believers and constitutes a "relatively exchange relationship" (mutual

reciprocity) (Lin, 2008). Before, it was not religious to participate in the activities of meditation, unilaterally all are by the temple management planning, and students enjoy free payment. At the same time, in the temple, the individual will have desires, will make wishes to the Buddha and Bodhisattvas, and then his wish will form in the monasteries and the gratitude of the gods. At that time, although not to convert the real ceremony in the daily operation and psychology, it will have corresponding implicit constraints; this is a long-term accumulation of a unilateral increase in religious identity, and finally, they realize the conversion of body and mind. Real connotation of Buddhism is actually a sacred Buddha building relationship, and this Buddha relationship reflects the changes of social relationships, the status of the variations.

Mahoney and Pargament (2004) defined spiritual conversion, "(spiritual conversion)...from the point of view of the relationship of divine realms and converts, including two aspects of relocation. First of all, spiritual conversion includes the individual life is the ultimate goal of change, especially for ourselves and the divine attaches great importance to the relationship between the areas, other life principles are therefore become relatively minor. Second, the individual changes their lifestyle in order to achieve this sacred goal, this shift may involve social relations, living habits, ways of thinking, emotional interaction, on the whole, is a kind of life by the guidance of new feeling. Integrated the two factors, spiritual refuge radically changed to divine, and the individual self, understanding of the relationship between, to the life."

But spiritual conversion in an individual will have their own faith to return to the belief of Buddhism, strictly abide by the relevant requirements under the supervision of the implementation in the temple monks to explore the meaning of life and the perception of the dharma, moral pursuit. Their ideas about Buddhism will be completely accepted as a wavering faith to pursue! Spiritual leader's personal charm and true elders will affect converts' thoughts. Converts unconditionally follow, have their own bind to religious practices, and there is not too much suspense. But to convert, but be influenced by an individual is not the same, their mind is in a state of freedom, their informal attitude may change at any time, or from religion, or continue to explore. But meditation itself changes and there will be more peace of mind to keep them exploring the mysterious religious field.

The Hidden Effects of Meditation

A contractual relationship was applied to accept Buddhism, but it hasn't yet formed ownership of the individual, and after they receive meditation, for the power of the dharma, worship of the gods and the meditation activity itself impacts the body and mind. Because being in contact with the thinking is different from the daily accepted ideas, so in a comfortable environment, a good experience of mind will strengthen itself to the contractual relationship. In later life, individuals tend to look for opportunities to practice has proven the rationality of a contractual relationship. Show a strong sense of religious recognition. If, after the stereotype, the halo effect, they will work together for better things. Student groups need spiritual bailment and meditation provides a bridge to the door of Buddhism.

In effect, but not a convert at this stage, individuals, with what they receive, leads them to the requirement of Buddhist's middleman to abide by it. Internalization of the requirements become an internal cause of the psychological contract. Emotional identity and behavior identity, at the same time, in the emotional recognition-related doctrines and ideas, on behavior that is in the daily diet, makes people stay content in this style of doing things. Choose a kind of spirituality and choose a way of life.

The psychological contract is widely used and organizes employee relations, and the definition of a psychological contract refers to that the parties, not through some form of a direct and clear meaning, but

through all kinds of psychological suggestions, make a mutual perception and recognition of their expectations, thus forming a tacit agreement on the rights and obligations of the relations. According to this definition, the connotation of the concept of psychological contract includes the following (Cao, Zhu, & Guo, 2007):

- The psychological contract is not unilateral by the parties. A single strand of expectation or belief is no psychological contract, in which the parties can not only be the individual, but can also be groups and organizations.
- The psychological contract is a tacit agreement and the agreement of the parties. That is to say, the psychological contract is that the parties agree on part of the questions of common concern. If their psychological expectations and beliefs do not let the other side's perception be recognized by each other, this is one-sided wishful thinking. They did not come to an accordance of expectations and beliefs that belong to the categories of the study of the psychological contract.
- The parties understand the tacit agreement of their respective peers of looking forward to the rights and assuming obligations. If the other party does not fulfil the corresponding obligations, their rights are damaged, and will cause a certain reaction on the group's psychology and behavior.
- The parties did not directly, by oral, written, or other form, obviously or clearly express their expectations and promises, but within the specific situation and cultural background, through awareness, understanding and communicating with each other all sorts of allusions, and have reached a tacit agreement in psychology.

Lin Xuezhen (2008) pointed out that religious feelings and behavior leading to religious ideas, religious ideas sometimes could be explained by the meanings of emotions or behaviors. Therefore, when the main way to cognition could not provide a satisfactory explanation, young people will turn to informal ways to meet their cognitive psychology, such as religion. Lifton thinks their vulnerability may strongly stimulate people to turn to a variety of religious and spiritual activities. A belief can provide clear answers and a religious belief system may be the choice of the people, from the ramifications and pointing in the direction different noises. It can provide a coherent center, enabling the people to see the world of life in the center of the lost. Such a focus, a negative view is to choose the range of the narrow, and positive view is enriching and expands the creative focus of people's lives. But meditation is looking forward to the effect of the individual because meditation brings itself, and at the same time, a monastery meditation host also has to "pursue" public will, a more boundless temple can influence young people become the explorers of the dharma and voluntarily become the propagandist. This is more than a simple statement can say effectively.

Conclusion

The formation of a recessive psychological contract often gives the individual a sense of awe, when their actions have not meet the relevant requirements, they will spend more time to reflect on correction; the growth of the individual and the society have a positive role in promoting mutual progress. If it is the contract between the individual and a specific temple, or a yogi relationship for relational stability, will harvest the influence of specific things. But if the individual, as is agreed between the gods and the Buddhas and Bodhisattvas, will actively see, the requirements to achieve the requirement of the deal. Individuals search for meaning of life is endless, and most individuals are willing to practice the dharma for awe for Buddhism, but there is also a part for personal charisma and they select conversion. Both individual actions

affect the sustainability differently. Overcoming the fear of death, the realization of the exploration of humanity, the self is a never-ending process, and the practice of meditation for individuals to explore undoubtedly provides an alternative way. Every individual needs to choose according to their own requirements.

When college students are in the stage of a recessive psychological contract, when their own behavior and emotional needs demand more self-control, they still need to study more relevant knowledge of religion, be positive in life practice, make discreet choices, and realize the oneself of body and mind. It should not be because of a sense of indebtedness and guilt over joining religious groups.

References

An, R. (2008). The relationship between Zen ideas and modern west psychotherapy. *Genre Journal of Gansu Normal Colleges*, *13*(6), 129-132.

Cao, W., Zhu, R., & Guo, J. (2007). The concept of psychological contract, the main body and build mechanism research. *Comparison of Economic and Social System, 2*, 132-137.

Deng, R., Yin, Q., Zou, T., & Tian, Z. (2010). On the group characteristics of college students born in the 1990s. *Journal of Hunan Institute of Engineering*, *20*(3), 88-90.

Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients, based on the practice of mindfulness meditation – Theoretical consideration and preliminary-results. *General Hospital Psychiatry*, *4*(1), 33-47.

Liang, L. (2005). The Chinese religious conversion process: Buddhists and Christians in Shanxi as an object of investigation. *Religious Studies, 1*, 118-125.

Lin, X. (2008). Religious psycho-analysis on contemporary Chinese youth. *Journal of Shanxi College for Youth Administrators, 21*(2), 13-15.

Mahoney, A., & Pargament, K. I. (2004). Sacred changes: Spiritual conversion and transformation. *Journal of Clinical Psychology/In Service*, *60*, 481-492.

Rambo, L. R., & Bauman, S. C. (2012). Psychology of conversion and transformation. *Pastoral Psycho*, *l61*, 879-894.

Shi, W. (2012). The psychological research of mindfulness meditation. *America Journal of Xuzhou Normal University*, *38*(5), 147-151.

Shi, X., & Chu, D. (2014). The effect of contemporary Buddhist mindfulness meditation on life. *The Voice of Dharma*, *9*, 46-50.

Yu, Q. (2010). Based on mindfulness meditation of psychotherapy. *Journal of Hubei University of Economics (Humanities and Social Sciences)*, *7*(2), 28-29.

Zhai, X., & Wei, Y. (2012). Psychological analysis of the Zen meditation and TCM life cultivation China. *Journal of Chinese Medicine*, *27*(171), 961-963.

The Research of University Graduates' Psychological Mechanisms in the Employment Process in China

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[Abstract] *According to China's national conditions, we combined the employment process with its influencing factors and the psychological characteristics of contemporary university graduates. This paper systematically describes the psychological problems that university graduates may encounter during their employment process, and puts forward some possible solutions.*

[Keywords] *university graduate; employment process; psychological mechanism; China*

Introduction

To apply for a job, university graduates need experience from choosing a job to obtaining employment. The special process of employment covers the period of time from the ending of school courses to the students choosing a career, and finally to formal employment, which generally begins during the last semester in the university. The process ends with a deadline for the fresh graduates to obtain employment. The generalized process of employment duration varies from person to person, and begins in the college students' individual employment activities, ending with signing an employment report (Dai, 2012). Even if there has been a great demand for China's talent market, recently the employment rate of college graduates is still not ideal. The graduates in the process of employment are faced with many psychological problems such as stress, anxiety, and adapting. These psychological problems will affect the employment process and vice versa, which forms a vicious circle again and again. Some graduates blindly obtain employment, ruling out the quality or professional adaptability of the position, and this results in frequent job-hopping or unemployment, which is also adverse to the career development of the individuals. The policy of employees delaying their retirement age is looming in China, which puts more pressure on the contemporary graduates.

In this paper, the psychological mechanism in the employment process and the related research will be discussed. First, the three stages of the university students' employment process and its influencing factors will be analyzed. Second, the psychological characteristics of college graduates in China will be described, and finally, the psychological problems of China's contemporary university graduates will be discussed systematically and a series of solutions will be put forward.

The Process of Employment and it's Influencing Factors

The university students' employment process can be divided into 3 stages: the previous preparation stage, middle stage of employment, and the late conversion stage (Dai, 2012). The first stage is the previous preparation stage, which is the fundamental stage of smooth employment after graduation. Generally speaking, it's the entire university period. The main activities for this stage are to fulfill college courses, including the students' preparation activities for their own growth, such as attending lectures, obtaining certificates, participating in social practice activities, and part-time activities, etc. In time planning,

colleges and universities have their own schedules and activities to arrange at this stage, but due to the large time span, the effect may not be directly seen in employment. This first stage is easily ignored by university students.

The second stage is the mid-term stage of employment. This stage includes all of the activities for college students to achieve employment, such as looking for recruitment information, joining recruitment activities, and participating in a trainee program or internship, etc. This stage is crucial for successful employment, and generally starts in the last year of university, when college students face begin to feel employment pressure. They start trying to find all kinds of information to increase their employment opportunities. But most graduates have not laid a good foundation in the first stage, or we can say that they lack preparation, so they may have difficulty in this stage.

The third stage is the late conversion stage. This stage is the process of identity transformation and psychological adjustment after college students begin employment. They experience great leaps from being students to being staff, and from studying to working, so they need mental adjustments to make the jump from campus to society. During this stage, some may lose their balance by not obtaining the correct job for them, which may have a negative impact in their future careers.

This paper mainly discusses the mid-term stage of employment. At this stage, graduates make many attempts to get their first jobs. They select the company, send a resume, take the exam or interview, sign a labor contract and participant in many other activities. This stage may be influenced by many factors, which can be divided into personal factors, family factors, social factors, and occupational factors.

Personal factors are the main factors influencing the university students' employment. Every individual is unique, so each person's personality, experience and ability are all factors that affect their employment. In recent years, college graduates are turning to the generation after the 90s, as people from each decade have their own characteristics. The graduates after the 90s conform to the characteristics of contemporary society, showing their unique psychological characteristics and employment characteristics. We provide a detailed interpretation below.

Family factors are also strongly associated with university graduates' employment. Most graduates lack social experiences and interpersonal skills, thus their family resource is their primary social resource, so their family background may also affect their. A study by Liu Yanru (2012) shows that the higher the level of the father's education, vocation and monthly income, will increase the graduate's s confidence in job-hunting.

Social factors are also important for employment. China is a typical society, which is concerned a lot about human relationships. Many people hunt for a job by using their human relationships. Kinship is not the only principle to measure the strength of a relationship, but the interaction, or the interests of both sides also make a difference. In order to smoothly gain employment, sometimes people will use the greatest human relationship to get the best help (Liu, 2012).

Occupational factors are crucial in the mid-term stage of employment. Professional adaptability refers to a certain physiological quality and psychological quality in order to adapt to a certain profession. "College students' professional adaptability is one of the main factors influencing university students' employment, which concluded the specific performance in college students' learning skill adaptability, interpersonal adaptability, professional consciousness adaptability, career choice adaptability and environment adaptability. Professional adaptability is not only the process that people coordinate with profession, but also as a measurement whether the college students' professional life is in harmony or

not" (Tian, 2014). In conclusion, the four factors mentioned above are not only independent, but the also interact with each other, which works together to influence the employment of university graduates.

The Psychological Characteristics of Contemporary University Graduates in China

Contemporary college students are different from previous college students due to the current social situation and international situation. Comprehensively, children born after the 90s are in a period of birth control to only one child. The one-child rule is usually short in collective concept and responsibility consciousness. Secondly, college students are still in school, and they lack social experience and the ability of good judgment. It's easy for them to aimlessly follow the so-called authority. Finally, the contemporary social utility desire is too strong, leading college students to seek quick success and instant benefits, lacking deep thinking and work confidence. So many graduates blindly pursue jobs with high rewards and high levels in the developed areas.

Although there are a lot of shortcomings, the psychological characteristics of college graduates have improved greatly. In terms of cognition, after experiencing university study, the students' personality becomes more independent and perfected. Their self-awareness and other cognition have also improved greatly. In self-awareness, after learning more knowledge and skills, in addition to experiencing many practical activities, the students begin to discover self deficiency, begin to pay closer attention to bonds with others, and to promote themselves better. As for cognition of the world, although they have little chance to experience real society, their awareness of life, work and society still remain idealistic. However, college students have a preliminary learning and experience of how to use dialectical thinking to analyze the events in their lives, their values, ethics, and judgment.

As for emotional aspects, their emotional cognition and emotional controlling ability have improved a lot with the increase of age and interpersonal communication. In terms of self awareness, they have a good view on their own strengths and weaknesses. They can make positive evaluations on themselves, with an objective understanding of self and reasonable self-motivation. In the aspect of self control, college students can rationally constrain impulsive behavior. They have perseverance to maintain good habits and they use reasonable methods to dispel negative emotions. Even in interpersonal relationship problems, they are also full of positive energy methods such as using more rational, more caring and friendlier attitudes and behaviors to interact with other people.

On thinking development aspects, contemporary college graduates have accepted systematic cultivating and training in professional knowledge, academic research, and social practice, as well as the impact of western culture, and all of this makes them more rigorous and agile in their thinking development. They have formed a preliminary judging ability and a strong critical thinking of things, and have gradually developed steady political values and diversified international fields of vision. This make them not only more objective, but also more rational in their career choices and career decision-making. It's also easier for them to accept and face failure in their career journey. Since they have certain abilities for more comprehensive dialectical and attribution analysis, they can use their own unique insights, instead of blindly following the trend. Excellent graduates are even capable of critically looking at things, daring to break through the mind-set (Wang, 2009).

The Psychological Problems the Exist in College Graduates' Employment

College students' psychological problems occurring in the process of their employment are closely related to the factors affecting employment and the characteristics of the college students themselves. The

psychological problems can be roughly classified into four categories. The first problem is fear of employment for underemployed college students. Fear is often produced by inferiority tendencies. Inferiority usually means that the students have a low self assessment, they may lack confidence to apply for a job, or they are too dependent on their family. When faced with employment, those graduates may have resistance and fear. Because they often lack the training preparation stage, and suffer from scarce capacity, or poor physical and mental quality, this can trigger escape in the face of challenges. These students often have poor performances during the process of employment, accompanied by rapid heartbeats, sweating, as well as some symptoms such as tension, trembling, and even fainting (Luo, H. ,2004). Fear appeared in the process of employment; females suffer more than males, and rural graduates suffer more than urban graduates (Liu, 2007). The second problem is vanity. Contrary to inferiority, many college students have a high self assessment, which directly leads to strict demands on employment conditions, and therefore they miss good job openings. Undeniably, in this case, there are some students that do have good prospects in job hunting, but their requirements for their vocation are still beyond their abilities. Under the screening of high strength, they are eliminated by better job candidates. Sometimes they are unwilling to start at the bottom of the company, which makes them miss other good opportunities. Another vanity issue is their vanity of vocational requirement, blindly pursuing jobs in developed areas, or jobs that seem decent, rather than making reasonable choices according to their own situations, and consequently, they miss opportunities (Liu, Q. 2005)

The third problem in psychological issues is anxiety. In the process of employment, stress is common for fresh graduates, which brings about different degrees of anxiety, ranging from a down mood to insomnia, or some severe cases may even be troubled with depression. There are many causes for anxiety, including insufficient ability, poor preparation, poor self-confidence, or a rough way to employment and so on. In recent years, the number of graduate students have increased, while the retirement age has been delayed, so the employment pressure on graduates has increased yearly, and accordingly, graduates with depression have also increased, putting a very bad impact on the employment environment. However, the best way in dealing with anxiety is the same way in dealing with unpleasant things or emotionally difficult situations, you recognize it, and remain calm and in control of yourself in spite of it. On one hand, underemployed college students need practice in emotional skills, and on the other hand, they should improve themselves in all aspects of skills in an all-around way.

The Solutions for Smooth Employment for University Graduates

In order to solve psychological problems produced in the process of university graduate employment, we put forward some improvements in regard to psychological qualities and problem-solving abilities. These solutions are not quick fixes; long-term efforts are need to gradually improve a person's overall qualities (Luo, H, 2006). The cultivation of good psychological qualities of university students is an important significance. Excellent psychological qualities are necessary for successful talents; this is not the only key factor for university graduates' employment, but it does provide a significant guarantee for them in the face of daily challenges.

Good Psychological Qualities have the Following Aspects *(Wang, 2009)*

Normal intelligence. Generally speaking, students who are admitted to a university, their intelligence are in or above the normal level.

Stable emotions. Every individual has positive emotions and negative emotions, and when faced with pressure or stimulation, negative emotions may appear, but when negative emotions become excessively extreme, or even affect daily life and lead to aggressive behavior, then that is what we called unstable emotions.

Strong will. Strong will enables the individual to firmly follow goals, calmly face challenges, and consciously overcome adversity. There will be failures during career exploration and looking for jobs, but the young college students in particular need to have a strong will to help them unrelentingly persist in their goals until success.

Sound personality. A sound personality is the basis of mental health. Heredity and environment affect the formation and development of personality, but good education and self initiative is an important factor of personality.

Harmonious interpersonal skills. Every individual cannot be isolated from society, work, and other people. Harmonious interpersonal communication not only gives an individual physical and mental pleasure, but it can also promote the individual's interpersonal intelligence development.

To improve psychological quality needs, not only family, college and society help to create a good environment and provide appropriate educational conditions (Li, G. L., 2005), but college students can also help themselves a lot, such as learning psychology knowledge, forming objective self-knowledge, understanding themselves, and eliminating emotion reasonably in order to form stable emotions and a sound personality. In addition, actively participating in various social and campus activities, expanding their fields of vision, being harmonious with others, and developing their will, are all helpful for university students to improve their psychological qualities.

Problem solving ability for college graduates is also a very important aspect. Problem solving is the process that is used when facing a general difficult situation, in which students need to use a range of cognitive operations to solve. Whether in study or work, we meet lots of problems, and if we don't face them, we will miss a lot of opportunities to train ourselves. So the problem-solving ability is also significant in getting a job, and it's a universal and transferable core skill. The structure of problem solving ability can be summarized as:

1. The ability to observe and identify. This part requires people to understand problems, to observe the subtle variations, to identify the key characteristics and the mutual relationship.
2. The ability to express and communicate. This ability demands people to express the essence and the key points of the problem effectively in their own words, and to communicate with others, and to seek a negotiated settlement.
3. The ability to analyze and decide. This part requests people to conclude and analyze the causes of problems, to reason and deduct the development process of problem, to make a judgment and to present the appropriate way to solve the problem.
4. The ability to train and act. This ability asks for people to solve problems reasonably according to a proposed solution, and to flexibly adjust solutions to the changing problems.

These four kinds of abilities are key steps in problem solving, which can help students handle difficult things on their own when faced with employment troubles (Zhang, 2013).

Ability is a certain psychological conditions for smooth completion activity or tasks. Ability can be acquired, learned and practiced in a variety of environments, circumstances and conditions, not just in classroom teaching (Cheng, H. N., 2007). University students should spontaneously use innovative thought, reverse thinking, and dialectical methods to try to solve problems of all kinds in life, such as

communication problems, and selective problems. They should make full use of various environmental conditions to develop their professional abilities, especially the ability to solve problems. They should learn to take their existing abilities and migrate them to the new problem solving. Following the principle of going from easy ones to difficult ones, and by using these exercises in life, university students will finally enhance their abilities in an all-around way.

In addition, in the face of employment, university students need to correctly and objectively evaluate themselves, select appropriate jobs, and appropriately eliminate pressure.

Conclusion

College graduates' employment dilemmas appear in the mid-term stage of the employment process. This stage can be influenced by personal factors, family factors, social factors and occupational factors. The psychological problems existing in college graduates' employment are fear of employment, vanity, and anxiety. The solutions for smooth employment for university graduates are good psychological qualities and problem solving abilities.

References

Hamtiaux, A., Houssemand, C., & Vrignaud, P. (2013). Individual and career adaptability: Comparing models and measures. *Journal of Vocational Behavior*, (83), 130-141.

Cheng, H. N., & Ding, Y. (2007). University graduate employment problem research: Based on the analysis of employment quality. *Rural Economy and Science-Technology,* (8), 4-5.

Dai, H. (2012). *The study of problems in the employment process of undergraduates in China – From the view of enterprise.* Zhejiang: China Jiliang University.

Li, G. L. (2005). Upbringing patterns of psychological quality of undergraduates. *Chinese Journal of Rehabilitation, 9*(8),124-125.

Liu, Q. (2005). Mental health: University graduate employment problem that nots allow to ignore. *Journal of Shanxi College For Youth Administrators, 18*(3), 21-24.

Liu, S. G. (2007). The analysis of the common psychological problems in university students' employment and solution. *Journal of Liaoning. Educational Administration Institute, 24*(6), 47.

Liu, Y. R. (2012). *The research of initial employment of university graduates in the social capital perspective.* Hubei: Central China Normal University.

Luo, H., & Ma, J. H. (2004). Relation among college student's depression symptom, problem solving appraisal and perceived stress. *Chinese Journal of Clinical Psychology*, *12*(4), 367-368.

Luo, H., & Xu, B. H. (2006). Mechanism of problem solving ability improvement among college students. *Chinese Journal of School Health, 27*(2), 141-142.

Tian, C. Y. (2014). *Analysis on the influence factors of the college students' vocational adaptability – An application on hierarchical linear models.* Xian: Shanxi Normal University.

Wang, J. (2009). *The research of university graduates' psychological problem in employment and their countermeasures.* Hebei: Hebei Normal University.

Zhang, P. (2013). The study on the cultivation of undergraduate problem solving ability. *Journal of Beijing University,* (4), 90-95.

Analysis of Habit of Staying Up and Influencing Factors of University Freshmen in China in the Network Era

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[Abstract] *The internet has brought great changes to college students' lives. The most typical phenomenon is more and more students are staying up late, especially freshmen. This paper intends to understand the habit of staying up late in university freshmen and analyze the main influencing factors so as to improve university freshmen's healthy sleep habits in the network era. The method used was the self-made questionnaire to investigate university freshmen in universities in Hangzhou by anonymous survey. The results showed that only 2% of freshmen never stay up late, 53% of freshmen stay up late sometimes, and 45% of freshmen always stay up late. Almost 68% of freshmen go to bed between 12:00 pm to 1:00 am. During their vacation, 30% of freshmen go to bed after 1:00 am. The results also show that 78% of freshmen who stay up late spent their time on the internet. Staying up late is becoming a common phenomenon among university freshmen in the network era. The main reasons include the popularity of mobile phones, the convenience of the internet, online social networking, a lack of self-control, and so on. Society, university and freshmen should pay more attention to this and put efforts together to develop healthy sleep habits.*

[Keywords] *sleep; stay up late; university freshmen*

Introduction

With the development of society, especially under the new media impulsion, the lifestyle of people has changed greatly. The most typical phenomenon is more and more students are prone to depend more on the internet and stay up late. "Midnight and pre-dawn are the very times for study" is a profound description of Chinese students' pursuit of their studies (Li, 2014). But now some university students stay overnight just to play games online. By analyzing the research of the lifestyle of 708 undergraduates, the results show that most university students are inactive and have unreasonable behaviors on health care which includes staying up late (Xie & Zhang, 2004). More and more students use the network as a main way of leisure (Chen, 2009). Staying up late is one of the main related factors that arouses constipation of some female students in the university (Yue, 2011). Professor Colin Espy, director of the psychology department at the University of Glasgow in the UK, believes that sleep is a factor that affects people's health and longevity. Thomas Will, an expert study on the biological rhythms, also said that more and more evidence indicates the effects of sleep deprivation can be added to serious health hazards, even obesity and cancer have a direct relationship with stay up late (Wei, 2003). Besides some researchers point out that staying up late can affect students' learning. For example, American science found that staying up late before exams wouldn't improve the results; it would actually affect the memory to the

contrary. Freshmen are more likely to stay up late due to the relatively relaxed state in university. It is important to pay attention to the status of staying up late and analyze its influence factors, which can provide reference for better regulation and advice to university freshmen.

Methods

Participants

This study used the cluster random sampling method; 450 questionnaires were distributed and the effective rate was 94%. The basic situation is listed in Table 1:

Table 1. ***The Distributing Status of Participants (N=423)***

	Gender	Amount	Percentage (%)
Gender	male	165	39
	female	258	61

Research Tools

This research mainly used the interview and questionnaire survey. The self-made questionnaires were delivered to investigate the status of staying up late among university freshmen.

The Process of Measurement and the Data Processing

The questionnaires were distributed with anonymous answers. Data management and analysis were done by SPSS10.0.

Results

The Main Arrangements at Night

Figure 1 shows that 76% of freshmen spent their time on the internet at night, which is the most common phenomenon in the dormitories. Five percent (5%) of freshmen spent their time on study, and 3% of freshmen liked to kill time by participating in various activities at night. By contrast, respectively 9% and 5% of freshmen spent time on the phone and part-time jobs. The development of information society has brought more choices for freshmen in the evening; more students spend their time on various things and staying up late.

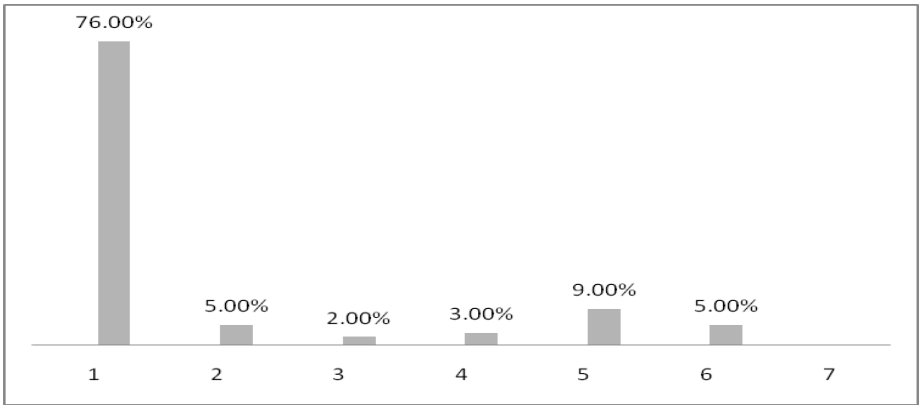

Figure 1. **The Main Arrangements at Night**
(1 = surf the internet; 2 = study; 3= other; 4 = participate in various activities; 5 =talk on the phone; 6 = part time jobs)

The Frequency of Staying Up Late

From Figure 2, we see only 2% of freshmen never stay up late, 53% of freshmen stay up sometimes, 45% of freshmen always stay up. Staying up late is becoming a common phenomenon among university freshmen.

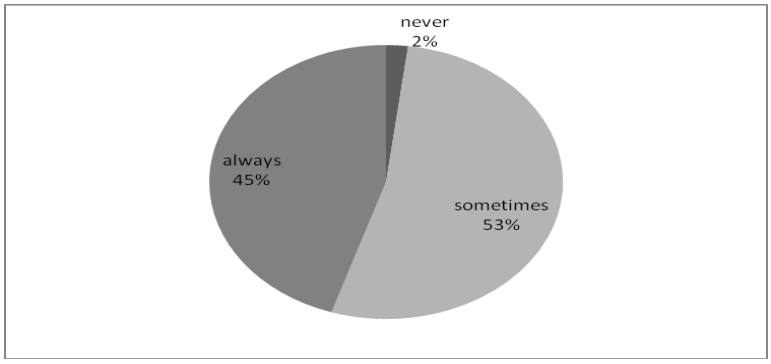

Figure 2. **The Frequency of Staying Up Late**

Time to Rest

From Figures 3 & 4, we see that 68% of freshmen mostly go to bed between 12:00 pm to 1:00 am. Only 1% of freshmen go to bed before 11:00 pm. During weekends and vacation, more freshmen tend to stay up late; even 30% of freshmen go to bed after 1:00 am.

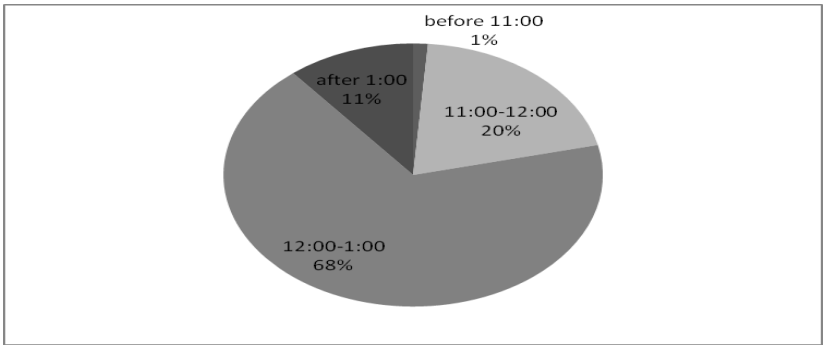

Figure 3. **Time to Rest During Ordinary Days**

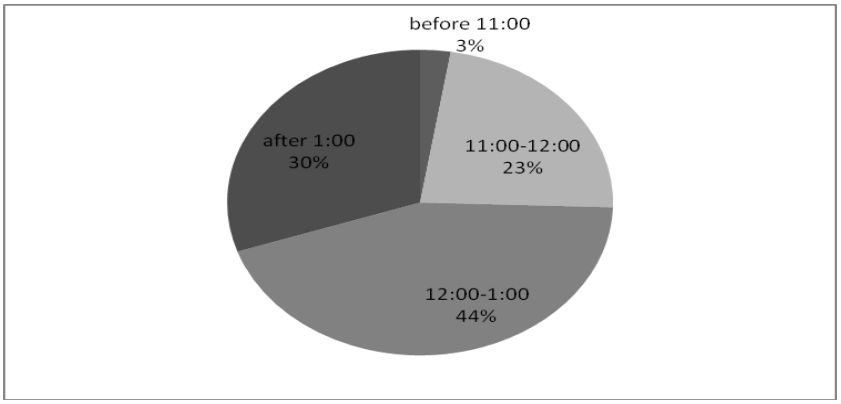

Figure 4. **Time to Rest During the Weekends and Holidays**

Analysis

With the development of the society, the lifestyle of college students has changed greatly. Staying up late is an increasingly common phenomenon, and there are several reasons to explain it.

The Popularity of Mobile Phones

Almost everyone in college can get a phone which is cheaper than before. Some students have two or more mobile phones. And the functions of the phones have developed from only the basic functions, like texting and calling, to accessing the internet, playing games, reading books and other functions. It brings more information and it also has a powerful function of entertainment at the same time. There are plenty of new online games, chat tools, wonderful TV series, variety shows, and reality TV shows which are great attraction to college students, especially freshmen. All of these lead to internet addiction and bring irregular work and rest.

The Convenience of the Internet

In order to attract more freshmen, now a lot of dormitories are equipped with a wireless network. Unicom and Telecom companies have also launched many mobile internet packages for college students, such as special periods of time to get on the internet, and monthly amounts of free data and so on. Some freshmen go online overnight without worry about the amount of free data. According to the *35 Times China Internet Network Development State Statistic Report* (2014), in 2014, there were 31,170,000 new internet users in China. Among them, IM (Instant Messaging) is the first largest Internet application, and the usage of internet users continues to rise, accounting for 90.6%. As of December 2014, mobile instant messaging utilization rate was 91.2%, an increase of 5.1%, compared with the same time in 2013.

The Influence of Online Social Networking

Online social networking also has a great influence on college students' lives. Online social networking is attracting almost all Internet users to participate in it (Kraut, Scherlis, & Mukhopadhyay, et al., 1996). A senior researcher, Clark from the computer science laboratory at the Massachusetts Institute of Technology, said it is wrong to use the network as the connection between the computer; on the contrary, it connects people who are using the computer for the network. The internet's biggest success is not in the technical level, but in its effects on people. The network has especially changed the structure of college students' lives. The life of college students is mainly made up of study time and leisure time. According to a survey of 5600 college students from 28 universities in China, the internet has become a major leisure entertainment for college students (Zeng, 2008).

Poor Self-Control

The changes mentioned above have also brought freshmen great challenges. With more freedom and time, they should be more disciplined. But without clear goals and planning, a some of the university freshmen will lose control, even playing games all night, which has a serious heath impact on them.

The Influence from Peer Groups

College students are likely to be influenced by people of the same age. There are four or six students normally living in the same dormitory. People in the same dorm certainly affect each other. In particular, if some of them stay up late, others would stay up late too. Playing games all night is a normal thing in the male dormitory when it's lights off.

Conclusion

From the traditional society to the modern society, lifestyle has changed greatly. Staying up late is becoming a common phenomenon among university freshmen. There are many reasons causing it. In order to develop healthy sleep habits, effective education activities should be conducted. But education is a systematic project, and school, family, society and students should work together. The following aspects should be taken into consideration.

Improve the Self-Discipline of Freshmen

Health and a good lifestyle cannot be separated from the freshmen's own efforts. The internal cause is the fundamental; the external factor is just the condition, so we should improve the self-discipline of freshmen. First, they should set up a goal of life, and they should keep in mind learning is the eternal theme of college life. Second, they should have whole understanding of the unhealthy phenomena in the current transition period and to develop scientific, healthy living habits.

Strengthen Education and Guidance for Daily Life

For a long time, the colleges paid more attention to professional education and ideological education. But at the same time, the education and guidance for daily life is also important. Though freshmen are adults, they are without proper guidance and discipline, and it is easy for them to relax to own requests. So it is necessary to strengthen their education and guidance. To do this, on one hand, colleges should strengthen the construction of a life system and require freshmen to abide by it, especially a schedule management system in the dormitory. On the other hand, put the education into professional education, combining life education and learning, and let them influence each other and promote each other. Good sleep helps to maintain a good state for learning, and a good learning attitude. Good habits also can help to develop good living habits.

Improve the Ability of Time Management and Planning

The network changed the structure of the college students' lives (Yu, & Zhang, 2011). The lives of college students are mainly made up of study and leisure time. In the past, students spent their time on watching TV, watching movies, taking part in sports, shopping and so on. Based on this, it is essential to improve the ability of time management and planning of freshmen. They should focus on learning and rest, and avoid the addiction to the internet at the expense of their study and health. Finally, they can arrange the time reasonably.

Under a lot of temptation and challenge brought by the internet, for their health, freshmen should learn to manage themselves well in the network era. We can help freshmen develop good sleep habits by improving their self discipline, strengthening their education, guiding their way of daily life and improving the ability of time management and planning.

References

Chen, L. (2009). A preliminary study on the life style education of 90 college students under the perspective of multi culture. *Journal of Chang Sha University.*

Gong, Y. Z. (1986). Study on college students' way of life. *Journal of Research on Higher Education.*

Kraut, R., Scherlis, W, & Mukhopadhyay, T., et al. (1996). *Home net: A field trial of residential internet service.* New York: SIGCHI Conference on Human Factors in Computing Systems.

Li, Z. (2014). Focusing on teenagers and their sleep. *Journal of The Science Education Article Collects.*

Wei, F. (2003). Stay up late – A health risk. *Journal of Family & Traditional China Medicine.*

Xie, P., & Zhang, J. (2004). Research on the university students' lifestyle. *Journal of Jilin Institute of Physical Education,* (04).

Yu, H., & Zhang, X. Z. (2011). The influence of network duality on college students' life style duality. *Journal of Nan Cang Hang Kong University (Social Sciences).*

Yue, X. (2011). Some high school female university student in Peking is constipated related factor analysis. *Journal of Aerospace Medicine*, (02).

Zeng, Y. (2008). Research on Chinese college students' lifestyle. *Journal of Contemporary Youth Research.*

Engaging in Business Impairs Trustworthiness Judgment on Novel Faces

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[Abstract] *Two studies present that people who engage in business show impaired trustworthiness judgment on novel faces. In Study 1, we directly compared the judgments of students majoring in economics and other specialties; in Study 2, students majoring in non-economic specialties were required to imagine to engage in business or social work before making judgments. We found that in both conditions engaging in business impaired trustworthiness judgments on trustworthy faces.*

[Keywords] *engaging in business; trustworthiness judgment; novel faces; homo economicus belief*

Introduction

It is revealed that trust level is declining dramatically as we are experiencing rapid economic growth. The world value surveys in 1990, 1995 and 2001 found that the trust level continued to decrease between 1990 and 2001, and according to *Asian Barometer Survey*, trust level in mainland China dropped 18.5% in 2002 comparing to that in 1990 (Ma, 2008). A meta-analysis figured out that Chinese college students' interpersonal trust scores significantly decreased in the last decade (82 in 1998 to 72 in 2009) (Xin & Zhou, 2012). In fact, this phenomenon is not unique to China. It has been found that deep trust crises and dishonest business behaviors lie behind the several recent worldwide financial crises (Sapienza & Zingales, 2012). This problem has drawn the attention of governments around the world.

In reaction to this problem, many researchers attributed the change to the uncertainty brought by rapid social change, the popularity of materialism, the increasingly vigorous business competition and companies' voracious pursuits of profits. Some researchers proposed that this may be caused by the fact that more and more people are engaging in business and are internalizing the *homo economicus belief* in their daily social interaction (Xin & Liu, 2013).

Homo economicus belief is the most important and most essential human nature assumption in mainstream economics. Its central theme is that in economic activities, people aim for the maximum of their own utilities. That is, people always weigh costs and benefits rationally, trying to maximize their own interests rather than constructing mutual trust between themselves and other parties. A study investigated college freshmen and junior students' trust, showing that students with economics majors showed a significant drop in interpersonal trust from first to third grades, a trend not found in students majoring in humanities and social sciences (Xin, Dou, & Chen, 2013). Xin and Liu (2013) further found that participants who transcribed an introduction of *homo economicus belief* exhibited significantly lower trust scores compared with participants transcribing a paragraph of exposition (Xin & Liu, 2013).

However, in the above studies what researchers measured were either self-reports of interpersonal trust level or trust decisions in trust games. In those measurements, the objects that were trusted were always abstract and fictitious. In real interpersonal communication, we first need to decide whether the person standing in front of us is deserving of trust or reliance. This kind of trustworthiness judgment is essential to humans for its role in survival and safety (Porter, England, Juodis, ten Brinke, & Wilson, 2008). In general, trustworthiness includes behavioral trustworthiness and facial trustworthiness (Xu, Zou, Ma, &

Wu, 2012). The former is determined with individual behavior characteristics, while the latter is determined by human facial structure features. A study found that four facial characteristics – the brow ridge (down/up), cheekbones (shallow/pronounced), chin (wide/thin) and nose sellion (shallow/deep) – are significant predictors of facial trustworthiness (Todorov, Baron, & Oosterhof, 2008). Stirrat and Perrett (2010) further found that men with greater facial width were more likely to exploit the trust of others.

Compared with behavioral trustworthiness, the judgments of trustworthiness on human faces have more direct impact on the establishment of mutual trust between strangers (Oosterhof & Todorov, 2008; Winston, Strange, O'Doherty, & Dolan, 2005; Wout & Sanfey, 2008).These judgments are formed so rapidly that merely a 100-ms exposure of faces is enough (e.g., Todorav, Pakrashi & Oosterhof, 2009; Willis & Todorov, 2006). It even seems to be an automatic process. In a recent study, participants were required to make trustworthiness judgments of faces with an exposure of only 33ms and their performances were above the chance level (Todorov, et al., 2009). Bonnefon, Hopfensitz and Neys (2013) further stressed that the trustworthiness judgment was not influenced when the cognitive load was increased. Similarly, fMRI studies demonstrated that as the untrustworthiness of faces increased, the right amygdala response showed a negative linear response and the left amygdala response was quadratic. This model was not influenced by tasks, although participants were required to evaluate the age of the novel faces or memorize them in the meantime (Engell, Haxby, & Todorov, 2007; Todorov, Baron, & Oosterhof, 2008; Winston, et al., 2005).

Given its rapid and automatic nature, does engaging in business influence the trustworthiness judgment on human faces or not? Until now, this problem remains unanswered. In the present study, we designed two studies to investigate this question. In Study 1, we compared the trustworthiness judgments made by college students majoring in economics or other specialties. In Study 2, college students majoring in non-economic specialties were primed to imagine that they were engaging in business or other occupations such as social work, before making trustworthiness judgments on novel faces. By comparing the two groups in both studies, we could determine how deep engaging in business would impact interpersonal trust.

Study 1

Participants

We recruited 30 junior college students majoring in economics (15 men and 15 women) and 30 third-year college students majoring in humanities and social sciences (15 men and 15 women) to participate in the study. All participants' ages were between 20 and 22 with normal or corrected vision.

Materials and Procedures

Fifty (50) neutral male faces and 50 neutral female faces were selected randomly from the Chinese Facial Affective Picture System (CFAPS). The trustworthiness of each face was evaluated by 16 college students on a scale ranging from 1 (extremely untrustworthy) to 7 (extremely trustworthy). We chose the top 10 as the trustworthy faces and the bottom 10 as the untrustworthy faces (Figure 1). The average trustworthiness score of trustworthy faces (M = 4.68, SD =.20) was significantly higher than that of untrustworthy faces (M = 3.36, SD =.20), $F(1, 18) = 208.95$, $p<.001$, $\eta_p^2 = .921$. There was no difference between the attractiveness of trustworthy faces (M = 4.16, SD =.30) and untrustworthy faces (M = 4.08, SD =.23), $F(1, 18) = .37$, $p> .05$, $\eta_p^2 = .020$. That is, the two sets of faces could be used in the study.

Figure 1. **Examples of Trustworthy (Left) or Untrustworthy (Right) Novel Neutral Faces**

Participants were informed that the study aimed to test their first impressions of the photographed novel faces. After the participants were familiar with the procedure, they were randomly exposed to the face stimuli, one after another. Every face was presented for 100ms, following a "+"appearing in the center of the screen. Participants had up to 10s after each face to judge its trustworthiness and attractiveness on scales ranging from 1 to 7, same as the evaluation procedure.

Results and Discussion

We performed a 2 (Specialty: economics vs. others) * 2 (Face type: trustworthy vs. untrustworthy) analysis of variance (ANOVA) with attractiveness judgment scores as the dependent variable. There were no significant main effects or interactions (all *p*s > .05). That is, the attractiveness of the faces were controlled well.

Further, a 2 (Specialty: Economics vs. others) * 2 (Face type: trustworthy vs. untrustworthy) analysis of variance (ANOVA) with the trustworthiness judgment score as the dependent variable was conducted. Participants gave higher trustworthiness scores to trustworthy faces than to untrustworthy faces, F (1, 58) = 131.99, p< .01, η_p^2= .695. However, the main effect of specialty was not significant, F (1, 58) = 2.17, p = .146 > .05, η_p^2= .036. Instead, the specialty * face type interaction was significant, F (1, 58) = 7.61, p< .01, η_p^2= .116.The simple effect analysis revealed that for trustworthy faces, participants majoring in economics (M= 3.86, SD =.71) gave significantly lower trustworthiness scores than those majoring in other specialties (M=4.28, SD =.67). For untrustworthy faces, there was no significant difference (Figure 2).

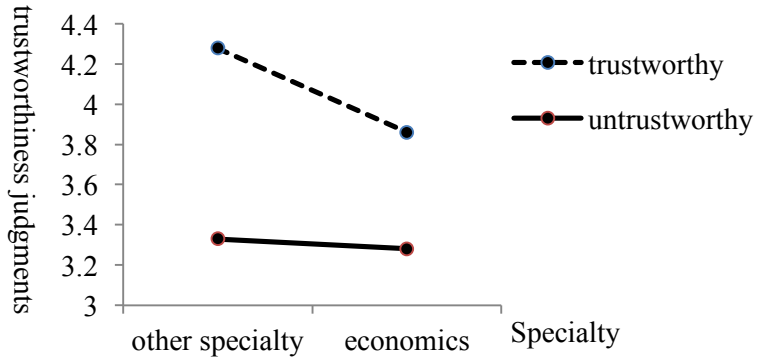

Figure 2. **The Interaction of Specialty and Face Type on Trustworthiness Judgments of Novel Faces**

Therefore, students majoring in economics tended to lower their trustworthiness judgments compared with those majoring in other specialties, and this effect was only found on trustworthy faces. Based on the former researches, we supposed that students majoring in economics may be absorbed in a culture with more emphasis on *homo economicus belief* and this belief may form a more skeptical assumption about human nature, so that they may behave differently when faced with novel faces. But the present study did not manipulate the variable of interest and only presented correlational conclusions. Thus, we designed Study 2 to operate on the extent that one may engage in business to establish a causal link.

Study 2

Participants

We recruited 60 junior college students majoring in non-economic specialties (30 men and 30 women) to participate in the present study. All participants were between ages 20 and 22 with normal or corrected vision.

Materials and Procedures

We used the same face stimuli as in Study 1. Participants were randomly assigned to one of two groups. In one group, they were required to imagine themselves as a bank employee and in another group they played the role of a social worker. They were required to read and transcribe a short message (142 words) describing either a bank employee's or a social worker's work life. In this way, we aimed to manipulate the extent to which they engage in business. Following the above priming condition, participants were presented with face photographs and asked to make trustworthiness judgments using the same procedure as in Study 1.

Results and Discussion

We performed a 2 (Occupation: bank employee vs. social worker) * 2 (Face type: trustworthy vs. untrustworthy) analysis of variance (ANOVA) with the trustworthiness judgment score as the dependent variable. Participants gave a higher trustworthiness score to trustworthy faces than to untrustworthy faces, F (1, 58) = 101.36, p< .05, η_p^2= .636, while the main effect of the occupation was not significant, F (1, 58) = 1.46, p> .05, η_p^2= . 024. Again, the occupation * face type interaction was significant, F (1, 58) = 4.25, p< .05, η_p^2= .068. Simple effect analysis revealed that for trustworthy faces, participants primed as bank

employees (*M* = 4.00, *SD* =.52) gave significantly lower trustworthiness scores than those primed as social workers (*M* =4.35, *SD* =.66). But for untrustworthy faces, there was no significant difference (Figure 3).

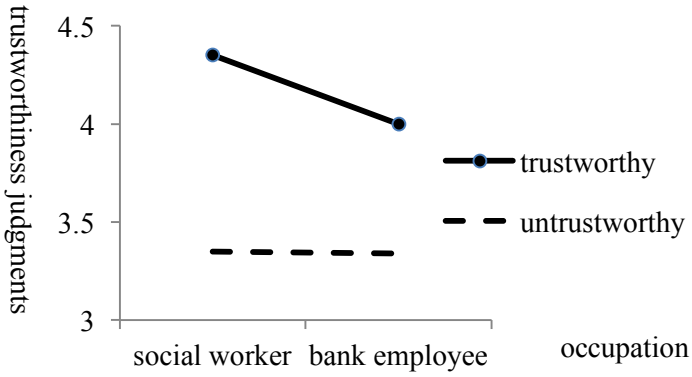

Figure 3. **The Interaction of Occupation and Face Type on Trustworthiness Judgments of Novel Faces**

By adopting a priming paradigm, we found similar patterns as that in Study 1. Students imagining to engage in business tended to lower their trustworthiness judgments on novel faces than those students imagining themselves as social workers. Similarly, this effect was only observed with the faces with higher trustworthiness levels. In this way, we replicated the correlational results in Study 1 and can draw a causal conclusion.

General Discussion

We designed two studies to investigate whether engaging in business would impair an individual's trustworthiness judgment on novel faces. In Study 1, we directly compared the trustworthiness judgment of the college students majoring in economics and those majoring in other specialties. And in Study 2, students majoring in non-economic specialties were required to imagine working as a bank employee or as a social worker. The two studies pinpointed to the same conclusion: individuals engaging in business were inclined to exhibit lower trustworthiness levels when judging novel faces, but this effect was only found for trustworthy faces. Thus, a business culture was indeed destructive to interpersonal trust.

In the whole research, there was a basic hypothesis: people may learn and internalize the *homo economicus belief* when engaging in business. According to this belief, people in communication aim to pursue the maximum of their own utilities and always weigh costs and benefits rationally in order to make a better decision. Not only does thinking this way influence an individual's behavior, it makes people consider others as self-interested too, which is opposite to the essential meaning of trust which is believing others are kind and reliable. Once the *homo economicus belief* was activated, individuals tended to hold a prudent, suspicious and alert mind-set and were more cautious with strange stimuli, leading to impaired trustworthiness judgments.

But do we have to internalize the *homo economicus belief* so that our interpersonal trust is be impaired? Following this vein, the results of the present study might seem confusing. In Study 1, all participants were junior college students. Before they enter into colleges, they have already formed their basic assumptions about human nature during basic education and daily interactions with people. Would two years' professional training change their beliefs so dramatically? And in Study 2, students from non-economical specialties only were required to play the role of a bank employee and their judgments of trustworthiness

on novel faces were impaired to a similar extent as that in Study 1. Internalizing the *homo economicus belief* cannot happen in such a short period.

Therefore, different from Xin, et al.'s (2013) assumption, we propose that we do not need to learn and internalize the *homo economicus belief*; instead, this belief has already been presented in our daily world. In this way, we may mutually hold two kinds of beliefs about human nature, one is the *homo economicus belief* and the other would be *homo sociologicus belief.* That is, we are social in nature while we are economical animals in the meantime. To what extent these two contradicting beliefs win over another depends on the environment we are situated in. Therefore, either majoring in economics or role-playing as a bank employee plays a role of an identity cue and may activate the *homo economicus belief* and further impair interpersonal trust. This view is consistent with a recent study on the dishonesty behavior of bank employees. Only when their professional identity was activated, the bank employees started to behave more dishonestly compared with the control group (Cohn, Fehr, & Maréchal, 2014).

It is also notable that this impairment of the trustworthiness judgment on novel faces was only found when the faces themselves were trustworthy. From the perspective of evolutionary psychology, avoiding loss is more important than seeking gain. Negative information, particularly a threat, or harmful stimuli, is closely connected with human survival and plays the role of a warning signal. Todorov, Pakrashi and Oosterhof (2009) revealed that there is a negativity bias in judgment to faces' trustworthiness in that individuals were more sensitive to the untrustworthy faces. Further studies suggested that the human amygdala response was more sensitive to negative faces (Said, Baron, & Todorov, 2009) and this response decreased when faces' trustworthiness increased (Engell, Haxby, & Todorov, 2007). Therefore, whether engaging in business or not may not impact untrustworthy faces given the heightened sensitivity. After one's *homo economicus belief* is activated, only his judgment on trustworthy faces' trustworthiness will be impaired.

In general, the present results proved that engaging in business impaired the trustworthiness judgments on novel faces which are trustworthy, per se. These results concur with those seen in other studies on trust, but its cognitive, neural and social psychological mechanism is still waiting to be explored and verified.

References

Berg, J., Dickhaut, J., & McCabe, K. (1995). Trust, reciprocity, and social history. *Games and Economic Behavior, 10*(1), 122-142.

Bonnefon, J. F., Hopfensitz, A., & De Neys, W. (2013). The modular nature of trustworthiness detection. *Journal of Experimental Psychology: General*, *142*(1), 143-150.

Cosmides, L., & Tooby, J. (1992). Cognitive adaptations for social exchange. In J. H. Barkhow, L. Cosmides, & J. Tooby (Eds.), *The Adapted Mind and the Generation of Culture,* (pp. 163-228). Oxford, England: Oxford University Press.

Cohn, A., Fehr, E., & Maréchal, M. A. (2014). Business culture and dishonesty in the banking industry. *Nature*, *516*, 86-89.

Engell, A. D., Haxby, J. V., & Todorov, A. (2007). Implicit trustworthiness decisions: Automatic coding of face properties in the human amygdale. *Journal of Cognitive Neuroscience, 19*(9), 1508-1519.

Ma, D. (2008). Trust, origins of social trust, and its transitions in Mainland China. *Open Times*, (4), 72-86.

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review*, *20*(3), 709-734.

Oosterhof, N. N., & Todorov, A. (2008). The functional basis of face evaluation. *Proceedings of the National Academy of Sciences of the USA*, *105*(32), 11087-11092.

Porter, S., England, L., Juodis, M., ten Brinke, L., & Wilson, K. (2008). Is the face a window to the soul? Investigation of the accuracy of intuitive judgments of the trustworthiness of human faces. *Canadian Journal of Behavioural Science*, *40*(3), 171-177.

Porter, S., & ten Brinke, L. (2009). Dangerous decisions: A theoretical framework for understanding how judges assess credibility in the courtroom. *Legal and Criminological Psychology, 14*(1), 119-134.

Rule, N. O., Krendl, A. C., Ivcevic, Z., & Ambady, N. (2012). Accuracy and consensus in judgments of trustworthiness from faces: Behavioral and neural correlates. *Journal of Personality and Social Psychology*, *104*(3), 409-426.

Sapienza, P. & Zingales, L. (2012). A trust crisis. *International Review of Finance*, *12*, 123-131.

Stirrat, M., & Perrett, D. I. (2010). Valid facial cues to cooperation and trust male facial width and trustworthiness. *Psychological Science*, *21*(3), 349-354.

Todorov, A., Baron, S.G., & Oosterhof, N. N. (2008). Evaluating face trustworthiness: A model based approach. *Social Cognitive and Affective Neuroscience*, *3*(2), 119-127.

Todorov, A., Pakrashi, M., & Oosterhof, N. N. (2009). Evaluating faces on trustworthiness after minimal time exposure. *Social Cognition*, *27*(6), 813-833.

Willis, J., & Todorov, A. (2006). First impressions making up your mind after a 100-ms exposure to a face. *Psychological Science*, *17*(7), 592-598.

Winston, J. S., Strange, B. A., O'Doherty, J., & Dolan, R. J. (2005). Automatic and intentional brain responses during evaluation of trustworthiness of faces. *Nature Neuroscience*, *5*(3), 277-283.

Wout, M. V., & Sanfey, A. G. (2008). Friend or foe: The effect of implicit trustworthiness judgments in social decision-making. *Cognition*, *108*(3), 796-803.

Xin, Z., Dou, D., & Chen, C. (2013). Does knowledge of economics encourage interpersonal distrust? Impact of economic learning on interpersonal trust in undergraduates. *Advances in Psychological Science*, *21*(1), 31-36.

Xin, Z., & Liu, G. (2013). *Homo economicus belief* inhibits trust. *PloS One*, *8*(10), e76671.

Xin, Z., & Zhou, Z. (2012). A cross-temporal meta-analysis of changes in Chinese college students' interpersonal trust. *Advances in Psychological Science*, *20*(3), 344-353.

Xu, F., Cai, W., Ma, F., & Wu, D. (2013). Evaluation of face trustworthiness and its relationship with trust propensity. *Studies of Psychology and Behavior*, *11*(4), 433-439.

Xu, F., Zou, R., Ma, F., & Wu, D. (2012). Automatic processing of undergraduate students' trust judgment based on face. *Psychological Development and Education, 28*(5), 449-455.

Zucker, L. G. (1986). Production of trust: Institutional sources of economic structure, 1840-1920. *Research in Organizational Behavior*, *8*(1), 53-111.

The Matching Effect Between Construal Level and Information Framing on Attitudes

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[Abstract] *Effective persuasive information can affect personal environmental protection attitudes. Recently some studies have focused on the matching effect between regulatory focus and goal framing on persuasion. Based on these studies, this purpose of this paper is to examine the matching effect between construal level and goal framing, and its positive effects on persuasion. The results indicated that the matching effect between construal level and goal framing had a positive effect on persuasion. Likewise, when low level construal and high level construal respectively matched with loss framing and gain framing, people were more likely to be persuaded by the information. The findings had certain practical implications for public education and publicity of environmental protection in China.*

[Keywords] *construal level; goal framing; matching effect*

Introduction

In the period of social transformation, China is confronted with the dual task of developing the economy and protecting the environment. China has, in the process of promoting its overall modernization program, made environmental protection one of its basic national policies, regarded the realization of sustainable development as an important strategy and carried out large-scale measures for pollution prevention and control throughout the country, as well as ecological environment protection.

Chinese common people also need to alter their consumption behaviors to avoid irreversible and devastating effects to environment. In 2007, the China Environmental Culture Promotion Association (CECPA) conducted a study to examine people's livelihood index of environmental protection. The study measured three indicators for Chinese common people: environmental protection consciousness, environmental protection behavior and environmental protection satisfaction. The results showed most Chinese common people had not set up the idea for sustainable development.

The concepts of "Environmental action" (Hungerford & Peyton, 1976), "citizen participation" (Hudspeth, 1983) and "responsible environmental behavior" (Smith-Sebasto & D'Costa, 1995) all emphasized the active participation and the practical action of citizens. They also proposed that how to affect the public's environmental protection attitudes, which depends on the effective public education and publicity to persuade them to effectively participate in the environmental protection career. Thus, the present research focuses on the effectiveness of persuasive information about environmental protection.

Conceptual Background and Hypotheses

Construal Level and Attitudes

Construal Level Theory (CLT) is a theory about mental representational state. CLT divides mental construals into two levels: the high-level and the low-level. According to CLT, individuals use concrete, low-level construals to represent near events and abstract high-level construals to represent distant events. A low-level construal is more concrete in terms of specific, subordinate, and contextualized features,

whereas a high-level construal is more abstract in that it represents events in terms of general, superordinate, and decontextualized features (Liberman & Trope, 1998; Trope, 1986, 1989). High-level construals highlight the values of an action's end-state, that is, why or with what effect one acts. Therefore, abstract and global features of an attitude target are represented at high level. On the contrary, low-level construals emphasize the means or resources used to reach the end-state of an action, that is, how or with what process one acts. Thus, concrete and local features of an attitude target are represented at low level (Lee, 2012).

Goal Framing and Attitudes

Among the various information features that might influence the degree of information processing, one natural feature is whether the appeals of the information are gain-framed or loss-framed. Goal-framing effects occur when the persuasive information has different appeal depending on whether it stresses the positive (desirable) consequences of performing an act to achieve a particular goal or the negative (undesirable) consequences of not performing the act (Levin, et al., 1998). Mostly prior work has suggested that people tend to choose positive results but avoid negative results (loss aversion), thus loss-framed information is more persuasive than gain-framed information (Higgins, 2000, 2002; Lee & Aaker, 2004).

Previous research largely concentrated on individual's health intentions and behaviors. Information about health emphasized the benefits of taking action (i.e., a gain-framed appeal) or the costs of failing to take action (i.e., a loss-framed appeal). Similarly, the present research will focus on the information of environmental protection which needs people to concern about personal gain or loss.

Matching Effect between Construal Level and Goal Framing

The matching between the mental representational states and the information representational state could make the information more effective on individuals when they are confronted with persuasive information (Schwarz & Clore, 1983). In a situation with a negative, undesirable end state, people would consider specific means of action alternatives by which they could increase a chance to steer away from the undesirable end state, feasibility concerns, which reflect "how aspects" of an action, would be stressed. People would focus on local details of the means and adopt concrete processing of action alternatives, that is, people would avoid negative, undesirable consequences by using low-level construals. In contrast, in the situation with a positive, desirable end state, desirability concerns which reflect "why aspects" of an action would be highlighted (Förster & Higgins, 2005; Lee et al., 2010; Chandran & Menon, 2004).

Accordingly, we propose the following hypothesis:

> *H1. There is a matching effect between construal level and goal framing, and the matching would increase persuasive effect of information on individuals.*

Regulatory Focus and Emotion

Regulatory focus has a close relation to goal framing in theory. Regulatory focus theory defined two distinct self-regulation strategies: one strategy emphasized the pursuit of gains (or the avoidance of nongains) and aspirations toward ideals, termed promotion focus; the other emphasized the avoidance of losses (or the pursuit of nonlosses) and the fulfillment of obligations, termed prevention focuses (Higgins, 2002). Approach goals (i.e., gain-framed appeals) that strive toward a desirable end-state tend to be more compatible with a promotion focus, whereas avoidance goals (i.e., loss-framed appeals) that seek to keep

away from an undesirable end-state tend to be more compatible with a prevention focus (Higgins, 2002). Therefore, we need exclude the moderating effect of regulatory focus.

H2. Regulatory focus didn't act as a moderator between the matching effect and attitude.

Framing effect was specifically associated with emotion. De Martino, et al. (2006) proposed that the framing effect was an affect heuristic, which was a subconscious process that shortened the information processing course and allowed people to function without having to complete an extensive search for information. Kahneman and Tversky suggested different framing could evoke different emotion: positive framing (e.g., gain framing) would arouse positive emotion responses, conversely, negative framing (e.g., loss framing) would arouse emotion responses. Thus, we also need exclude the moderating effect of emotion.

H3. Emotion didn't act as a moderator in the matching–attitude relationship.

Methodology

Subjects

A total of 110 college students participated in this study. Of all participants, 65.5% (n = 72) were female. They were randomly assigned to one of five conditions (four manipulated conditions and one baseline condition).

Materials and Procedure

This study was a 2 (construal level: high vs. low) × 2 (goal framing: gain vs. loss) between-subjects design. The dependent variable was the individual's environmental protection intention. Moreover, there were two control variables: regulatory focus and emotion. The baseline condition received no information.

Participants were to complete all the tasks on the computers throughout the whole experiment. They were first randomly assigned to plan "how" they could implement an activity or to consider "why" they would engage in the activity (Freitas, et al., 2004). In the manipulation of a high-level construal, the top of the computer screen displayed the following question, "Why do I maintain good physical health?". Meanwhile, the bottom of the screen displayed the following statement, "Maintain good physical health." The question and statement were connected by four vertically aligned boxes with upward arrows labeled "why." Participants filled in the boxes starting at the bottom and worked up to the top. The above process was designed to activate abstract mind-sets. In the contrast, during the low-level construal manipulation, the statement "Maintain good physical health'' appeared at the top of the screen and the question, "How do I maintain good physical health?", was at the bottom. The question and statement were connected by four vertically aligned boxes with downward arrows labeled "how." Participants filled them in starting at the top and worked down to the bottom, a procedure that was expected to activate concrete mind-sets (De Martino, et al., 2006).

Then the participants randomly received framing information. The manipulation of information frame either highlighted a gain-framed ("Think about what will be gained if you participate in the environmental protection activities") or a loss-framed: ("Think about what will be lost if you don't participate in the environmental protection activities") information.

We also developed a questionnaire to examine the participants' environmental protection intentions. There were five questions, for instance, "How much you are willing to participate in this activity?". The

sequence of questions was random in order to eliminate the impact of question-answer sequence. The responses were obtained on a five-point Likert scale from *strongly unwilling* (1) to *strongly willing* (5). The coefficient of internal consistency of this questionnaire was 0.786.

Finally, we used Regulatory Focus Questionnaire (RFQ; Yao, et al., 2008) and Positive and Negative Affect Scale (PANAS; Huang, et al., 2003) to measure two control variables. The former consists of two subscales: promotion and prevention focus; the latter is also comprised of two subscales: positive and negative affect. The coefficients of internal consistency of these two questionnaires were 0.712 and 0.802, respectively.

After completing the above tasks, participants were debriefed and thanked for their participation.

Data Analysis and Results

We finally collected 110 surveys, 2 responses were deleted. For further data analysis, 108 responses were used. Of all the respondents, 65.7% (n = 71) were female. Through descriptive statistics and difference tests, we found that the environmental protection intentions in four experimental groups were significantly different with baseline group. That is, when construal level was matching with goal framing, participants reported more environmental protection intentions.

We used three-factor analysis of variance to check the matching effect; meantime, we used the analysis to rule out the role of gender variable. The results indicated that there was an interaction effect between construal level and goal framing, $F(1, 70) = 18.057$, $p < 0.001$, but there was no significant interaction between construal level, goal framing and gender, $F(1, 70) = 1.152$, $p < 0.05$. Thus, there was a matching effect between construal level and goal framing, and gender variable had no effect on the matching effect.

Then, a two-factor analysis of variance was applied. The results manifested an interaction effect between construal level and goal framing was significant, $F(1, 74) = 44.493$, $p < 0.001$. Moreover, a main effect of construal level was significant, $F(1, 74) = 5.936$, $p < 0.05$. Participants primed to think abstractly at high-level construals reported more environmental protection intentions, when the persuasive information were gain-framed, than when they were loss-framed ($M_{gain} = 3.60$, $M_{loss} = 2.54$; $t(40) = 4.779$, $p < 0.001$). In contrast, participants primed to think concretely at low-level construals reported more environmental protection intentions, when the persuasive information were loss-framed than when they were gain-framed ($M_{gain} = 2.25$, $M_{loss} = 3.17$; t (34) = 4.891, $p < 0.001$) (see Figure 1). All the above results proved H1.

In addition, we used three-factor analysis of variance to examine the potential moderating roles of regulatory focus and emotion. The results suggested the three-way interaction between construal level, goal framing and regulatory focus was not significant, $F(1, 70) = 4.825$, $p < 0.05$. There were no significant interactions between construal level, goal framing and emotion (positive affect: $F(1, 66) = 0.666$, $p > 0.05$; negative affect: F (1, 66) = 0.722, $p > 0.05$). Thus, H2 and H3 were supported.

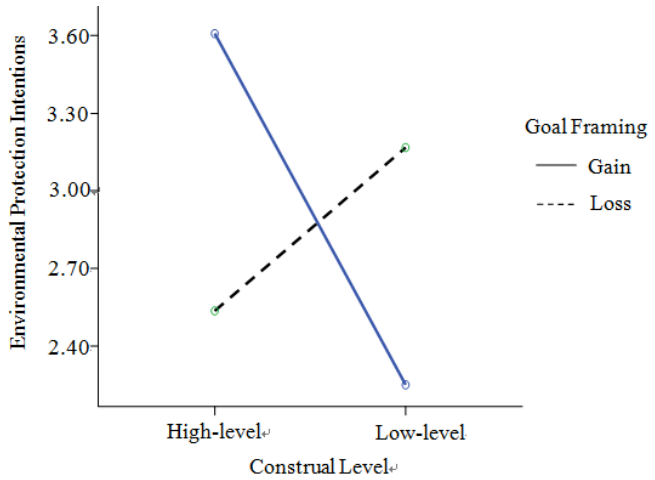

Figure 1. The interaction effect between construal level and goal framing.

General Discussion

The current study investigated the matching effect between construal level and goal framing. More specifically, this study confirmed that people with high-level construals preferentially tend to gain-framed information, whereas those with low-level construals preferentially tend to loss-framed information, and the matching effect induced more environmental protection intentions. The results in our study also showed that the information framed as a gain matched with an abstract mind-set was more effective on persuasion.

Little research about construal level has been done in the field of persuasion. Therefore, this study enlarges the application of construal level theory. All the conclusions above provide a substantive applied contribution by identifying practical solutions to influencing individuals' environmental protection intentions. A match of construal level with goal framing is likely to be a successful persuasion strategy.

What's the mechanism underlying the matching effect? More in-depth examination of the nature of the matching effect would be an interesting direction for further research. We also need investigate the potential moderating variables affecting the effect in the future study.

A main limitation of this study should be noted. The current study just collected data only from college students, in other words, this study used convenient sampling to recruit subjects. Thus, the conclusions may lack external validity. We should select a wide range of subjects to obtain a model with generality and stability.

References

Chandran, S., & Menon, G. (2004). When a day means more than a year: Effects of temporal framing on judgments of health risk. *Journal of Consumer Research*, *31*(9), 375-389.

De Martino, B., et al. (2006). Frames, biases, and rational decision-making in the human brain. *Science*, *313*(5787), 684-687.

Freitas, A. L., Gollwitzer, P., & Trope, Y. (2004). The influence of abstract and concrete mindsets on anticipating and guiding others' self-regulatory efforts. *Journal of Experimental Social Psychology*, *40*(6), 739-752.

Förster, J., & Higgins, E. T. (2005). How global versus local perception fits regulatory focus. *Psychological Science*, *16*(8), 631-636.

Higgins, E. T. (2000). Making a good decision: Value from fit. *American Psychologist*, *55*(11), 1217-1230.

Higgins, E. T. (2002). How self-regulation creates distinct values: The case of promotion and prevention decision making. *Journal of Consumer Psychology*, *12*(3), 177-191.

Huang, L., Yang, T. Z., & Ji, Z. M. (2003). Applicability of the positive and negative affect scale in Chinese. *Chinese Mental Health Journal*, *17*(1), 54-56.

Hudspeth, T. (1983). Citizen participation in environmental and natural resource planning, decision making and policy formulation. In A. Sacks, et al. (Eds.), *Current Issues in Environmental Education and Environmental Studies*, (Vol. 8, pp. 23-36). Columbus, OH: ERIC Clearing for Science, Mathematics, and Environmental Education.

Hungerford, H. R., & Peyton, R. B. (1976). *Teaching environmental education*. Portland, ME: J. Weston Walch.

Lee, A. Y., & Aaker, J. L. (2004). Bringing the frame into focus: the influence of regulatory fit on processing fluency and persuasion. *Journal of Personality and Social Psychology*, *86*(2), 205-218.

Lee, A. Y., Keller, P. A., & Sternthal, B. (2010). Value from regulatory construal fit: the persuasive impact of fit between consumer goals and message concreteness. *Journal of Consumer Research*, *36*(5), 735-747.

Lee, Y. K. (2012). Unveiling the underlying mechanism for the matching effect between construal level and message frames: how and why do matches between gain versus loss frames and construal level enhance persuasion? *Business Administration Dissertations*, Paper 4.

Levin, I. P., Schneider, S. L., & Gaeth, G. J. (1998). All frames are not created equal: A typology and critical analysis of framing effects. *Organizational Behavior and Human Decision Processes*, *76*(2), 149-188.

Liberman, N., & Trope, Y. (1998). The role of feasibility and desirability considerations in near and distant future decisions: A test of temporal construal theory. *Journal of Personality and Social Psychology*, *75*(1), 5-18.

Schwarz, N., & Clore, G. L. (1983) Mood, misattribution and judgment of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, *45*(3), 513-523.

Smith-Sebasto, N. J., & D'Costa, A. (1995). Designing a Likert-type scale to predict environmentally responsible behavior in undergraduate students: A multistep process. *The Journal of Environmental Education*, *27*(1), 14-20.

Trope, Y. (1986). Identification and inferential processes in dispositional attribution. *Psychological Review*, *93*, 239-257.

Trope, Y. (1989). Levels of inference in dispositional judgment. *Social Cognition*, *7*, 296-314.

Sanna, L. J., et al. (2009). Construing collective concerns: Increasing cooperation by broadening construals in social dilemmas. *Psychological Science*, *20,* 1319-1321.

Yao, Q., et al. (2008). Measurement of regulatory focus: The reliability and validity of Chinese version of regulatory focus questionnaire. *Chinese Journal of Applied Psychology*, *14*(4), 512-516.

Research on the Psychological Reason for the Difficulties of Graduate Employment from the Perspective of "Digital Natives" in the Digital Age

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[Abstract] *Considering the difficulties of college students' employment today, we analyzed the psychological reason in the background of informatization. From the students' psychological motivation, we presented the three contradictions that the college students were experiencing in job hunting: the contradiction between the individual and society, between the individual and family, and in the individual itself. With the advent of the digital age, the college students today are called "digital natives" who have grown up with digital technology and Internet, and it is claimed that they have developed quite different thinking styles from the previous generations. Based on the analysis of the social informatization, we argue that students should develop the psychological characteristics of initiative, activity, and independence, to achieve the changes in accessing information, processing the information, and choosing a career in coordination with the digital age, to reach the balance of personal values, family values, and social values in employment.*

[Keywords] *psychological reason; difficulties of graduate employment; digital natives; digital age*

Introduction

In recent years, China's high education has made rapid development, as well as the number of college graduates. According to the Ministry of Education (MOE, 2014), the number of college graduates increased from 3.26 million to 7.13 million from 2005 to 2014. Students' Employment is facing unprecedented challenges. According to the data analysis by Lou (2014), the initial employment rate of 2008, 2009, 2010, 2011, 2012 and 2013 graduates were 68.0%, 68.0%, 76.6%, 77.8%, 75.4%, and 77.4% separately, which means about 25% graduates could not find a job when they graduated. The difficulties for college students' employment have drawn increasing attention from the entire society.

Generally speaking, the difficulties for the employment of graduates lies in the current context of adjusting the economic structure and economic growth mode in this information society, but the psychological status of graduates can not be ignored. Contemporary college students are digital natives who were born in the 1990s. They grew up with computers, cell phones and other digital technologies. Prensky (2001) proposed characteristics of digital natives that includes twitch-speed, multitasking, random-access, graphics-first, active, connected, fun, and fantasy, etc. From the perspective of great influence of information technology on society, the difficulties of employment that college graduates are experiencing are not only associated with the human resources reform and the development of Chinese society, but also associated with the digital native's psychological struggling for a lifestyle that balances between the physical world and digital world. Thus, from the perspective of the influence of information

technology on students, studying digital natives' psychological changes, and analyzing the psychological reasons for the difficulties of employment, are some of the ways to solve the employment problem of college students.

Psychological Phenomenon of College Students' Job Hunting

The difficulties of college students' employments, mainly lie in the structural contradiction, which reflects in the increasingly prominent imbalance of geographical human resources. The Midwest and other underdeveloped areas are in urgent need of the talents, but students don't want to take the job opportunities in these areas. The reasons why so many college students are unemployed with so many job opportunities vacant are puzzling. The psychological phenomena for college students hunting jobs were analyzed in this paper as the following.

Psychological Dependence

Born in 1990s, growing up in the times of Chinese reform, college students are almost the only-one-child in their families. Their parents hold great expectations for them, and satisfy them unconditionally with their best. The only task for college students is studying, and as a result they have no time to improve their abilities of living and social communication. When they have to look for a job after graduation, they depend heavily on their parents, relatives, teachers and so on. According to the investigation by Liu (2010), 55% of college students were influenced by their parents when making decisions on jobs, while 41% got job information from their relatives.

Psychological Blindness

College students have a blind point to the indistinct understanding about themselves, careers and the society. From investigations by Zeng (2008) of six universities in western China, only 38.9% students had a vague knowledge about their characters, abilities and specialties, while 36.9% didn't know what kind of job they were absolutely suited for. The questionnaire in Ningbo University by Ruan (2009) conveyed that only 9.8% students had clear ideas about the job they were suited to, 80.8% were vague about their abilities and interests, and 9.4% said they had no idea about themselves at all. When it came to job-hunting conditions and policies, 40.17% did not know or did not notice the importance (Cai, & Tian, 2009).

Psychological Passiveness

As influenced by the graduation assignment mode in the planned economic era of the 1980s and 1990s, many college students mistakenly believed that colleges should take responsibility for the jobs of graduates and that the colleges would not let graduates be unemployed. The "waiting" phenomenon is serious. College students passively wait for employment information provided by universities or teachers. According to statistics (Liu, 2010), 41% of employment information that graduates received was from universities, and only 16% of employment information was obtained from the job market.

Negative Emotions

According to the survey by Liu (2010), senior students scored significantly higher than freshman in negative response and anxiety or depression, and college students' negative emotional experiences were significantly higher than the national norm, indicating that the psychological pressure of employment on current college students is too large to a certain degree. Some college students do not want to be employed and do not understand the significance of employment on their own, and on the other hand,

some believe it is the university and parents who want them to be employed, and therefore, they have psychological conflicts, procrastination behaviors, and mood swings for employment.

Psychological Reason for the Difficulty of Students' Employment

"Employment" is generally understood as finding a job, but we argue that the difficulty of employment for Chinese college students is no longer just about finding jobs. Although the great number of graduates and limited employment growth is one of the causes of employment difficulties, the more important reason is the imbalance of employment in the area, industry, and gender. Some regions or industries provide job opportunities, but students don't want to take the jobs. We propose that social value, family value and self-worth are the three value levels for college students' employment and analyze the employment difficulties from this aspect. We find the three values conflict due to historical and practical reasons, which leads to the difficulties of college students' employment. Deep analysis of specific conflicts between the three levels of value will promote a better understanding of the psychological motivation of the difficulties for the employment of university students. We propose the three contradictions as the psychological reasons for the difficulties of college students' employment: the contradiction between the individual and society, the contradiction between the individual and the family, and the internal contradictions of the individual.

Contradiction Between the Individual and Society

Digital natives were born and have grown up in the digital and Internet environment, and they are accustomed to "self-demand" (Tapscott, 2008). When choosing a career, they are more likely to consider "what I like" and "how to achieve self-interest and self-value"; while less consideration is given to the needs of others and social development (Wang, Zhang, & Du, 2014). The mismatch or conflict emerged inevitably between the jobs provided by society and the ability and knowledge structure of college graduates.

A survey by Huang (2010) on the employment situations of college students in Beijing indicated that salary and welfare, development opportunities, and interests were the three most important factors influencing a university student's job-hunting. The survey showed that 76.1% of graduates would like to work in Beijing, 4.3% and 3.9% graduates would like to work in Shanghai and Guangdong, and only 2.1% and 2.8% would like to work in the middle and western regions. However, with the development the middle and western regions, more job opportunities are provided. In the industry choices, 18.3% intended to work for the government as civil servants, however, only a limited number of civil service positions are offered by the government.

Affected by globalization and China's economic development, the thought of consumerism and economic supremacy dominated the public opinion in our society, which led to distinguishing the nature of work by income, comfort, and tightness to the political system. The traditional saying, "All kinds jobs can make one success" iss no longer right. The public opinion of consumerism and economic supremacy used its tremendous power to sweep individuals forward for earning more money. There are two examples which clearly convey the differences in public opinion. In 2000, Buxuan Lu, a graduate from one of the topmost universities in China – Beijing University, chose to sell pork instead of becoming a teacher. The public thought it was hard to understand, such an excellent student from the top university, could abandon his knowledge background to pick up a knife and began selling pork (Baidu, 2014). In 2006, another graduates from Beijing University named Chen Sheng sold pork again, and the mass media said he was a legendary figure because his company had earned 200 million yuan in 2 years (Sina.com,

2013). Money has become the first evaluation scale to assess a job in contemporary society. Digital natives who were born in 1990 were present at this patchwork of public opinion. They often feel the contradiction between themselves and the public opinion of the society.

Contradiction Between the Individual and the Family

Affected by Chinese history and the traditional "imperial examination system", many parents still regard education as an important way to change the fate of their children. The old Chinese saying, "To be a scholar is to be the top of society," is still popular with parents who believe learning is the only task for their child. Many families even make every effort to support their kids to finish university learning, wishing their children to "succeed" in finding a decent job with high salary in their perspective (Liu, 2010). The digital native graduates grew up with the Internet and digital devices, and their ways of thinking and expression fundamentally changed from the previous generation. They are more self-aware, claiming equality with parents, demanding respect from their parents, rather than realizing the expectations from them. Not only do they want to find a job, but they also want some promotions in their careers and self-development. They are not satisfied with learning knowledge any more; what they pay most attentions to is being an independent individual, deciding for themselves and promoting themselves. There are fierce conflicts in finding jobs between generations. While parents think high salaries and low risks are the most important aspects of an ideal job, their children feel that they should realize their ideas and values through their jobs. Many parents make decisions about their children's jobs and lives, "for the children's good", while the children are in fierce conflicts; they don't know whether to accept being obedient or refuse to lose job opportunities because their families use so much money to educate them.

The decentralization from informatization makes the family-centered model collapse, which leads the traditional structure and model of family to begin to change. The reliant relationship of one to family has been changed, and the responsibilities of one to family have also changed. In the traditional family structure, every adult should take the responsibility of supporting their families, which guarantees the development of a family. There's an old saying, a "child should not travel to distant lands when his parents are alive," which demonstrates that one's job should be restricted to the surrounding area of his family and therefore, guarantees the stability and safety of the family to the most extent. The family value of jobs is magnified, but personal and social values are weakened.

Nowadays, with the economic development and improvement in peoples' living standards, the survival function of university students' jobs begins to decline, while the personal value of jobs begins to show clearly. University students show great understanding about living apart in different cities because of their jobs. When the individual replaces the family to be the tiniest unit of society, how to balance the family responsibility and one's freedom are the problems the university students are facing.

The Internal Contradictions of the Individual

As digital natives, university students are the main body of Internet users. Their expressions change a lot – they are fond of using Internet phrases and new words, inclined to expressing their feelings and emotions in spite of paying close attention to social surroundings or others. Their models of inter-personal communication also change –: they are used to sitting in front of a computer to communicate via emails and social communication apps rather than talking with others face-to-face. Faced with so much information and its quick delivery, many of them become addicted to the Internet, and many feel rushed and disorderly, unconcentrated with no strength. When they turn to the real world to find a job, they feel

anxious and unadaptable. How to keep the balance between the real world and the virtual world, and how to remain calmer and at ease in digital life, are urgent problems for the college students.

Because of the model of Chinese entrance examinations for college, students have formed a psychology of dealing with exams even before they enter universities. Their impetus for entering university are outdated – they only learn what the exams check and what the teachers deliver, they don't know what they really need and are interested in. When they graduate and have to find jobs, their abilities of dealing with exams and getting high scores are not the most important. Instead, every organization has its unique demands for employees, such as the abilities of inter-personal communication and teamwork, etc. When high scores in exams are no longer the impetus, college students have to find their inner-impetus for finding jobs which comes from deep within their hearts. But in fact they are lost; they are not suitable when the outer evaluation standards such as exams and scores disappear, and they don't know what to do in order to find jobs.

The New Demands on Students' Employment in the Digital Age

In this digital age, China is experiencing great changes in every walk of life by informatization. Informatization is a well-known Chinese academic construct, but is relatively unknown in Western academia (Huang, Chen, Yang, & Loewen, 2013). There are three levels of informatization: the basic technology existence, the structural social existence, and life of the individual existence (Ye, 2011). It begins at the basic technical level, and then all aspects of social life will be saturated, but at the same time, people's survival and development are profoundly impacted. The three levels of informatization bring new demands on graduate employment, which could be described as initiative, active and independent as the psychological characteristics of graduates in the information society.

Initiative: Changes in Accessing Information from Self-Value

Students are passive and utilitarian in the traditional learning approach. Students only learn what teachers deliver, and they only learn what will appear in the exams. In the traditional family education, children have to obey their parents' ideas. Therefore, students never know what they want to learn and what they should learn. However, in the process of hunting a job, college students have to figure everything out by themselves with no standard answers. They have to use their initiative to find job information and do the interviews, so therefore, they start to wonder about their self-worth and how to achieve it.

For college graduates, the first item to be clarified in job hunting is self-value, which means what is the significance of job-hunting for personal development. Students need to be liberated from the past mode of relying on their parents and teachers, and use their own initiative to find job information and expand their learning approaches by using information technologies in this digital age. Armed with information technology, students will gradually clarify and understand their self-worth by learning, comparison, and analysis. Only by understanding their self-worth, could individual students transform from passive to active.

Active: Changes in Processing Information by Linking with Society

In traditional school education, teachers deliver the conclusive knowledge to students in class, and students repeat and verify the conclusive knowledge through notes and practice after class. Students do not master such a conclusion by verifying the accuracy and applicability of the knowledge. They learn the knowledge or information, but they lack questioning, scrutiny, and the verification process. Therefore, students always find it difficult to use their knowledge in practice. In the digital age, with multi-channel

sources of information, individuals have the possibility to link knowledge to practice in society. The learning approaches have to change to actively selecting, identifying, evaluating and creating information, to make meanings by linking knowledge with society.

In the job-hunting-oriented learning process, students need to maintain close attention to the social life. Students need the cognitive processing ability to transform their information and knowledge to social practice; they need to master a certain degree of communication skills, integrate personal interest and capacity with social needs, and develop a long-term career and life plan by coordinating the relationship between self and social demands. Only in this way, is it possible to achieve a win-win social value and self-worth.

Independent: Changes in the Way of Deciding a Career with Family Values

The traditional school education has failed to educate students in the ability to actively access and process information. In consequence, passivity, dependence, and blindness in career planning has become a universal phenomenon. With the arrival of the digital age, decentralized, personalized and individualized career planning is gradually adopted, with a balance between interests and hobbies, salary and parental expectations.

The vast amounts of information and their fast spread are bound to make society become decentralized. Peoples' living structures and lifestyles change accordingly. The original family-centered model is bound to be broken, and the pattern of individuals belonging to the family will no longer applicable. "Individual" instead of "family" now becomes the smallest unit of society.

Accordingly, the significance of individual employment, its meaning for the family, and its relationship with family development have become new issues to be discussed. Being independent is the key for individuals to confirm their employment value for family. Independence means that college students can dominate their own careers and occupations, with a clear understanding of their employment goals, and a balance of self-worth and family values.

Conclusion

In all, informatization is one of the most important backgrounds around the world and in China's economic development and social reform. It not only exists in the form of technologies, but also in influencing individuals' thinking and living styles. The research from informatization is an important viewpoint of the difficulties for college students in finding jobs. The three contradictions – the contradiction between the individual and society, the contradiction between the individual and family, and the contradiction in the individual itself – were proposed in this paper as the psychological reasons in analyzing the difficulties of students' employment in the digital age. To solve these three contradictions, students should develop the psychological characteristics of initiative, becoming active, and independence, to achieve the changes in accessing and processing information, and choosing a career in coordination with the digital age, and to reach the balance of personal values, family values and social values in employment, which will solve of the difficulties of employment for university students.

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References

Cai, Y., & Tian, H. (2009). Research on ideas of employment and solutions of college students born in 1980s – Taking "80s" college students of Shandong Normal University as an example. *Journal of Shandong Youth Management Cadre College,* (02), 44-47.

Huang, R., Chen, G., Yang, J., & Loewen, J. (2013). The new shape of learning: Adapting to social changes in the information society. In R. Huang & J. M. Spector (Eds.), *Reshaping Learning SE - 1*, (pp. 3-42). Berlin: Springer Berlin Heidelberg.

Huang, J. (2010). The employment status of students in Beijing universities. *China Statistics,* (09), 24-26.

MOE. (2014). *Educational statistics*. Retrieved from http://www.moe.gov.cn/s78/A03/moe_560/jytjsj_2014/

Liu, C. (2010). The psychological reason affecting students' employment and its influencing factors. *(Doctoral dissertation)*. Jilin University, Changchun.

Lou, Y. (2014). The challenges and opportunities for the employment of college students. *China University Students Career Guide*, (16), 26-30.

Prensky, M. (2001). Digital natives, digital immigrants, part 1. *On the Horizon*, *9*(5), 1-6.

Ruan, M. (2009). Cultivating the ability of employment for local university students. *Journal of Ningbo University, 31*(1), 59-62.

Tapscott, D. (2008). *Grown up digital: How the net generation is changing your world HC*. New York: McGraw-Hill.

www.baike.baidu.com. (2014). Lu Buxuan. Retrieved from http://baike.baidu.com/view/1926734.htm.

www.sina.com. (2008). Chen Sheng: Make the crooked ways in the end. Retrieved from http://news.sina.com.cn/s/2008-10-13/042416441456.shtml.

Wang, C., Zhang, Z., & Du, W. (2014). The analysis of profession values of college students nowadays. *Education of Chinese Electric, 2,* 225-227.

Ye, L. (2011). The school education reform in the background of globalization and informatization. http://www.360doc.com/content/11/0518/21/791185_117758369.shtml.

Zeng, H. (2008). *The psychological status for western university students' employment and the methods to optimize the status.* (Doctoral dissertation). Xinan Jiaotong University, Chengdu.

Social Identity of Online Game Groups Affects on Player's Emotions: The Role of Online Gaming Addiction

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[Abstract] *Recent research has revealed that social identity has an effect on people's emotions, but little is known about how it works in an online context. This study explores how the social identity of online game groups impact positive and negative emotions. Social Identity Rating Scale of the Online Game Groups, the Online Gaming Addiction Scale of Undergraduates, and PANAS were applied to 699 online game players. Results indicate that the social identity of online game groups have a significant effect on both positive affect and negative affect, and online gaming addiction plays a moderator between the social identity of the online game groups and negative affect.*

[Keywords] *social identity; online gaming addiction; emotion; intergroup emotions theory; negative reinforcement theory*

Introduction

As of December 2014, there were 649 million internet users in China, including 377 million online gamers (CNNIC, 2015). Most of the online games allow the users to communicate and form their own groups within the game, and the most famous online game group is the "Guild" of MMORPG. With the development of online games, online game groups are not only the derivative of online games, but also important network groups. Previous studies confirmed that high social identity of a group is more likely to be related to emotion, but most of the studies focused on the the groups offline. The current study selected the members of the "Guild" in MMORPG as research subjects, and tried to investigate the relationship between the social identity of the online game group and emotion. In addition, online game addiction was considered as the moderator.

Social Identity and Emotion

Intergroup Emotions Theory (IET) (Mackie, Devos, & Smith, 2000) extended emotion in the group level on the basis of social identity theory and self-categorization theory. Group-level emotion differs from individual emotion. It can be sparked by a group situation, not a personal incident. Furthermore, Iyer & Leach (2008) distinguished group-level emotions into two dimensions according to the emotion's subject: individual subject and group subject.

Group-level emotion focuses on the individual's emotion in terms of the group background and intergroup relation. The members of the group usually share the same group-level emotion (Maitner, Mackie, & Smith, 2007). When people belong to many groups, the more identified the group's group-level emotion impacts him (Mackie, Smith, & Ray.2008). Each group has its own emotion tendency; it diversifies the emotions of different group's people (Smith, Seger, & Mackie, 2007). Moreover, people's emotions about a group event can influence their categorization (Park, Yun, Choi, Lee, Lee, & Ahn, 2013). When they alter their group categorization, the group-level emotions change at the same time (Ray,

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Mackie, Rydell, & Smith, 2008). As a consequence, the members' group-level emotion will influence the group behavior (Rydell, Mackie, Maitner, Claypool, Ryan, & Smith, 2009)

People always experience positive affects when they consider themselves a member of a group, and they feel negative affects about the out-group (Smith, et al, 2007; Parker,& Janoff-Bulman, 2013), and the extent depends on the level of their social identity. Higher level of social identity leads to higher level of positive emotions and a lower level of negative emotions (Doosje, Branscombe, Spears, & Manstead, 1998). It may be because the strong connection with other people can enhance the people's subject well-being and mental health (Haslam, Jetten, Postmes, & Haslam, 2009). The affect commitment is one of the key aspects of social identity; people categorize themselves in the group because of the positive emotional experience (Bergami & Bagozzi, 2000). Based on the previous researches, we assume that the social identity of online game groups would be a strong predictor of a player's emotion in consideration of the games' setting in that they have to play with their group most of the time.

Online Game Addiction and Emotion

Online game addiction has been a widespread concern due to possible aggressive behavior and the social issues (Kim, Namkoong, & Kim, 2008; Ng & Wiemer-Hastings, 2005) caused by it. It also attracts the attention of psychological scholars; many studies have proved that there is a relationship between addiction behavior and emotion.

Negative reinforcement theory contends that avoiding unpleasant feelings is the main motive of addiction behavior (Wikler, 1948). Most of the drug addicted people use addiction as a way to cope with a negative affect (Wikler, 1980). Baker, et al. (2004) addressed an affective processing model to develop negative reinforcement theory. In the frame of negative reinforcement theory, it is proven that people play video games to get out of their problems (Wood. 2008), and that players become addicted in the online game to escape unhappy feelings (Bessière, 2007; Yen, Ko, Yen, Chen, Chung, & Chen, 2008; Mehroof, & Griffiths, 2010)

Some studies believe that positive affect is the reason why people have online game addiction. Online game addiction is found to be relevant to positive affect (Chiang, Lin, Cheng, & Liu, 2011), and these positive emotions strengthen the gamer's behavior to play the games next time (Orzack & Orzack,1999). It is also associated with flow experience (Chou & Ting, 2003), which is defined as a feeling of enjoyment and joy caused by extreme concentration (Ghani, & Deshpande,1994). It is the key mechanism of online games' long-time attractiveness (Voiskounsky, Mitina, & Avetisova, 2004), and can strongly affect players' addiction (Wan & Chiou, 2006).

Hypothesis

We aimed to investigate the relationship between social identity of online game groups and the player's emotion, and how online gaming addiction works in the process. Based on prior studies, we knew that people always feel a positive affect about the in-group, as a member of the group, rather than as an individual, and online game addiction has an impact on people's emotion. The players of MMORPG were chosen as subjects, because MMORPG is typical and every player needs to join a "Guild" in order to complete advanced tasks and promote to a higher level in the game. We assumed that:

> *(H1) The extent of a player's social identity of online game groups would be positively related to the positive affect;*

(H2) The extent of a player's social identity of online game groups would be negatively related to the negative affect;

(H3) Online game addiction would moderate the effect of social identity on a positive affect;

(H4) Online game addiction would moderate the effect of social identity on a negative affect.

Method

Participants

Participants were recruited through a professional research company by emails containing the link of our questionnaire, and they would receive some coupons after they finished the survey. All of the participants had to answer a few questions first to make sure that they played MMORPG in the past two weeks and were members of the "Guild" in the games. In this process, a total of 699 participants were recruited. Of the participants (68.8% males, age M=23.98, SD=4.97), 12.6% were primary and middle school students, and 41.5% were college students. 45.9% were working staff. These participants played MMORPG for 10.91 hours (SD=10.21) and 6.67 times (SD=4.19) per week on average.

Measurement

An online survey designed using Sojump.com was applied in this study. Demographic questions were also contained.

Social Identity of Online Game Groups

Participants were asked to complete the Social Identity Rating Scale for the Online Game Groups (validation α =0.736-0.942) (Tan, 2015). Participants responded on a 5-point scale to rate each target from not at all to extremely. This 25-item self-reporting questionnaire was designed to assess their social identity level in the context of online games by five subscales, including behavior commitment, maintaining group identity, in-group favoritism, group psychological belonging, and reality relevance.

Online Gaming Addiction

Participants completed eight items to measure how they were addicted to the online game. The items were adapted from the game addiction subscale of Different Types of Internet Addiction Scale for Undergraduates (validation α =0.88) (Zhou & Yang, 2006). Participants responded from 1 (strongly disagree) to 5 (strongly agree). The items were as follows: "I engage myself in the online games more than anything else"; "I always vent emotions by playing online games"; "I spent most of my spare time on online games"; "Time is always not enough to play online games; it makes me dissatisfied"; "I tried to reduce duration of playing online games, but it didn't work"; "After playing online games, I was always immersed in some plot of the game"; "Playing online games effects my study/work"; and "I missed a lot of things because of playing online games."

Emotion

PANAS (validation α =0.759) (Watson, Clark, & Tellegen, 1988, translated into Chinese by Zhang, 2005) was used to measure the participants' emotional states when they were playing games. The 20 items were rated from 1 to 5 and divided into two dimensions (positive affect and negative affect).

Results

Descriptive Statistics for all the variables are shown in Table 1. Multiple regression was used to examine the moderating effect of online gaming addiction between the social identity of online game groups and emotion. The results in Table 2 show that the social identity of online game groups was a predictor of both positive affect and negative affect. It verified H1 and H2.

The correlation between the social identity of online game groups and negative affect (r=0.033, p>0.05) was not significant. As shown in Model B of Table 2, online game addiction cannot moderate the social identity of online game groups and positive affect (H3). However, the interaction of the social identity of online game groups and online game addiction can significantly predict negative affect (H4). Figure 1 presents that players with a high level of social identity of online game groups may have lower levels of negative affect when they become more addicted to online games.

Table 1. ***Descriptive Statistics for all Variables*** *(N=699)*

	Min	Max	Mean	SD	Range
Social Identity of Online Game Groups					
Behavior Commitment	1.14	5.00	4.0938	.56239	3.86
Maintaining Group Identity	1.60	5.00	3.9599	.58618	3.40
In-Group Favoritism	1.00	5.00	3.9925	.61269	4.00
Group Psychological Belonging	2.00	5.00	4.0120	.55212	3.00
Reality Relevance	1.00	5.00	3.7979	.71793	4.00
Total	**2.07**	**4.92**	**3.9712**	**.48416**	**2.85**
Online Gaming Addiction	1.13	4.75	2.9800	.73517	3.63
Emotion					
Positive Affect	1.60	5.00	3.6117	.57846	3.40
Negative Affect	1.00	4.60	2.1355	.68490	3.60

Table 2. ***Multiple Regression Results for Emotions***

	Positive Affect		Negative Affect	
	Model A	***Model B***	***Model A***	***Model B***
Age	0.038	0.071**	-0.138***	-0.163***
Gender	-0.001	0.009	0.026	0.017
Education years	0.022	0.015	0.047	0.052
Social Identity of Online Game Groups	0.237***		-0.172***	
Social Identity of Online Game Groups* Online Gaming Addiction		0.014		-0.056**
Constant	3.612***	3.612***	2.135***	2.137***
R^2	0.182	0.019	0.113	0.058

p<0.05, **p<0.01,*p<0.001*

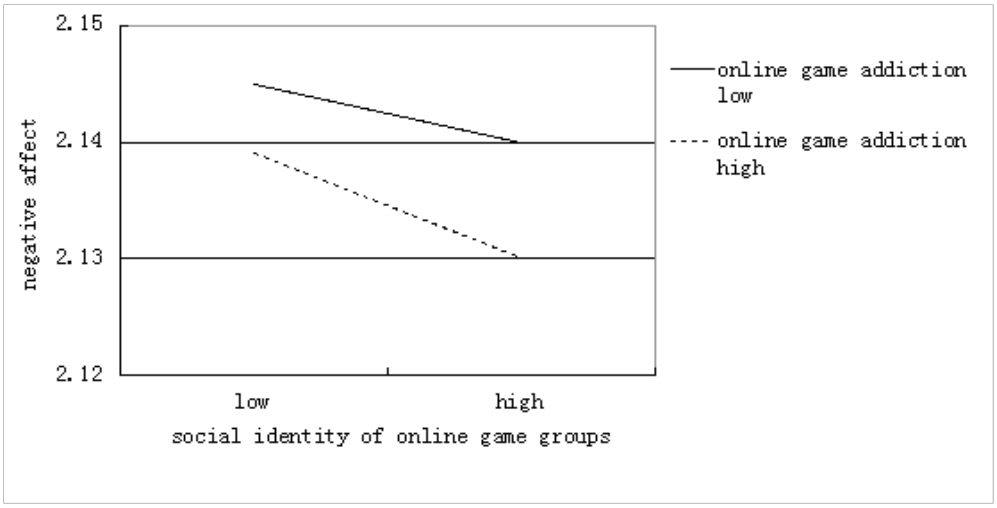

Figure 1. **Interaction of Social Identity of Online Game Groups and Online Game Addiction in Predicting Negative Affect**

Discussion

We tested the relationship between social identity of online game groups and emotions, and found that it can strongly predict positive affect and negative affect. This fit the expectation and agrees with previous studies. Cameron (2007) divided social identity into three factors: Centrality, In-group Affect and In-Group Ties. We suspected that it was the in-group affect that made the players feel a higher positive affect and lower negative affect when playing games. In addition to the possible reasons we previously mentioned, in-group ties may have an affect. Prior research shows that the interaction in MMORPG can bring enjoyment while playing online games (Cole, & Griffiths, 2007) and influence players' negative psychological symptoms (Longman, O'Connor, & Obst, 2009). But it needs to be proven in future studies.

The current study suggested that social identity of game group wasn't correlated with online game addiction. Being a high identitied member of "Guild" won't lead to the addiction of online game. In addition, online game addiction was the moderator between social identity of online game groups and negative affect. But the moderating effect for positive affect is not significant, online game addiction contributed little to the process of social identity effecting positive affect. It was similar to the results based on negative reinforcement theory: to reduce the negative affect may be the main reason why some players addict to online games, but not to increase the positive affect. However, the non-significant result about positive affect may because that most of the researches supporting the result that addiction influence positive affect used experiment method and focused on the "flow experience". We asked the participants to recall their feelings of playing games and then answer the questionnaire, it may have lost some information.

Our study chose MMORPG's player as the subject. But some online games don't emphasize game groups in their settings. If we focused on other types of online games, the social identity of the gaming group may not be the main predictor. In the interviews with game players, we discovered that some players did not regard the "Guild" as their most identitied group, but rather some informal groups. According to prior research, people are impacted by the most identitied group's group-level emotion (Mackie, et al., 2008), but we only tested the identity of the "Guild" in the study. Moreover, we adopted the questionnaire method to investigate the relationship among the variables. It may cause deviations,

especially in the measurement of the emotions while playing games. In the future studies, the experiment method is expected to be used, with more kinds of online games and the subdivision of groups should be included.

Despite the limitation, our study contributes to the understanding of how the identity of online game groups and online game addiction affects a player's emotions. The result indicate that being a member of a "Guild" makes the player happier and less unhappy while playing. And at the same time, a high addiction to games means low negative feelings. This study has broadened the intergroup emotion theory to online groups and supported the negative reinforcement theory, and may gave some inspiration on how to prevent online game addiction.

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References

Baker, T. B., Piper, M. E., McCarthy, D. E., Majeskie, M. R., & Fiore, M. C. (2004). Addiction motivation reformulated: An affective processing model of negative reinforcement. *Psychological Review*, *111*(1), 33.

Bergami, M., & Bagozzi, R. P. (2000). Self-categorization, affective commitment and group self-esteem as distinct aspects of social identity in the organization. *British Journal of Social Psychology*, *39*(4), 555-577.

Bessière, K., Kiesler, S., Kraut, R., & Boneva, B. (2007). *Effects of internet use and social resources on changes in depression*. (Unpublished manuscript). Pittsburgh: Carnegie Mellon University.

Bessière, K., Seay, A. F., & Kiesler, S. (2007). The ideal elf: Identity exploration in *World of Warcraft*. *CyberPsychology & Behavior*, *10*(4), 530-535.

Cameron, J. E. (2004). A three-factor model of social identity. *Self and Identity*, *3*(3), 239-262.

Chiang, Y. T., Lin, S. S., Cheng, C. Y., & Liu, E. Z. F. (2011). Exploring online game players' flow experiences and positive affect. *Turkish Online Journal of Educational Technology-TOJET*, *10*(1), 106-114.

China Internet Network Information Center. (2015). *The statistical report of the development of China internet network, no. 35.* Retrieved July 15, 2015, from CNNIC Web site http://www.cnnic.net.cn/hlwfzyj/hlwxzbg/201502/P020150203551802054676.pdf.

Chou, T. J., & Ting, C. C. (2003). The role of flow experience in cyber-game addiction. *CyberPsychology & Behavior, 6*(6), 663-675.

Cole, H., & Griffiths, M. D. (2007). Social interactions in massively multiplayer online role-playing gamers. *CyberPsychology & Behavior, 10*(4), 575-583.

Doosje, B., Branscombe, N. R., Spears, R., &Manstead, A. S. R. (1998). Guilty by association: When one's group has a negative history. *Journal of Personality and Social Psychology, 75*, 872-886.

Ghani, J. A., & Deshpande, S. P. (1994). Task characteristics and the experience of optimal flow in human – Computer interaction. *The Journal of Psychology, 128*(4), 381-391.

Haslam, S. A., Jetten, J., Postmes, T., & Haslam, C. (2009). Social identity, health and well-being: An emerging agenda for applied psychology. *Applied Psychology*, *58*(1), 1-23.

Iyer, A., & Leach, C. W. (2008). Emotion in inter-group relations. *European Review of Social Psychology*, *19*(1), 86-125.

Kim, E. J., Namkoong, K., Ku, T., & Kim, S. J. (2008). The relationship between online game addiction and aggression, self-control and narcissistic personality traits. *European Psychiatry*, *23*(3), 212-218.

Longman, H., O'Connor, E., & Obst, P. (2009). The effect of social support derived from *World of Warcraft* on negative psychological symptoms. *CyberPsychology & Behavior, 12*(5), 563-566.

Mackie, D. M., Devos, T., & Smith, E. R. (2000). Intergroup emotions: Explaining offensive action tendencies in an intergroup context. *Journal of Personality and Social Psychology*, *79*(4), 602.

Mackie, D. M., Smith, E. R., & Ray, D. G. (2008). Intergroup emotions and intergroup relations. *Social and Personality Psychology Compass*, *2*(5), 1866-1880.

Maitner, A. T., Mackie, D. M., & Smith, E. R. (2007). Antecedents and consequences of satisfaction and guilt following in-group aggression. *Group Processes and Intergroup Relations*, *10*, 225-239.

Mehroof, M., & Griffiths, M. D. (2010). Online gaming addiction: The role of sensation seeking, self-control, neuroticism, aggression, state anxiety, and trait anxiety. *Cyberpsychology, Behavior, and Social Networking*, *13*(3), 313-316.

Ng, B. D., & Wiemer-Hastings, P. (2005). Addiction to the internet and online gaming. *Cyberpsychology & Behavior*, *8*(2), 110-113.

Orzack, M. H., & Orzack, D. S. (1999). Treatment of computer addicts with complex co-morbid psychiatric disorders. *Cyber Psychology & Behavior*, 2(5), 465-473.

Park, H. S., Yun, D., Choi, H. J., Lee, H. E., Lee, D. W., & Ahn, J. (2013). Social identity, attribution, and emotion: Comparisons of Americans, Korean Americans, and Koreans. *International Journal of Psychology*, *48*(5), 922-934.

Parker, M. T., & Janoff-Bulman, R. (2013). Lessons from morality-based social identity: The power of outgroup "hate", not just ingroup "love". *Social Justice Research, 26*(1), 81-96.

Ray, D. G., Mackie, D. M., Rydell, R. J., & Smith, E. R. (2008). Changing categorization of self can change emotions about outgroups. *Journal of Experimental Social Psychology*, *44*(4), 1210-1213.

Rydell, R. J., Mackie, D. M., Maitner, A. T., Claypool, H. M., Ryan, M. J., & Smith, E. R. (2008). Arousal, processing, and risk taking: Consequences of intergroup anger. *Personality and Social Psychology Bulletin, 34*(8), 1141-1152.

Smith, E. R., Seger, C., & Mackie, D. M. (2007). Can emotions be truly group-level? Evidence regarding four conceptual criteria. *Journal of Personality and Social Psychology, 93*, 431-446.

Voiskounsky, A. E., Mitina, O. V., & Avetisova, A. A. (2004). Playing online games: Flow experience. *PsychNology Journal*, *2*(3), 259-281.

Tan, H. (2015). *The basic psychological process about social identity of online video game group.* Tianjin: Nankai University.

Wan, C. S., & Chiou, W. B. (2006). Psychological motives and online games addiction: A test of flow theory and humanistic needs theory for Taiwanese adolescents. *CyberPsychology & Behavior*, *9*(3), 317-324.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063.

Wikler, A. (1948). Recent progress in research on the neurophysiologic basis of morphine addiction. *American Journal of Psychiatry, 105*(5), 329-338.

Wikler, A. (1980). Conditioning processes in opioid dependence and in relapse. In A. Wikler, *Opioid Dependence – Mechanisms and Treatment,* (pp. 167-218). New York: Springer US.

Wood, R. T. (2008). Problems with the concept of video game "addiction": Some case study examples. *International Journal of Mental Health and Addiction, 6*(2), 169-178.

Yen, J. Y., Ko, C. H., Yen, C. F., Chen, S. H., Chung, W. L., & Chen, C. C. (2008). Psychiatric symptoms in adolescents with Internet addiction: Comparison with substance use. *Psychiatry and Clinical Neurosciences, 62*(1), 9-16.

Zhang, Z. J. (2005) *Behavioral medicine inventory manual*. Beijing: Chinese Medical Multimedia Press.

Zhou, Y. J., & Yang, W. J. (2007). The development of different types of internet addiction scale for undergraduate. C*hinese Mental Health Journal*, *20*(11), 754-757.

Youth's Social Mentality Behind Buzzwords

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[Abstract] *Youth are both the main creators and users of buzzwords, such as "diaosi" (refers to a man who is short, poor and ugly), "tuhao" (upstart), and "nvhanzi" (iron lady), etc. The popularity of these buzzwords encapsulates China's changing society. This paper analyzes the youth's social mentality behind buzzwords from the aspects of social cognition, social emotion and social value, and discusses the main reasons that lead to this mentality.*

[Keyword] *buzzwords; social mentality; social cognition; social emotion; social values*

Introduction

China is undergoing an unprecedented revolution. With the change of the economic system, the political system and others, not only the original stable social structure has changed, but also people's traditional behaviors and psychological states have suffered great attacks. In every society with dramatic changes, social mentality is a kind of expression and demonstration of the social transformation.

Social mentality is a kind of macroscopically social mood state that spreads over the entire society or social groups (categories) in a certain time, and it is a comprehension of mood, social consensus and social values (Yang, Y., 2006). It works as the indication and medium for social development. Language culture generates from society and affects it in return. Generally speaking, language culture reflects the changes of the society. Buzzword is a kind of language culture and social representation, which carries some social groups' living impressions, emotional attitudes, recognition of values, and awareness of behaviors.

Buzzwords are a form of discourse generally used by people in a certain time within a certain social group. Generally speaking, it is spoken language with a characteristic of dialect. Meanwhile, a buzzword is a comprehensive result of politics, economy, cultural, environment and psychological activities and is a prevalent word, phrase, sentence or special sentence model pushed forward by the media (Yang, W., 2002). There are so many researches about buzzwords in academia and the research issues are diversified. But because of the buzzwords' rapid update and dynamic nature, these researches are incomplete, not systematic, not deep. So there is large gap in the study range for the future (Wang, 2012).

Buzzwords reflect the present living condition of the society and people's desire for spiritual life in a certain period. They imply some social mentality of group members. Although there does not exist a unitary definition to the social mentality at the present time so far, researches about it are more in depth. Currently these researches can be divided into three areas: macroexamination, survey and assessment, and analysis about phenomena. We hope for more progress in the future in these aspects: the integration of

basic theory and application practice studies, mutual complementation of qualitative study and quantification study, and deep analysis of social mentality (Wan, 2014).

According to some scholars' discussion (Yang, Y., & Wang, 2013), this paper analyzes the social mentality of the youth behind the buzzwords in three aspects: social cognition, social emotion, and social value. We hope to analyze social mentality thoroughly. Social cognition is the social information of people from themselves, others and environment (Liu, Ma, & Yang, 2008). Social emotion is people's percipience of various scenarios about social life, the rather complicated and relatively stable attitude experience by interplay and interaction of a social group. The percipience and attitude experience has an instructive and dynamical effect to the individual or social group (Sha, & Feng, 2006).

Youth's Buzzwords in Recent Years

As a special group, youth are the main creators, as well as users, of buzzwords which concentrate on hot news and social affairs. So buzzwords in each age are the "barometers" of social mentality and social development condition. At first, this paper explains some representative buzzwords in recent years. During the 2010 World Cup, "geli" became popular because it fully expressed the emotion when audiences were watching games. As a dialect, "geli" can be used as an adjective which means "energetic", "great", or "cool", and as a verb it means "encourage" or "cheer up", while "bu geili" means it is far from expectations (Cheng, 2011). Internet users even created its English translation, "gelivable", and a French translation, "très guélile".

"Yali" is the homophone of "pressure" in Chinese and it is actually a kind of pear. "Great yali" means great pressure, which is also from the Internet. We may feel a little interested when we encounter this Internet language: "Do you have great yali?", although it is a depressing word. If we consider "pressure" as "yali", we will not feel depressive and uncomfortable.

"Shangbuqi", which mainly means vulnerable, became popular in 2011 because of a forum post from the Internet titled, "Someone who studied French was shangbuqi". This post pointed out the difficult problems and the helplessness he encountered when he learned French (Editorial Department of *YAOWENJIAOZI*, 2012). When this post became hot, "shangbuqi" became a pop word.

"It is so miserable that makes people cry", which we call "beicui" for short in Chinese, works as an adjective to express disappointment, heart-break, sadness, grieving and despair (Editorial Department of *YAOWENJIAOZI*, 2012). "Beicui" seems sad literally, but it contains the meaning of banter or release.

In 2012, "Zhengnengliang" (it means rip it up) became the top buzzword, one of the most favorable words among 1.3 billion Chinese. It is a phrase from British psychologist Richard Wiseman's treatise – *Rip It Up*. This book compares the human body as an energy field, which can make people show a new ego, become more confident and energetic by motivating their internal potential (Editorial Department of *YAOWENJIAOZI*, 2013). The phrase "rip it up" represents a kind of healthy, positive impetus and emotion. Nowadays, anyone and anything that is positive, healthy, inspiring, energetic and hopeful can be considered as "rip it up". So the top ten buzzwords in 2012, such as "the most beautiful" and "thumb up (praise)", can be divided into the "rip it up" range.

Also in 2012, "gaofushuai (a tall, rich and handsome boy)", and "baifumei (a white, rich and beautiful girl)" became the hottest words (Wang, Pu, & Zhu, 2014). The antonyms are "aiqiongcuo (a short, poor and ugly guy)", "tuyuanfei (an unfashionable, rounded and fat guy)", and "diaosi (a regularly unsuccessful loser)". "Gaofushuai" refers to a man, while "baifumei" refers to a woman. They are used to

describe the upper class which is wealthy and has a high status. On the contrary, "aiqiongcuo", "tuyuanfei", and "diaosi" refer to the lower class which is without family support, wealth or social status.

"Diaosi" was one of the hottest buzzwords in 2012, and refers to the man who is short, poor and ugly. But today, it has become a popular self-mockery to the youth (Hou, 2013). So no matter whether they are actually "diaosi" or not, people strive for this word to mock themselves or to reduce pressure.

In 2013 the prevalence of "tuhao (upstart)" reflected the deep-seated social problems that included impenetrable social stratification, a narrow uptrend channel, and polarization of the rich and the poor (Wang, Pu, & Zhu, 2014). The youth all may say, "Tuhao (upstart), let's be friends". In the *Modern Chinese Dictionary*, the explanation of "tuhao" is "the rich and powerful landlord or bully in ancient countryside", while in the Internet, it means someone who is rich and has a high level of consumption without much knowledge. The two kinds of "tuhao" in the different ages refer to different people, but they have one point in common, and that is wealth. The reason why "tuhao" has become so popular is that it is an epitome of the social transition in China – many people seemingly disdain "tuhao", but actually they are jealous.

When facing social reality, males and females both suffer great social pressure. The popularity of "nvhanzi", which means "iron lady" in English, can indicate that modern urban ladies are facing excessive pressure, but are becoming much braver. This word also reflects the self-orientation of Chinese young ladies who have to change from being meek and graceful to becoming independent, strong and bold enough to do what they want (Sun, 2013). Different from doughty iron ladies, "nvshen (goddess)" is a woman, both pretty and intelligent. They have high comprehensive qualities, high education, so they become "hot" instead of "baifumei". This situation indicates that young people's esthetic evaluation of females includes appearance, as well as internal cultivation and temperament. The program *Nvshen and Nvhanzi* at the 2015 Spring Festival Evening made "nvshen" and "nvhanzi" more widely known.

As interesting words with the strongest sense of contemporaneity, these buzzwords mainly reflect the dynamism of the youth's mentality in the period of social revolution and cultural collision.

Analysis on the Social Mentality of the Youth Behind the Buzzwords

The appearance of these buzzwords is the result of cultural diversity in our current society. High cultural inclusion is the characteristic of a plural society, and the popularity of buzzwords is just the consequence of this inclusion. As to the buzzwords, they are also plural: in content, they are either satirical or righteous, either concerned with the affairs of the national economy and the people's livelihood or the details; in form, they have either creation in accordance with linguistic norms and development rules, or casual "fabrication"; while in taste, they can be elegant, plain or vulgar. Thus, the buzzwords are the epitome of the current society. This paper analyzes the social mentality of the youth behind the buzzwords in three aspects: social cognition, social emotion and social value.

Buzzwords are the Youths' Euphemistic and Indirect Expression of Social Cognition

Social cognition is the social information of people from themselves, others and environment. The usage of buzzwords is the young group's understanding of social life and their living environment. During social transition, people are confronted with various pressures from work, studies, their lives and so on, and "yali" is actually a self-mockery when netizens suffer pressure but refuse to be driven by it. This word is full of simple wisdom of challenging lives and internal energy to relieve pressure.

The metaphor of the buzzword "tuhao" shows that the vulnerable youth who are in the middle and lower classes understand the solidification of the youth group, the large gap between different classes and the block of social mobility. So when facing "tuhao", they are "envious, jealous, and hateful" and call themselves "diaosi" to self-mock, or to relieve pressure, or to get resonance and warmth. The reason why "diaosi" has become so popular is that it is a perfect combination with social reality, and it reflects the contemporary youths' feeble psychological states of social reality and self-change. Besides, it seems that the popularity of "gaofushuai" and "baifumei" expresses people's desire for a better life, but it actually indicates the polarization of the rich and the poor, and the money worship of society in the period of social revolution. The psychological gap caused by the polarization of the rich and the poor increases the youth's awareness of equal rights and their strong desire for fairness and justice.

But in fierce social competition, what about our females? Due to the various limitation of physiology and psychology, females are usually in an inferior position to males. In order to survive better in competition, females have to train themselves to be an independent and strong "nvhanzi (iron lady)". On one hand, it means females start to rise up against their weak social position; on the other hand, it indicates the spirit and character of modern society. Comparing female roles in traditional society, modern females look for self-independence, self-confidence and self-improvement.

Buzzwords are the Youth's Catharsis of Feelings and Self-Release of Living Pressure

Social emotion is the mutual emotional experiences of the youth in a certain social environment. Buzzwords like "yali", "shangbuqi", "beicui", and "xinsai (sad or troublesome)" are the expressions of their negative emotions, because youth generally suffer social anxiety. Young people live in a stressful life and they feel sad, frustrated, bitter, helpless, heartbroken and wordless painful. If "pressure" becomes "yali", they will feel much better. The metaphor of "tuhao" shows the weak youth's anxiety and worry of their living conditions and embarrassing situations, reflects their grief and helplessness, as well as their sense of loss and unpromising future (Ao, 2014). "Diaosi" indicates the self-mocking mentality of having no wealth, helpless mentality of pursuing love and the faint mentality of changing their present situation (Hou, 2013).

With the increase of negative energy, the entire society is looking forward to "Zhengnengliang" and everyone should be "gelivable" and "thumb up" good people and good deeds. "Thumb up" contains praise, appreciation, approval and so many other emotions, which indicates that Chinese people are no longer satisfied with being onlookers, and they've begun to see everything as black and white. At the same time, the phrase, "the most beautiful", has become a new power that can touch the heart of our China: "the most beautiful mother", "the most beautiful teacher", "the most beautiful driver", "the most beautiful judge" and so on. "The most beautiful" people are emerging in an endless stream, which shows Chinese people's desire for truth, goodness and beauty. The buzzwords, "geli", "rip it up", "thumb up", and "the most beautiful", etc., refer to the social positive emotion and show the youth's sense of stability in psychology.

Buzzwords are the Reflection of the Youth's Values

Buzzwords are connected closely with people's values. The buzzwords that are popular among the youth in a certain period involve important social events, social phenomenon, social problems, current malpractice and every aspect of their daily lives during this time. These words possess the characteristics of a lot of information, great contemporaneity, various spreading ways, and they can vividly reflect the

youth's mentality and values of different times. Although "tuhao", "diaosi", and so many other buzzwords denote self-mockery, they appropriately reflect the negative idea of the youth. In real life, once people cannot depend on family, connection or relationship, they will say "Tuhao, let's be friends" to scoff. This is the flattered mind to "tuhaos" of the youth group, who call themselves "diaosi" for self-mockery. They want to be the supporters and followers of the rich people, while this kind of flattery and dependence will definitely harm their personal dignity. Because they cannot see hope of climbing up by working hard, the youth in the middle and lower classes no longer believe "Practice makes perfect", "No pains, no gains", or remaining cautious, conscientious and down-to-earth. They turn to become opportunistic, secure personal gain and they are eager for quick success and instant benefits.

While "geli", "rip it up", "thumb up (praise)", and "the most beautiful" are reflections of positive emotions, as well as the expression of youth's positive values. These words show the dreams and pursuits of this group, and the recognition of socialist core values. "Rip it up" contains Chinese traditional ethical ideas, which is a continuousness of "zhen (integrity, justice and so on)" in our traditional culture. The reason why "rip it up" can create an enormous effect is that every transmitter expresses it by their own just actions. We are now in an era of calling upon the "Zhengnengliang". *People's Tribune* conducted a survey and it showed that over 80% of the interviewees agreed that the current China was in the sub-healthy condition and had ten social symptoms: a lack of faith; a bystander attitude or being indifferent; anxiety over work, life and future; habitual distrust; ostentatiousness; reveling in scandals; hedonism; extreme, violent and anti-social behaviors; addiction to the internet; masochism, complaints about the Party and state system (Xu, 2014). When people are eroded by negative energy, "rip it up" becomes necessary in modern society, and it is the desire of the youth who struggle.

Analysis on the Reasons of the Social Mentality of the Youth Behind the Buzzwords

Social mentality is the result of the interaction between social practice and the spiritual environment. The social mentality that we analyzed above can be formed in a short time and can become a kind of social phenomenon; there are objective factors in social transition and subjective factors of the youth.

The Effect of Great Social Transition

Since the reform and opening-up, China has made great progress in comprehensive national power and social development. But the deep social reform changes some people's views of the world, life and values, and there is the worrying madness of social morality and ethics, such as money worship, sensualism, society blundering and an individual lack of rationality.

Over ten years after entering the new century, China is in a period of radical social transition and sharp social contradiction. There is an ambivalence in the current society. On one hand, the rapid development of China encourages people a lot; on the other hand, people worry about the troubles caused by social contradiction, such as polarization between the rich and the poor, inequity and injustice. People live in a certain social environment, but when society is sub-healthy, how can people protect themselves? The youth may call themselves "diaosi" for self-mockery and release internal pressure by yelling "yalishanda", and at the same time, they seek social support. But upward mobility is difficult for the youth in lower classes, so they want to make friends with "tuhao".

With the rapid change of social structure, the obviousness of a class structure characteristic and the wide gap between classes, people will make more social comparisons to their own position. Thus, the result of social comparison is the sense of relative deprivation. The sense of relative deprivation is a kind

of psychological imbalance condition caused by mutual comparison. When there is a difference between what they get and what they want, or what they get and what others get, people will have a sense of relative deprivation. It will lead to an individual's or group's negative mood and even destructive behavior, such as anger, depression, self-abasement, aggressive behavior, collective action and so on. Phrases such as *"I've worked hard for 18 years to get the chance of having coffee with you here"* or *"I've worked hard for 18 years but still cannot get the chance of having coffee with you here"* are widespread in the Internet, which point out the ubiquitous of an unfair and unjust phenomenon because of inborn factors. So people may generate a sense of relative deprivation. When "diaosi" has worked hard for 18 years, they still cannot have a cup of coffee with "tuhao", what kind of feeling is it?

Under this background, the presented socialist core values (prosperity, democracy, civility and harmony; freedom, equality, justice and the rule of law; patriotism, dedication, integrity, and friendship) point out the direction for Chinese people and bring "rip it up" for the construction of a harmonious society. Nowadays, "rip it up" is wide-spread and used. People look for "the most beautiful one" and "the most beautiful thing" to "thumb up(praise)". When "the most beautiful" ones and things go public, people will use "rip it up" to describe their first feelings. "The most beautiful" "rip it up" is not only a return of an aesthetic idea, but also a return of Chinese traditional values. "Tuhao" will not be "tuhao" forever, and "diaosi" will not be "diaosi" forever. Social classes flow in order, "reap as they have sown", and it will improve people's motivation.

Social Demand of the Youth

With the rapid development of the Chinese economy, the fast life leads to people's physical and psychological exhaustion. In order to relax themselves in this fast life, the youth consciously begin to seek for ways to reduce pressure. The most representative way is to express themselves and others by humorous buzzwords and they get relaxation, which reflects their advantage in creation. It is the consequence of social tolerance and diversified social values, as well as the positive social demand of the youth.

In the progress of building a harmonious society, the youth have changed from being passive in social development to active in social adjustment. They generally have various rights demands, thinking that the most important right for individual development are economic rights, legal rights, social rights, political rights and cultural rights. When people are satisfied with their basic rights, they demand senior rights. According to a survey, 71.9% of white-collar people are willing to take part in voluntary activities, and 50.1% are willing to take part in social management. However, when they are asked "if they are dissatisfied with the affairs around them", over half (50.3%) of the white-collar people expressed they will "come forward and reflect to the department concerned". Meanwhile, in this survey, the white-collar people have careful observations and deep thinking about social affairs, and have a strong sense of participation (Lian, 2014). It is shown that with the satisfaction of economic demands, the social demand and political demand of the youth will be promoted. They are concerned about personal interests, hoping to be "gaofushuai" or "tuhao" by working hard and get rid of being "diaosi", so that they no longer to depend on family background, connection and relationship. At the same time, they also care about social interests, asking for more just policies, a more fair society and more guaranteed rights. They also pay more attention to the weak group.

Conclusion

Through the analysis of youth's buzzwords in recent years, we see that buzzwords are the youth's euphemistic and indirect expressions of social cognition; buzzwords are the youth's catharsis of feelings and self-release of living pressure; buzzwords are the reflection of their values. Because of the effect of great social transition and social demand of the youth, the social mentality that we analyzed above can be formed.

In conclusion, this paper agrees that to develop a harmonious social mentality is the pursuit of a healthy society. It needs both the support of the government's macropolicies and the efforts of the youth. While building a harmonious society, understanding the social mentality of the youth by their buzzwords, then understanding the young group and reaching an agreement is beneficial to strengthen the youth foundation for our Party. Buzzwords contain ample social cultural meanings, and they are deeply loved and accepted by the youth because these words are fashionable, extremely expressive and contagious. So the value education including fashionable factors must have enormous education power.

References

Ao, C. (2014). The view on the youth's hierarchical consolidation behind the buzzword "tuhao". *China Youth Study,* (6), 71-76.

Cheng, J. (2011). A discussion of the 2010 hot word "Gelivable". *Journal of Mianyang Normal University,* (7), 47-49.

Editorial Department of *YAOWENJIAOZI.* (2012). The top ten buzzwords in 2011. *YAOWENJIAOZI,* (2), 4-6.

Editorial Department of *YAOWENJIAOZI.* (2013). The top ten buzzwords in 2012. *YAOWENJIAOZI,* (2), 4-6.

Hou, L. (2013). On the study of the current youth's social mentality from the buzzword of "diaosi". *Contemporary Youth Research*, (1), 53-56.

Lian, S. (2014). Interest appeal and social integration of urban new-generation migrants. *Exploration and Free Views,* (1), 23-25.

Liu, D., Ma, Q., & Yang, H. (2008). An investigation research on the status of urban migrant workers' social cognition. *Psychological Science, 31*(6), 1373-1376.

Sha, L., & Feng, B. (2006). *Social psychology (second edition).* Beijing: China Renmin University Press.

Sun, L. (2013). Expert of *YAOWENJIAOZI* explain how are the hot words of 2013 popular. Retrieved from http://news.xinhuanet.com/newmedia/2013-12/18/c_118612974.htm.

Wan, S. (2014). Review of researches on social mentality in the transformation period. *Journal of Nanjing Party Institute of CPC*, (5), 94-99.

Wang, H., Pu, Q., & Zhu, L. (2014). The evolution of contemporary youth's social mentality – Explanation of buzzwords of 2010-2013. *China Youth Study,* (9), 77-81.

Wang, S. (2012). Review of researches on popular words on internet in recent years in China. *Journal of Chongqing Technology and Business University (Social Sciences Edition,* (10), 7-12.

Yang, W. (2002). Definition and tentative description of catchphrase. *Journal of XinJiang University (Social Sciences Edition),* (6), 125-130.

Xu, Y. (2014). Analysis on the current social pathology investigation. *People's Tribune,* (9), 16-20.

Yang, Y. (2006). The psychological relation between individual and macro-society: The definition of social mentality. *Sociological Studies,* (4), 117-131.

Yang, Y., & Wang, J. (2013). *Research on social mentality in contemporary China.* Social Sciences Academic Press (China).

Power and Social Relation on Distributive Justice under Chinese Culture

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[Abstract] *This article tries to figure out how social relation and source of power influences the distributive result justice and information justice. Our experiment consists of a 2 (power source: elected vs appointed) x 3 (types of social relation: family, acquaintance, stranger) mixed factorial design with 169 undergraduates (51 of them are male) participating in the study The result show that: (1) When power comes from appointment (vs. election), the distributor's assignment and feedback method are more violate result justice and information justice; (2) The stranger gets the lowest assignment no matter what power source condition, and the family gets the higher assignment than acquaintance when power comes from appointment, while the assignment to family and acquaintance are equal when power comes from election.*

[Keywords] *power source; social relation; result justice; information justice; Chinese culture*

Introduction

Social distribution is an important link in the social reproduction of the social life (Wang, 2006). Researchers always link it with fairness and justice. In the context of Chinese culture, power and "Guan-xi" (social relation) are especially prominent and closely related to the issue of social resource distribution because these kinds of affairs are typically performed by few individuals or organizations (agents) who hold the power. In the current study, we examined the relationship among these factors by examining how social relation and power source influence the distribution justice.

Power Source and Distributive Justices

Power source is one of the most important characteristics of power, and election and appointment are common approaches to get power in organization management. Although they are all legal and have the same position power, the implicit mechanism may not be the same to the power holder. One comes from the superior and the other comes from the group member. Lammers (2008) found that illegitimacy moderated the effects of power on approach. These findings suggest that although these roles hold the same position power, the implicit intellectual framework might be different. Stouten, de Cremer, and van Dijk (2005) considered that this effect would be explained in terms of feelings of entitlement (Van, Tyler & Jost, 2011; Hideshi, Tatsuya, & Osamu, 2008). As for the power source, the power holders are all empowered, but the source of the entitlement is different. When they are appointed to be distributers by the superior, they may have higher sense of entitlement to violate the equality rules more seriously when distributing resources. When they are elected by members, the responsibility of the team members will be aroused and then they will adhere more to the equality rule.

Compared with result justice of distribution, information justice is also an important part of distribution fairness. During the process of distribution, the distributer knows the private information of

distribution, but the members do not. Whether the distributer shows the exact information to the members indicates information justice. They could provide feedback about the information's authenticity (tell the truth), concealment (do not tell any information), and deception (tell false information).

Social Relation, Power Source and Distributive Justice

Many previous studies have shown the relationship between the distributer and recipient (Chen, Serena, et al., 2001; Thye, 2000; Stephan, Liberman, & Trope, 2011). The ultimatum game was used most to test distribution between self and others from the view of selfishness and justice. However, in reality, we always face not only the "self and others" situation, but situations with many social relations, especially in China. Society entrusts regulatory and enforcement agencies with awesome powers. A power holder always deals with social issues as a third party (Wenzel, & Jobling, 2006). Their uses or abuses of power, may have somewhat more important effects on social fairness and justice. Under the Chinese culture, as a high relation-orienting society, social relation was classified into 3 types: family, acquaintance, and stranger, based on the theory of "cha-xu pattern" (different relationship pattern), the Chinese will treat different types of relations in different ways. In previous researches, the family was considered as a communal relationship, the stranger as an exchange relationship, and the acquaintance as a more complex relationship which is both instrumental and emotional. Social relation is a situational characteristic of social behavior. So under different power conditions, the characteristic of a social relationship will be presented differently. The nature of relationship means different psychological contracts and social norms (Liang & Wang, 2001), which will lead to different behavior. Liang (2001) considered that the Chinese did not always consider the resource distribution as an affair about fairness and social justice, but some affair contains "renqing" (a kind private feeling for personal dealings) (Peng, 2004). So when the power holder faces different social relations, they will adjust the amount that is assigned to them to manifest *renqing*. The communal relationship will get more profits because they is more responsibility on them and the stranger get less because of less responsibility (Chen, Serena; et al., 2001). The acquaintance will be more situational according to the situation of responsibility.

> ***Hypothesis 1:*** *The power source can influence the result justice. When power comes from appointment, distribute will be more unequal according to different social relationship. When power comes from elected, the distribution will be more equal.*
>
> ***Hypothesis 2:*** *The power source can influence the information justice. When power comes from appointment, the distributer would like to hide the information compared with when power comes from election.*

Method

Participants

In this experiment, 169 undergraduates (primarily freshmen and seniors from Hanshan Normal University, Guangdong, China – 51 males and 118 females, ages from 19 to 25) served as voluntarily participants. They received a gift for their participation after the experiment.

Procedure and Stimuli

The present study consisted of a 2 (power source: elected / appointed) × 3 (types of social relation: family, acquaintance, and stranger) design with the power source as the between-subject variable and social relationship as the within-subject variables.

Participants first were assigned a certain number to identify themselves, and then were told they would play a role-playing game and a distribution task in a 4-person group. A group leader was needed for this process. In order to find the best leader, each participant did a short, 1-minute presentation about what is most important for a group leader. Then the participants were randomly assigned into different power source groups: election and appointment. In the election group, participants were asked to write down the number of the person who should be the leader of all group members. In the appointment group, they were asked to write down the name of who was the best leader in history. They then went to the next phrase of the experiment which continued through the computer by a program presented on the screen. The instructions were as follows:

> *You are (elected/appointed) to be the group leader by (your group member/the experimenter). Now you are acquired to distribute some group resources to each member: family, acquaintance, and stranger. These roles were taken by the other participants in your group just now, and you should imagine them as real as possible. Please fill in the blanks of each member with the percentage that you want to assign to them. Note that the total amount should exactly equal 100%. After the distribution process, you could choose feedback method from the following list to communicate with your members: A–tell them the exact distribution message, B–do not tell them any information about distribution, or C–tell them false information about distribution.*

Actually, each participant was the leader, and there were no members in the experiment. After the exercise, the participants filled in the blanks of each type of social relation recipient with the assignment percentage and chose the feedback method. Then we finished the experiment. The independent variable was the result justice as the amount that one assigned to each social relation recipient, and the information justice was manifested by the feedback method they chose.

Results

Manipulation Checks

Each participant answered the question, "How do you get the role of distributer: appointed or elected?", after the experiment. All the participants answered the question correctly. A 2 (power resource) × 3 (social relation types: family, acquaintance, stranger) multivariate analysis of variance (MANOVA) with repeated measures on the assignment amount to each target produced a significant interaction of social relation and power resource, $F(2,167) = 8.815$, $p < .000$, suggesting a positive influence in power resource on social relation. We conducted two-way ANOVA's on each power source and they produced significant interactions – when the power came from election, the amount that was assigned to family (M=35.778, SD=8.215) and acquaintance (M=37.756, SD=3.373) were equal ($F(1,75) = 117.332$, $p =.411$), but were all higher than that of the stranger (M=26.455, SD=3.443; p=.000; p=.000). When the power came from appointment, the situation of the stranger (M=26.427, SD=3.829) did not change compared with the elected condition and was still lower than the distribution of the other two social relations (MD=12.508, p=.000; MD=8.619, p=.000). But the family (M=38.935, SD=8.675) and acquaintance (M=35.046, SD=2.966) were not equal any more; the family got more assignments than the acquaintance (MD=3.889, p=.004). See Figure 1. According to the results, equal distribution presented only between family and acquaintance when the power came from election, and the stranger always got a lower assignment. That is

to say, no matter what power condition, the stranger was treated most unjustly and the justification of family and acquaintance were dependent on the power situation. Hypothesis 1 was partially testified.

Information Justice

The methods that participants chose to give feedback to the group members were named as authentic (tell them the exact information), conceal (do not tell them any information), and deceive (tell them false information). The result of the frequencies that each feedback method was selected under different power sources is listed in Figure 2. According to the result, when power came from election, more participants chose to provide feedback information exactly (X^2=4.51, P=0.034). When power came from appointment, more participants chose to conceal the information (X^2=9.58, P =0.002). Hypothesis 2 was testified.

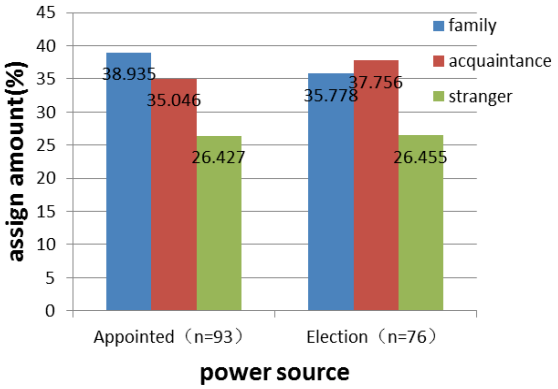

Figure 1. **Assignment Amount to Social Relation Types of Power Source**

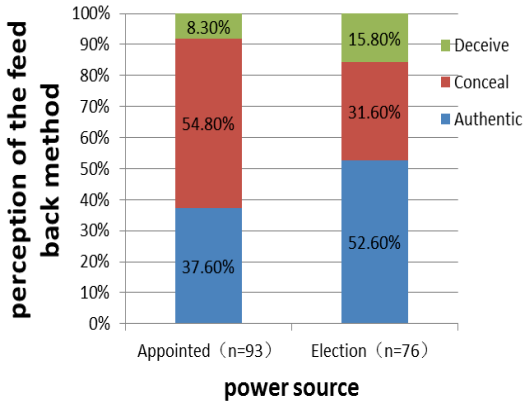

Figure 2. **The Percentage of Each Feedback Method in Types of Power Source**

Discussion

In this study, we found that the result justice of distribution to different social relationships and information justice varied under different power resource conditions. Guinote (2007)'s Situated Focus Theory of Power considered that power behavior can only be appraised in certain situations because power could affect their judgment and behavior in various ways. Our results showed that power source could lead to distributive injustice to difference relations and the extent of authenticity of the feedback information. These findings tested and verified the situational characters and the complexities in power operation. The character of power source launched the different operational norms of power. When an individual is appointed to be a leader by a superior, he/she may have a higher sense of entitlement. Power was considered as an opportunity (Sassenberg, Ellemers, & Scheepers, 2012) so that the self-interest motivation was induced (because the Chinese always treat family as part of the self), and violate the equality rule more seriously. When he/she was elected by the members, and the recipients were also members, the responsibility to the members will be aroused and then he/she adhere more to the equality rule. From information justice we can also see that when power comes from appointment, there is more concealment and distortion of the truth, and when it comes from election, there is more authentic information. Justice is an external regulator, and violating the equality rule will produce more inner confusion and external pressure. When an individual was appointed to be a leader, he/she assigned more

to family and went against the equality rule, so many participants chose to conceal the information to avoid the risk of being evaluated. The Chinese Confucian culture regards responsibility as the most important thing to the power holder (Wei, & Yu, 2009), and our result also indicates that, if we emphasized empowerment from the people, the distributer would not only reduce the assignment amount to family and distribute more equally, but provide feedback information more openly and exactly. We can view this as an effective way to prevent corruptive behaviors. So our study could provide evidence for resolving the issues of social management and resource allocation in practice, the political affairs of form and substance of democratic, and so on.

But these effects only appear in the distribution to family and the acquaintance, not the stranger. The equal division rule is simple and fair in dividing common resources. In our study, equal amounts should be 33.3% (because there are 3 social relations to assigned and the total amount is 100%). However, when people face different roles under various power condition, perceptions of fairness changed. We see that no matter under what power source condition the amount assigned to family and acquaintance were always higher than 33.3%, and the stranger was lower than this, which means that participants treated strangers most unfairly. The power source situation could change the assignment amount to family and acquaintance; when power comes from appointment, the participants treat acquaintances more unfairly (compared with family). In China, social relation is a situated variable, Mr. Fei Xiaotong once thought that China was a society of acquaintances and kinships. The behavior to acquaintances and kinships are dramatically different than with strangers because of the different relation responsibility and psycho-contract (Shang, & Fu, 2011). Another interesting find is that when power comes from election, the amount assigned to acquaintances was slightly higher than that to family (although it is not significant). This is not in accordance with the hypothesis of rational man. We could explain this phenomenon by the traditional Chinese culture of "kejifuli", which means that one should restrain oneself, even make oneself suffer losses and be benevolent to others, particularly in public. Our result confirmed that although the development of the epoch and social changed the relationship in society greatly, the core of the matter was largely unchanged.

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References

Chen, S., Lee, C. Y. A., & Bargh, J. A.(2001). Relationship orientation as a moderator of the effects of social power. *Journal of Personality and Social Psychology*, *80*(2), 173-187.

de Cremer, D., & van Dijk, E. (2005). When and why leaders put themselves first: Leader behaviour in resource allocations as a function of feeling entitled. *European Journal of Social Psychology, 35*(4), 553-563.

Guinote, A. (2007). Behaviour variability and the Situated Focus Theory of Power. *European Review of Social Psychology, 18*(1), 256-295.

Hideshi, I., Tatsuya, K., & Osamu, H. (2008). Complementarities among authority, accountability, and monitoring: Evidence from Japanese business groups. *Journal of the Japanese and International Economies, 22*(2), 207-228.

Lammers, J., Galinsky, A. D., & Gordijn, E. H. (2008). Illegitimacy moderates the effects of power on approach. *Psychological Science, 19*(6), 558-564.

Liang, J., & Wang, C. M. (2001). Interpersonal relationships and its influence on organizational performance under the background of China. *Advances in Psychological Science*, *9*(2), 173-178.

Peng, Y. S. (2004). Kinship networks and entrepreneurs in China's transitional economy. *American Journal of Sociology, 109*(5), 1045-1074.

Sassenberg, K., Ellemers, N., & Scheepers, D. (2012). The attraction of social power: The influence of construing power as opportunity versus responsibility. *Journal of Experimental Social Psychology, 48*(2), 550-555.

Thye, S. R. (2000). A status value theory of power in exchange relations. *American Sociologica Review. 65*(3), 407-432.

Shang, Y. F., Fu, P. P., & Zhuang, P. W. (2011). The third dimension of power sources – The empirical study on "Relational Power". *An Academic Edition of ManaMaga*, *1*(2), 3-11.

Stephan E., Liberman N., & Trope, Y. (2011). The effects of time perspective and level of construal on social distance. *Journal of Experimental Social Psychology, 47*(2), 397-402.

Stouten, J., de Cremer, D., & van Dijk, E. (2005). I'm doing the best I can (for myself): Leadership and variance of harvesting in resource dilemmas. *Group Dynamics: Theory, Research, and Practice*, *9*(3), 205-211.

van der Toorn, J., Tyler, T. R., & Jost, J. T. (2011). More than fair: Outcome dependence, system justification, and the perceived legitimacy of authority figures. *Journal of Experimental Social Psychology*, *47*(1), 127-138.

Wang Z. J., Long, L. R., & Liu, L. D. (2011). Operation mechanism and effects of supervisor-subordinate Guanxi in Chinese organizations. *Acta Psychologica Sinica, 43*(7), 798-809.

Wang, Z. M., Zhao, X. D., & Gong, Z. Z. (2006). The progress and trends of resource allocation decision problem research. *Auditing & Finance*, *04*, 10.3969.

Wei, Q. W., & Yu, G. L. (2009). A review of studies of power from the perspective of social cognition. *Advances in Psychological Science*, *17*(6), 1336-1343.

Wenzel, M., & Jobling, P. (2006). Legitimacy of regulatory authorities as a function of inclusive identification and power over ingroups and outgroups. *European Journal of Social Psychology*, *36*(2), 239-258.

Wolfe, R. J., & McGinn, K. L. (2005). Perceived relative power and its influence on negotiations. *Group Decision and Negotiation*, *14*(1), 3-20.

Research on the Pressure Development Characteristic and Its Influencing Factor on College Students in China – Based on the College Background Variable

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[Abstract] *This research used the Undergraduates Pressure Questionnaire which was designed by these researchers to investigate 74,687 undergraduates from 52 colleges in 23 provinces and cities on the present status of their pressure. This study found: 1. There are five main types of pressure in college students, which include study pressure, personal distress, pressure of competition, family accident and interpersonal disturbance; 2. The imbalance in undergraduates' pressure development is obvious, in which the study pressure comes first, then personal distress, and then the family accident, the pressure of competition and then interpersonal problems; 3. The college background variable has a significant main effect in undergraduates' pressure, and other factors like grades and academic achievement have deeply influenced pressures as well. Therefore, the colleges should develop a targeted project on unblocking pressure. Through pressure management guidance and social work, the undergraduates' abilities to cope with pressure and their comprehensive qualities can be promoted.*

[Keywords] *undergraduates in China; development of undergraduates; pressure*

Introduction

Pressure is not only unavoidable in our social lives, but it is also a life topic that humans should face. Since the 1930s, the problem of pressure has gradually attracted researchers' attention. By teasing the results of pressure research from the psychological perspective, this research thinks that pressure is generated when the individual feels the imbalance between the needs of the environment and their ability, which is a kind of negative physical and mental reaction. This conception includes three meanings: first, pressure is caused by stimulation in both the internal and external negative environments; second, the forming of pressure not only depends on pressure stimulation, but also depends on the mental and physical condition, life experience, education and other factors of the individual; third, pressure is a kind of uncomfortable condition in physiology, psychology and behavior when the individual feels the difficulties, and is an explanatory, emotional and defensive reaction both physically and psychologically.

When undergraduates enter colleges, they face changes and challenges from all sides - their life environment, study tasks, interpersonal communication, geographic and climatic conditions. This causes psychological stress and troubles. Psychological stress is closely related to undergraduates' lives, studies and their future. According to relevant investigation (Tian, Zhao, & Wang, 2007), common symptoms of undergraduates' psychological disorders are mania, obsessive-compulsive disorder and neurasthenia. Among those undergraduates, about 10% have serious mental problems, and 1% have serious abnormal mental problems. What's more, the percentages of undergraduates that have mental problems are rising. An empirical study by Dehua Yang (2009) on undergraduates' depression and anxiety shows that among the 1,064 objects of the investigation, 17.4% were in a depressive mood, 17.8% have depression symptoms, and about 17.3% of the investigated undergraduates had high level anxiety. The investigation

also found that the pressures undergraduates feel are correlated significantly with their depression and anxiety, which is closely correlated to their methods of coping. For example, depression and anxiety shows a negative relation with mature coping strategies. Therefore, it brings practical significance to study the ways college students cope with depression and anxiety. First, the researcher can get a clear understanding of the undergraduates' development characteristics in different dimensions of pressure by descriptive statistics. Second, the research can offer advice for colleges to design pressure management and response plans according to the analysis of the manifestations that the undergraduates from different colleges face, and whether they are different levels or different pressures. Third, the researcher can get an understanding of the levels that different types of pressure influence the undergraduates.

Literature Review

The problem of pressure has attracted researchers' attention from the 1930s and four kinds of representative viewpoints have formed. First is the theory of stimulation, which is based on physical principles, and mainly aims to learn what kinds of things will result in people's mental disorders. It focuses on analyzing what kind of environmental stimulation will cause a nervous reaction and finding the relationship between stimulation and nervous reaction (Wei & Tang, 1998). The second viewpoint is the theory of reaction, which considers "pressure is a kind of non-specific reactivity to the need of body in body" (Selye, 1958). Non-specific reactivity means the environment stimulates the need of human bodies differently, but its basic mode of biological reaction is the same. The third viewpoint is the Person-Environment Fitness Theory. This theory (French, J. R. P., Caplan, 1972) states that pressure is the mismatch between the individual and environment, and is also the reason that same environment stimulation works differently on different people. It starts from personal characteristics and interaction between people and their environment to explore the internal psychological mechanism of pressure generation. The last viewpoint is the Theory of Cognitive Interaction (Lazarus, Folkman, Cox & Mackay, 1984). It defines pressure as a kind of mental and physical nervous condition after the individual evaluates the possible threat made by certain environmental stimulations. It emphasizes that the method and perspective of the individual to evaluate the environment, adopt subjects and explain determines whether the environment is a stimulus or not. To sum up, following the track of physics, physiology, medicine, psychology and praxeology, the researchers have deepened their research. In the field of group differences of undergraduates' pressure perceptions, age and gender are the most common factors to take into consideration. In addition, there are quite a number of researches on urban or rural life, academic scores, majors, nationalities, family economics and other factors.

Research Design

Aim of Research

The Undergraduates Pressure Questionnaire was used to conduct a large-scale investigation to grasp the characteristics of undergraduates' pressure and analyze the influence factors of pressure development, in order to offer facts for colleges to design a pressure management and response plan. Meanwhile, the research can further enrich research results in the field of psychology and youth psychology.

Tool of Research

The theoretical framework of the questionnaire was based on three-factor influence human development theory, which is heredity (personal factor), environment (family and society factor) and education (school

factor). After consulting documents, classification of same scales and items, and open-ended investigation and analysis, the questionnaire draft was consistent with the actual situation of undergraduates in China. After expert review, structured interviews and expert review again, the questionnaire was finalized. Therefore, the questionnaire was well-structured and highly believable.

The Undergraduates Pressure Questionnaire contained 5 factors and 18 topics (three items were about study pressure, four were about competition, four were about family accidents, four were about personal distress, and three were about interpersonal disturbance). The five factors were analyzed and the variance was 53.271%. The Cronbach A-factor in total scale was 0.823. In sub-scale, the coefficients 0.682, 0.658, 0.666, 0.612, 0.604 correspond to study pressure, competition, family accident, interpersonal disturbance and personal distress. The process of designing the questionnaire was of preciseness and it has high-level content validity and construct validity.

The questionnaire used a six-point Likert-type scale to appraise influence degree which is affected by the life events as the topics describe. Then using the subjects' personal statements to make statistical analysis, the higher the score, the more pressure there was. (Influence degrees were divided into six degrees, scores range from 0 - meaning no effect or does not happen, to 6 - meaning affected seriously).

The Collection of Data

This research is an important part of a national fund of social science programs named Investigation and Survey of Undergraduates' Learning Situation led by Professor Qiuheng Shi from Xiamen University. By using the NCSS platform, which built in the program, the research finished the collection of data. The research used the Undergraduates Pressure Questionnaire, which was designed by the researchers themselves, to investigate 74,687 undergraduates from 52 colleges in 23 provinces and cities by ratified cluster sampling method.

Analysis Ideas of the Research

Generally speaking, research of factors affecting human development often takes the perspective of sociology, education or psychology (Chen, 2015). Based on Urie Bronfenbrenner's (1979) ecological model about human development, social influences can be treated as a system centered on the individual (Lei, 2009). According to its importance and direct degree of influence to the individual, the system can be divided into a micro-system, middle-system, external system and a macro-system. The micro-system refers to those aspects that have direct contact and the greatest influence on the individual. To those undergraduates who leave family to live alone, their main micro-system is their school environment, student-teacher interaction, and classmate communication. The school environment micro-system has great effects on the undergraduates. Its interaction with the undergraduates forms a kind of positive construction relation, which affects the growing process both in their mental development and pressure perception. Therefore, after having a clear understanding of the undergraduates' pressure development characteristics, this research will investigate the undergraduates' pressure situations and characteristics based on the college background variable.

Analysis of Research Result

Analysis of General Characteristics of the Undergraduates' Pressure

By calculating the average and variance of the five factors in Undergraduates Pressure Questionnaire, the researcher can get an understanding of the general level of pressure among the undergraduates. In order to

get a further understanding of the percentage levels of every kind of stress of the undergraduates, the researchers chose the top two factors of stress average and analyzed their frequency from both the micro and macro aspects to grasp the characteristics of pressure development among the undergraduates.

Overall Levels of Undergraduates' Pressure

According to the average and standard deviation of pressure in the five dimensions, the researcher analyzed the overall levels of undergraduates' pressure. The results can be seen in Table 1.

Table 1. ***Overall Levels of Undergraduates' Pressure (N=74,687)***

Pressure Dimension	Average	Standard Deviation
Study Pressure	1.8166	1.30847
Competition Pressure	0.9979	1.13944
Interpersonal Disturbance	0.9327	0.96990
Family Accident	1.1222	1.25632
Personal Distress	1.4300	1.05914

The average of the five factors of undergraduates' pressure ranged from 0.9327 to 1.8166, which means the affected level of these five factors all ranged from Level 1 (almost no influence) and Level 2 (little influence), showing low stress level. To be specific, the most affected factor was study pressure, the second was personal distress, and the following were family accident, competition pressure and interpersonal disturbance. Study pressure has a greater influence on the undergraduates, which is similar with previous research results (Zhou, 2013). Personal distress only ranked second to study pressure, which was infrequent in previous researches. The researcher will analyze this in samples later.

The standard deviations of those five factors show that discreteness of the factors is obvious. Among them, study pressure had the largest number of individual differences; the following were family accident, competition pressure, personal distress and interpersonal disturbance. Starting from central tendency and discreteness, the average of interpersonal disturbance was not high, but its discreteness was the lowest, which shows interpersonal relationships is a common stressor among the undergraduates.

Analysis of Sample Questions in Subscale of Undergraduates' Pressure

The researcher chose the subscales of study pressure and personal distress as sample questions to do analysis, grasping the development and frequency distribution of undergraduates' pressure intuitively and directly.

Analysis of sample questions in the subscale of study pressure. Choosing the sample question "course is too much and I don't have enough time" to conduct the frequency analysis, Table 2 shows that 50.4% of undergraduates were not affected by it, and 25.2% of the students felt it only had a little influence. However, 20.1% felt that it had large effects on them, and 4.3% (3,175 persons) felt that it had a very large effect. 24.4% of the undergraduates researched were in a state of high stress because of "course is too much and I don't have enough time"; this is a serious statement that can't be ignored and should attract the attention of the schools.

Table 2. ***Option Distribution of Sample Questions in Subscale of Study Pressure (N=74,687)***

Options	N	Percentage (%)	Cumulative Percent (%)
Never Happen	26,821	35.9	35.9
Almost No Effect	1,576	2.1	38.0
Little Effect	9,249	12.4	50.4
Common Effect	18,826	25.2	75.6
Large Effect	15,040	20.1	95.7
Very Large Effect	3,175	4.3	100.0

Analysis of sample questions in subscale of personal distress. Choosing the sample question "Sickness such as headache, flu, stomachache and so on" to conduct the frequency analysis, Table 3 shows that only 19.4% of the undergraduates chose "never happen", explaining the universality of this kind of things. 33% of the subjects felt it had "little effect", and 11.2% of the subjects chose "large effect" or "very large effect". Therefore, personal distress brings a large amount of stress to the undergraduates. These stresses are common in the subjects' daily lives, having long-term influence with characteristics of cumulatively and dispersivity on the undergraduates.

Table 3. ***Option Distribution of Sample Questions in Subscale of Personal Distress (N=74,687)***

Options	N	Percentage (%)	Cumulative Percent (%)
Never Happen	14,502	19.4	19.4
Almost No Effect	8,105	10.9	30.3
Little Effect	18,974	25.4	55.7
Common Effect	24,678	33.0	88.7
Large Effect	7,272	9.7	98.5
Very Large Effect	1,156	1.5	100.0

Analysis of Characteristics of Undergraduates' Pressure Based on the College Background Variable

Based on three-factor influence human development theory and the ecological model about human development, from the perspective of college background variable, the researcher chose grade level, students leader or not, and academic performance as the three variables to analyze the effects on the development of the undergraduates' pressure. This aims to get a grasp of the role that the micro school environment plays in the development of the undergraduates' pressure.

Undergraduates' pressure in different grade levels. Table 4 shows the characteristics of pressure development of undergraduates in different grades by homogeneity test for variance. After testing, the researcher found that sophomores have the largest study pressure and seniors have the least study pressure. As for competition pressure, seniors are under the most pressure, followed by sophomores, juniors and freshmen. As for personal distress, juniors are under the most pressure, followed by sophomores, freshmen, and seniors. As for family accident, there are obvious differences: sophomores' pressure ＞ juniors' ＞seniors', freshmen's ＞seniors'; as for personal distress, sophomores' ＞ juniors' ＞ seniors'. Sophomores are suffering the most pressure, and second are juniors, followed by freshmen and seniors.

Table 4. ***Characteristics of Pressure Development of Undergraduates in Different Grades***

Types	Grade	N	Average	Standard Deviation	Value of F
Study Pressure	Freshman	26,705	1.8577	1.33049	308.124*** Sophomore> Freshman> Junior> Senior
	Sophomore	23,046	1.9352	1.30843	
	Junior	19,343	1.7469	1.25924	
	Senior	5,593	1.3731	1.26231	
Competition Pressure	Freshman	26,705	0.9081	1.11664	131.852*** Freshman< Sophomore< Junior< Senior
	Sophomore	23,046	1.0089	1.13480	
	Junior	19,343	1.0481	1.13650	
	Senior	5,593	1.2068	1.23284	
Interpersonal Disturbance	Freshman	26,705	0.8677	0.96404	80.084*** Junior> Sophomore> Freshman; Junior> Sophomore> Senior
	Sophomore	23,046	0.9625	0.96389	
	Junior	19,343	0.9983	0.97528	
	Senior	5,593	0.8931	0.98314	
Family Accident	Freshman	26,705	1.1370	1.26248	105.918*** Sophomore > Junior > Senior; Freshman> Senior
	Sophomore	23,046	1.1714	1.26694	
	Junior	19,343	1.1239	1.25968	
	Senior	5,593	0.8424	1.12958	
Personal Distress	Freshman	26,705	1.4306	1.04998	117.447*** Sophomore> Junior> Senior
	Sophomore	23,046	1.4729	1.06173	
	Junior	19,343	1.4498	1.06426	
	Senior	5,593	1.1823	1.04120	

*"***" Stands for P<0.001*

Is there difference of pressure between student leaders and students who are not student leaders? Table 5 adopts the T-test method to analyze the differences of the undergraduates' pressure development between student leaders and common students.

Table 5. ***Differences of Undergraduates' Pressure Development between Student Leaders and Common Students***

Types	Student Leaders or Not	N	Average	Standard Deviation	Value of T
Study Pressure	Yes	37,123	1.7606	1.31952	-11.642***
	No	37,564	1.8720	1.29509	
Competition Pressure	Yes	37,123	0.9435	1.10074	-12.981***
	No	37,564	1.0516	1.17398	
Interpersonal Disturbance	Yes	37,123	0.9464	0.97346	3.851***
	No	37,564	0.9191	0.96618	
Family Accident	Yes	37,123	1.0788	1.24218	-9.383***
	No	37,564	1.1650	1.26870	
Personal Distress	Yes	37,123	1.3988	1.05748	-8.015***
	No	37,564	1.4609	1.05989	

*"***" stands for P<0.001*

Table 5 shows that the pressure student leaders feel is much lower than those students who are not student leaders in study pressure, competition pressure, family accident and personal distress. Those who are not student leaders only have a lower score than student leaders in the average of interpersonal disturbance factor. To some extent, it inspires the researchers to believe that serving as student leaders and taking active part in social work are beneficial in improving their ability to cope with stress. Facing stressful conditions and negative life events improve their psychological resilience and response capacity.

Differences of undergraduates' pressure in different academic score rankings. The researchers choose variance analyze to exam what effects that academic score brings to pressure development. The academic scores have been divided into three types, which is top 25%, middle 50% and last 25%. Table 6 shows that the average difference of the undergraduates in different academic score rank are all reach a significant level in five subscales.

Table 6. ***Characteristics of Undergraduates' Pressure in Different Academic Score Ranks***

Types	Ranking	N	Average	Standard Deviation	Value of F
Study Pressure	Top 25%	21,162	1.4646	1.25148	2707.165*** Excellent< Middle< Underachievers
	Middle 50%	34,079	1.9553	1.27479	
	Last 25%	19,446	2.4775	1.26195	
Competition Pressure	Top 25%	21,162	0.9382	1.08984	76.899*** Excellent< Middle< Underachievers
	Middle 50%	34,079	1.0331	1.15733	
	Last 25%	19,446	1.0677	1.22230	
Interpersonal Disturbance	Top 25%	21,162	0.8978	0.93892	55.135*** Excellent< Middle< Underachievers
	Middle 50%	34,079	0.9419	0.97552	
	Last 25%	19,446	1.0142	1.04187	
Family Accident	Top 25%	21,162	1.0991	1.24974	11.685*** Excellent< Middle; Excellent< Underachievers
	Middle 50%	34,079	1.1314	1.25821	
	Last 25%	19,446	1.1650	1.26963	
Personal Distress	Top 25%	21,162	1.4103	1.05232	9.772*** Excellent< Middle; Excellent< Underachievers
	Middle 50%	34,079	1.4417	1.05735	
	Last 25%	19,446	1.4533	1.08671	

"***" stands for P<0.001

After back testing of Table 6, for study pressure, competition pressure and interpersonal disturbance, the order from high to low is excellent students, average-achieving students and underachievers, which means the underachievers have the largest pressure, second are the average-achieving students, and the excellent students have minimum pressure. For family accident, there is a significant difference; excellent students have less pressure than average students and underachievers. For personal distress, the result of back testing showed that excellent students had less than the average-achieving students and less than the underachievers, but there was not an obvious difference between the average-achieving students and the underachievers.

Discussion about the Research Results

Discussion of Overall Characteristics about Undergraduates' Pressure

Overall pressure is in a low stress condition; individual difference is obvious. The research found that the overall pressure of Chinese undergraduates is in a low stress condition looking at it from the average of every pressure dimension. On the one hand, the occurrence frequency of negative events in the undergraduates' life is low. Personal distress occurs most often, which is consistent with the actual condition of daily social life and was confirmed in the sample questions on these two factors. On the other hand, the undergraduates have the abilities to defend against the effects of daily life and strive to lower their influences. Therefore, the undergraduates are influenced less by stressful events on the whole.

It is certain that the individual differences can't be covered by the overall tendency. There is a large number of students who are bothered by pressure in every pressure dimension. The high discreteness of every factor shows that the level of undergraduates affected by pressure are of obvious individual difference. The analysis of sample questions shows that, 2.9% of undergraduates have been greatly affected by pressure on average. To the schools, it is of great importance to pay attention to those students. It is hard to ignore that 2.9% of students are in a high pressure condition, which requires schools to take measures to help them solve their problems and distress.

Main pressure source of undergraduates: The first is study pressure, but personal distress can't be ignored. The research found that academic work was the main source of pressure. Academic scores are an important identification of undergraduates' learning performance and knowledge acquirement. Moreover, scores are important in applying for jobs, entering a higher school and for future life. Therefore, paying attention to the undergraduates' study problems and enhancing their abilities to cope with stress are of great urgency.

Second, the research found that personal distress took second place in pressure source (M=1.4300). Despite personal negative events, such as sickness, mental and physical changes and so on, being trivial, theirs frequency of occurrence is high and their influence is persistent. The results of Table 3 show that trivial events can bring large troubles to the undergraduates. Moreover, undergraduates often suffer from them and do not ask for help, which makes it hard to attract the schools' attention. As for other kinds of stressors, such as poor academic scores causing students to not graduate, interpersonal relation, competition pressure, family accident and other stressful events may result in extreme consequences, which should attract more attention of schools. The researcher believes that more attention and help should be given to help solve the undergraduates' personal distress, otherwise, it will promote their stress levels and lower their resilience, and finally lead to chain-like psychological problems.

Discussion of Overall Characteristics about Undergraduates' Pressure Based On the College Background Variable

Main effect of grade level factor is remarkable: sophomores are under the most pressure and the pressure source is different in different grade levels. The research found that there was an obvious difference in grade levels for undergraduates' pressure. Comparatively speaking, the average of pressure scores of sophomores was much high than undergraduates in other grades in study pressure, interpersonal disturbance, family accident and personal distress. The main pressure of seniors was competition, and for juniors it was interpersonal disturbance. Freshmen were the least bothered by pressure. Sophomores may be are under the largest stress because of two reasons: first of all, the freshness of entering colleges has

gradually disappeared, their academic score ranking, and comprehensive assessment makes them feel stressful; second, specialized courses and practical experiments increase, increasing the study pressure at the same time. Juniors were bothered by interpersonal disturbance. As the grade levels go by, interpersonal communication gradually become stable, and almost everyone has close friends. However, the problems of communication occur at the same time, such as friendships breaking up and love frustration increasing the psychological pressure of the undergraduates. Seniors are facing the choices of finding jobs or entering higher colleges directly, so it goes without saying that they are under the large pressure of competition. The effect of grade level factors remains that the differences in grade levels should be take into consideration in arranging activities and designing assistance plans.

Experience of being student leaders: An effective predictor of undergraduates' abilities to cope with pressure. The research shows that the undergraduates who are student leaders are under significantly less pressure than those who are not student leaders, which proves that being a student leader and tanking an active part in social work has great benefits in promoting the abilities to cope with pressure. Taking part in social work is an important way to get involved in campus life. The undergraduates learn how to coordinate various relations (study and work, teachers and students, ego and classmates) and affairs, and elevate work efficiency. It is no doubt that student leaders will come up against difficulties, competition, and contradiction, which makes them get higher scores than those who are not student leaders in interpersonal disturbance factors. However, the experience of work and social activities improves their abilities to cope with pressure and difficulties. Their psychological resilience and endurance have been improved. Social work and experience of work is a necessary step in education. The development of abilities, values, will and personality can't be achieved without practice, which is the very correct reflection of theory of practical generation in personal growth.

Study pressure has a positive impact on the undergraduates. The research found that academic scores had a great impact on students' stress. When concerned with factors like learning stress, competitive pressure and personal communication troubles, top-learners had less stress, followed by middle-level students, while underachievers were the most stressful. This indicates that scores and grades have a positive influence on students' stress levels. Due to high scores, top-learners are in an advantageous status in all kinds of competitions and interpersonal interactions, thus, they have rather small stress in these fields. In the meantime, because of the possibility of co-happening stress, such as family stress easily causing personal troubles, this can strengthen competitive pressure, etc. The top-learning students may have accumulated good psychological response resources from their inner confidence and received compliments. As a result, even when facing family accidents and changes or personal distress, they are able to express better resistance to pressure, while middle-level students and underachievers are pretty bad with it. We do not deny the fact, that in reality, there is a certain phenomena called "high scores but low abilities". But in general, those who study well are always excellent in other fields because study is an intelligent working process which needs continuous hard work. One has to have a clear study motion, strong mind and scientific study method to perfectly complete a study process. This is a process that one keeps exploring, challenging and shaping themselves. Those who stand out in this process usually have a stronger psychological energy. A good book equals a life-long wealth. As Gorky once said, "Books are the stepping stones to human progress". From massive reading of great works, observing, learning, and thinking daily, people are able to make a breakthrough of their self-living limitations, widen their horizons and improve their levels. They are also able to master a more powerful spiritual weapon to analyze problems, examine conflicts and defuse stress. As a result, it is profound and

meaningful to carry out the construction of a study style atmosphere, encouraging students to study hard and pursue truth.

Conclusion

1. College students' stress and pressure can be categorized into five types – study stress, personal distress, competitive pressure, domestic calamity and interpersonal disturbances.
2. The development of students' stress has an obvious uneven feature. The most stand-out one is study stress, followed by personal distress, domestic calamity, competitive pressure and interpersonal disturbance.
3. Students' college background, as a variable factor, has a remarkable influence on students' stress. In addition, variables like grades, experience of being a student cadre and rankings of scores have great influence of the development of stress.

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References

Bolger, N. (1990). Coping as a personality process: A prospective study. *Journal of Personality and Social Psychology*, *59*(3), 525-537.

Chen, Q. (2015). *Researches of pressure coping style of undergraduates in China,* (p. 33).. Unpublished Ph D dissertation. Xiamen University.

de Anda D, Bradley M, Collada C, et al. (1997). A study of stress, stressors and coping strategies among middle school adolescents. *Social Work in Education*, (2), 87-89.

Lazarus, R. S., & Folkman, S. (1984). *stress, appraisal and coping,* (pp. 117-126). New York: Springer.

Lei, T. (2009). *Development psychology*, (pp. 46-47). Beijing: Press of Chinese People University.

McClell, D. C. (1989). Motivational factors in health and disease. *American Psychologist*, 44, 675-683.

Selye, H. (1958). *The stress of life*. New York: McGraw-Hill.

Somerfield, M. R., & McCrae, R. R. (2000). Stress and coping search: Methodological challenges, theoretical advances and clinical applications. *American Psychologist*, *55*(6), 620-625.

Tian, A., Zhao, Y., & Wang, Z. (2007). Present situation of undergraduates' psychological health and its countermeasures. *Higher Agricultural Education, 2*, 90-92.

Wei, Y., & Tang, S. (1997). Test research of undergraduates' coping activities. *Acta Psychologica Sinica*, *29*(1), 67-73.

Wei, Y., & Tang, S. (1998). Main models of stress theory and their evaluation. *Psychological Science*, 5, 441-444.

Yang, D. (2009*) Researches of undergraduates' depression and anxiety*, (pp. 156-161). Beijing: Science Press.

Zhou, X. (2013) *School adaptability studies of undergraduates in China,* (p. 115). Unpublished PhD dissertation. Xiamen University

Having More, Asking More, Giving More: Effects of Social Class on Prosocial Behavior in China

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[Abstract] *Studies on the relationship between social class (a combination of income, education and occupational prestige) and prosocial behavior have yielded mixed evidence. In the present research, we examined the effect of objective social class on prosocial behavior with large and representative samples from China. Data from China Family Panel Studies (N = 33,600) revealed that higher class individuals donated more money, and volunteered more time, regardless of the wealth of their provinces. They were also more likely to ask for help, be asked for help and offer help across measured events. These findings challenge the expectations from previous psychological literature.*

[Keywords] *social class; socioeconomic status; wealth; prosocial behavior*

Introduction

He who seeks to be rich will not be benevolent. He who wishes to be benevolent will not be rich.

– Meng Zi, Teng Wen Gong I

If poor, they attended to their own virtue in solitude; if advanced to dignity, they make the whole kingdom virtuous as well.

– Meng Zi, Jin Xin I

How are the rich different from the poor in helping others? Chinese proverbs from Meng Zi mentioned above give us no definite answers. Exploring such a relationship is particularly crucial in China, considering its unique historical and sociocultural issues surrounding social class.

Social Class and Prosocial Behavior

Social class is a complex and multifaceted construct. It consists of objective features of material wealth and resources (income, education, occupation), as well as subjective perceptions of rank within a society (subjective socioeconomic status) (Piff, Kraus, Côté, Cheng, & Keltner, 2010). Viewed as a culture, social class has been reported to powerfully shape important life outcomes (Stephens, Markus, & Phillips, 2014).

In the mainstream, it has been argued that lower social class individuals are more likely to be prosocial theoretically. Living in stressful and threatening environments with diminished resources, they realize that relying on others is important for achieving their aims. Thus, they tend to be more prosocial and other-oriented (Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012). A few studies have been conducted and provide evidence for this rationale. They found that higher class individuals were less helpful, less charitable, less generous, and less trusting than their lower social class counterparts (Chen, Zhu, & Chen, 2013; Guinote, Cotzia, Sandhu, & Siwa, 2015; Piff, et al., 2010). These findings were incorporated into a psychological decision-making framework of prosociality (Keltner, Kogan, Piff, & Saturn, 2014).

However, some research pointed out other possibilities. On the one hand, a positive effect of social class on charitable donations (Gittell & Tebaldi, 2006; Hughes & Luksetich, 2008) and volunteering (Ramirez-Valles, 2006) is observed. On the another hand, some results note a U-shaped relation on

philanthropic giving (Schervish & Havens, 1995a, 1995b). The main theoretical considerations are that lower social class individuals have higher costs of prosociality, therefore the likelihood of prosocial behavior should decrease as the costs of prosociality increase (Dovidio, Piliavin, Schroeder, & Penner, 2006).

Questions of Previous Literature and Possible Moderators

One key problem is that studies proving a negative effect of social class and prosociality were based on rather small samples. Using several large and representative international samples, recent research found only a positive or no effect of social class on prosocial behavior varying across nations (Korndörfer, Egloff, & Schmukle, 2015). However, no studies have investigated why countries are moderators of the effect. In the present study, we examine whether a regions' wealth may play a role, as does trust (Hamamura, 2011). It is possible that until having reached a certain threshold of resources that people of higher social class will help others more or less, than lower class individuals.

Moreover, little is known about Chinese people of different social class. During the Cultural Revolution, an egalitarian distribution of resources was idealized, whereas wealth and education were stigmatized (Walder, 1989). In addition to the influence of the past, it is also unknown how the predicted solipsistic value of higher social class may affect prosocial behavior in a predominantly interdependent culture (Kraus, et al., 2012).

Method

Participants

The data for this study were obtained from the 2010 baseline survey of China Family Panel Studies (CFPS), covering 33,600 adults (16286 men; mean age = 45.51 years; SD = 16.41) from 25 provinces.

Objective Social Class

Income. The individuals' annual income was collected. Because of the skewness of the data, we further applied a categorical scheme. This resulted in the following categories: (1) <￥300, (2) ￥301–￥2,000, (3) ￥2,001–￥4,500, (4) ￥4,501–￥8,000, (5) ￥8,001–￥13,000, (6) ￥13,001–￥21,000, (7) >￥21,001.

Education. Respondents indicated their highest educational level attained by choosing from one of eight educational categories: (1) inadequately completed elementary education; (2) completed elementary education; (3) completed junior middle school; (4) completed senior middle school; (5) some university without degree/higher education lower-level tertiary certificate' (6) university with degree/higher education upper-level tertiary certificate; (7) master's degree; (8) doctoral degree.

Occupational prestige. Occupational prestige scores were calculated from Treiman's Standard International Occupational Prestige Scale (Treiman's SIOPS) (Ganzeboom & Treiman, 1996).

Computation of objective social class. We computed a composite measure of the objective social class of the individuals by averaging the standardized measures of income, education, and occupational prestige. If there was no record on one or two of the measures, we used the mean of the remaining measure(s). We also calculated the objective social class for each household by averaging each family members' social class for analysis of household donation.

Prosocial Behaviors

Donation behavior. Donating was measured at the family-level. First, respondents were asked whether they had donated any money in the year 2009. Those who affirmed the first question were asked how much money they donated. We determined the ratio of donations to the annual household income.

Volunteering. Two items assessed how many hours that participants spent on volunteer work everyday on average in the last non-vacation month, for workdays and holidays, respectively.

Seeking and offering help. Respondents were asked whether they had requested help in several important domains, by the question: "Up to present, have you asked for help because of the following things: (1) borrowing money, (2) school admission for children, (3) seeing a doctor, (4) seeking a job for yourself, (5) seeking a job for your child, or (6) none." Responses were recoded into a dichotomous scale (1 = asked for help, 0 = never asked for help). Those who did not select "none" were further asked whether they received help or not. Responses were recorded into a dichotomous scale (1 = received help, 0 = not received help). We averaged these responses as an indicator of mean proportions of receiving help. Another question assessed whether they had been asked for these kinds of help. Responses were also recoded into a dichotomous scale (1 = being asked for help, 0 = never being asked for help). Those who reported to be asked for help in these things were further asked whether they offered help or not. Responses were recorded into a dichotomous scale (1 = offered help, 0 = not offered help). Again we averaged these responses as an indicator of mean percent of offering help.

Provincial wealth. Provincial wealth was indexed by per capita GDP in 2010 (National Bureau of Statistics of China, 2015). Identical to the previous study (Hamamura, 2011), the original index was divided by 1,000 for the analyses that follows.

Analytical Procedure

Data were analyzed in multilevel model with HLM (Raudenbush, 2004). Participants (Level 1) were nested within provinces (Level 2). In addition, gender and age were entered as Level 1 predictors, because they were shown to substantially influence prosocial behaviors. All of the predictors were centered around the grand mean, except gender (1 = male, 0 = female) and social class, which were centered around group mean. Because previous research has found evidence of a U-shaped relation, we also tested for curvilinear relations.

Result

We found a growing proportion of donating households with increasing deciles of social class (Figure 1A). The results of our logistic regression analysis (Table 1, Model 1) revealed the distinct rise. Next, we analyzed the monetary amounts of the donations relative to the annual household income per decile of social class. Figure 1B suggests a U-shaped relation. The applied nonlinear regression model confirmed the quadratic relation (Table 1, Model 3). The moderation role of per capita GDP on the simple slope was not significant (Table 1, Model 2 & 4).

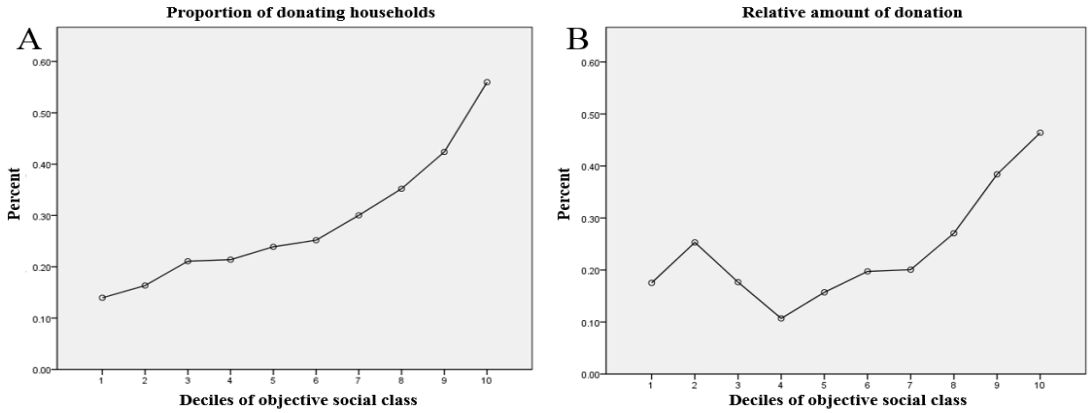

Figure 1. **The Effect of Objective Social Class on the Relative Amount of Donation.**

Table 1. ***Coefficients and Standard Errors from HLM Analyses: Donation***

		Donations(yes/no)		Percentage of contributed household income	
		Model 1	Model 2	Model 3	Model 4
Mean differences	Intercept	-1.024(.116)***	-1.015(.078)***	.225(.019)***	.229(.018)***
	GDP		.024(.004)***		.002(.0008)*
Objective social class slope	Intercept	1.021(.064)***	1.021(.058)***	.122(.020)***	.123(.021)***
	GDP		-.006(.003)		-.0009(.001)
Objective social class^2 slope	Intercept	-.036(.037)	-.036(.039)	.049(.024)*	.056(.022)*
	GDP		.0005(.002)		-.0006(.001)

Note: In Model 1 and 3, predictors were objective social class and objective social class^2. In Models 2 and 4, per capita GDP was entered along with the Model 1 and 3 predictors. Values in parentheses refer to standardized errors. N=14,504 for Model 1 and 2. N= 13,890 for Model 3 and 4. *p < .05. **p < .01. *** p < .001 (two-tailed).

We analyzed the volunteering time of workdays and holidays separately. Both results indicate that time on volunteering per decile of social class pointed toward a positive relation (Figure 2). As can be seen in Table 2, the regression confirmed the nonlinear effect for workdays. Again, we found no moderation role of per capita GDP.

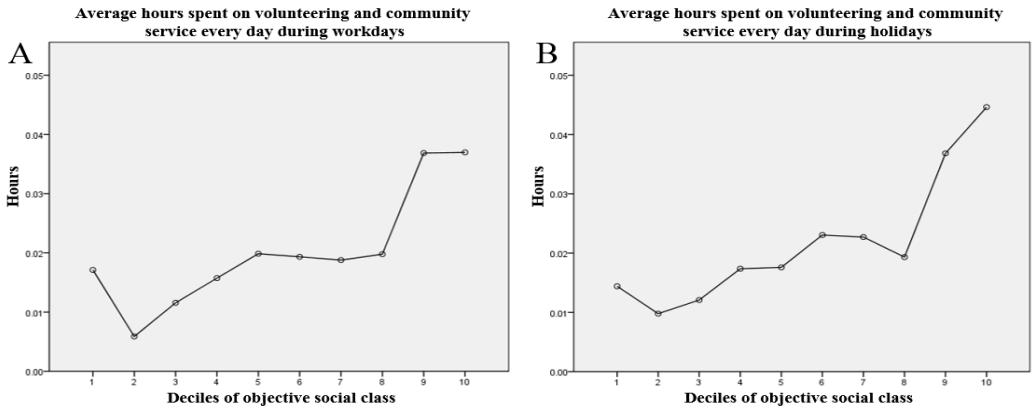

Figure 2. **The Effect of Objective Social Class on Volunteering Time**

Table 2. ***Coefficients and Standard Errors from HLM Analyses: Volunteer***

		Average hours spent on volunteering and community service every day during workdays		Average hours spent on volunteering and community service every day during holidays	
		Model 1	Model 2	Model 3	Model 4
Mean differences	Intercept	.018(.003)***	.018(.003)***	.019(.003)***	.020(.003)***
	GDP		.0001(.0001)		.0002(.0001)
Objective social class slope	Intercept	.014(.003)***	.014(.004)***	.016(.003)***	.016(.003)***
	GDP		-.00005(.0001)		.00004(.0001)
Objective social class^2 slope	Intercept	-.004(.002)*	-.003(.002) †	-.001(.002)	-.001(.002)
	GDP		.00005(.0001)		.00003(.0001)

Note: In Model 1 and 3, predictors were age, sex, objective social class and objective social class^2. In Models 2 and 4, per capita GDP was entered along with the Model 1 and 3 predictors. Values in parentheses refer to standardized errors. N= 33,578 individuals for the four models. † $p \leq .07$. *p < .05. **p < .01. *** p < .001 (two-tailed).

In terms of the probability to ask for help, it seemed to increase with higher categories of objective social class (Figure 3A). The logistic regressions confirmed the expected positive effect (Table 3, Model 1), which was significantly moderated by provincial wealth (Table 3, Model 2). As for the probability of getting help, most people received help (Figure 3B) and no difference appeared (Table 3, Model 3).

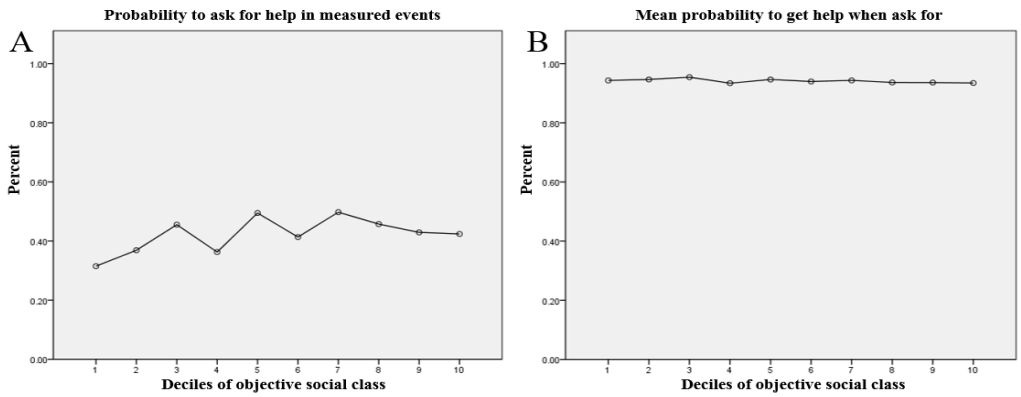

Figure 3. **The Effect of Objective Social Class on Seeking Help.**

Table 3. Coefficients and Standard Errors from HLM Analyses: Asking for Help

		Ask for help (yes/no)		Mean probability of getting helped when ask for
		Model 1	Model 2	Model 3
Mean differences	Intercept	-.447(.076)***	-.450(.071)***	.942 (.006)***
	GDP		-.010(.004)*	
Objective social class slope	Intercept	.202(.045)***	.191(.036)***	-.003(.004)
	GDP		-.005(.002)**	
Objective social class^2 slope	Intercept	-.106(.033)**	-.100 (.027)***	.002 (.004)
	GDP		.005(.002)**	

Note: In Model 1 and 3, predictors were age, sex, objective social class and objective social class^2. In Models 2, per capita GDP was entered along with the Model 1 predictors. Values in parentheses refer to standardized errors. N = 33,578 for for Model 1 and 2. N = 14,185 for for Model 3. *p < .05. **p < .01. *** p < .001 (two-tailed).

For the effect of objective social class on the probability of being asked for help, the solid line in Figure 4A points toward a clear positive effect. The corresponding logistic analyses confirmed this trend with moderation of per capita GDP (Table 4, Model 1 & 2). Moreover, people from higher social classes seemed to offer more help when asked (Figure 4B), which turned out to be marginally significant (Table 4, Model 3). This effect was also moderated by provincial wealth (Table 4, Model 4).

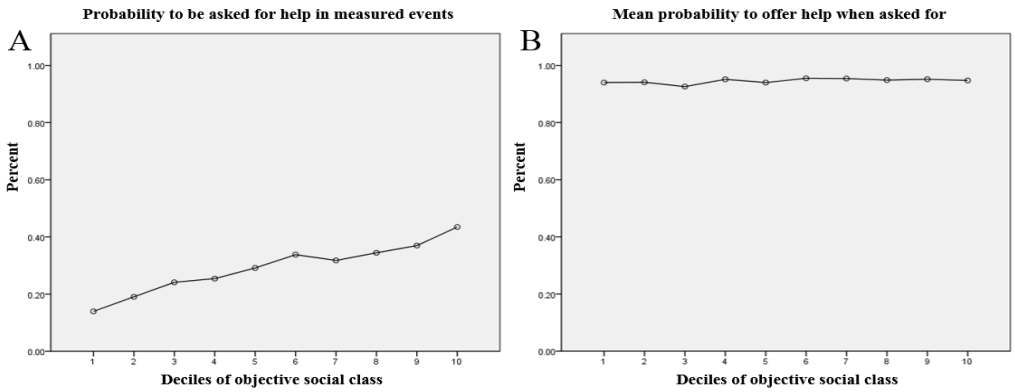

Figure 4. **The Effect of Objective Social Class on Offering Help.**

Table 4. ***Coefficients and Standard Errors from HLM Analyses: Offering Help***

		Being asked for help (yes/no)		Mean probability of offering help when asked for	
		Model 1	Model 2	Model 3	Model 4
Mean differences	Intercept	-1.120(.080)***	-1.118(.080)***	.950(.006)***	.949(.006)***
	GDP		.00001(.004)		-.0001(.0002)
Objective social class slope	Intercept	.467(.051)***	.456(.042)***	.008(.004) †	.005(.004)
	GDP		-.005(.002)**		-.0008(.0002)***
Objective social class^2 slope	Intercept	-.022(.031)	-.016(.025)	-.004(.003)	-.002(.003)
	GDP		.004(.001)***		.0004(.0001)***

Note: In Model 1 and 3, predictors were age, sex, objective social class and objective social class^2. In Models 2 and 4, per capita GDP was entered along with the Model 1 and 3 predictors. Values in parentheses refer to standardized errors. N = 33,566 for Model 1 and 2. N = 9,737 for for Model 3 and 4. † $p \leq .07$. *p < .05. **p < .01. *** p < .001 (two-tailed).

Discussion and Conclusion

These results contradict the prediction from the mainstream study (Kraus et al., 2012), but are consistent with other studies using a large sample (Gittell & Tebaldi, 2006; Hughes & Luksetich, 2008; Korndörfer, et al., 2015). The data reported here may provide a new perspective, that is, to consider the frequency of being asked for help, instead of focusing on spontaneous prosocial behavior. Because we found higher social class individuals were asked for more help by others, this gave them more chances for prosocial behavior. Moreover, they also sought more assistance in the measured events. A similar finding was observed in children (Calarco, 2011). In exchange, they are more likely to reciprocate. In addition, the probability to offer help after being asked was also lower for lower class people in our measured items. One

possible reason may be most of the measured kinds of helping call for material resource, which lower class people lack and can not provide. Further studies should try to examine other kinds of prosocial behavior.

Though higher social class individuals may be more self-focused (Kraus, et al., 2012), we do not think it necessarily leads to less prosocial behavior. Individualism and collectivism, which also differ in value of independence and interdependence, could be positively related (Taras, et al., 2014). Moreover, they could not predict how much time one volunteers, but only helps to clarify why people volunteer (Finkelstein, 2011). In the same token, we may think solipsistic value of the higher social class does not run counter to their willingness to help, although they may have different reasons to do so. Furthermore, doing prosocial behavior contributes to gaining social status (Kafashan, Sparks, Griskevicius, & Barclay, 2014). By helping more, upper class individuals facilitate the process of social reproduction, which is reasonable for them to do so.

With regard to the role of provincial wealth, we found no moderating effect on the relationship between social class and donations, as well as volunteering, which is in line with the explanation from the view of relative rank (Kraus, Tan, & Tannenbaum, 2013). However, per capita GDP did attenuate the difference on seeking and offering help, which showed opposite patterns of trust (Hamamura, 2011). It is possible that in wealthy regions, people have met certain basic needs so that they are less likely to request help from others on the domains measured.

The current research contributes to the literature by exploring this relationship in a country with unique sociocultural and historical factors on the topic of social class. It would be interesting to learn more psychological differences of the upper- and lower-class individuals in China.

References

Calarco, J. M. (2011). "I need help!" Social class and children's help-seeking in elementary school. *American Sociological Review, 76*(6), 862-882.

Chen, Y., Zhu, L., & Chen, Z. (2013). Family income affects children's altruistic behavior in the Dictator Game. *PloS One, 8*(11), e80419.

Dovidio, J. F., Piliavin, J. A., Schroeder, D. A., & Penner, L. (2006). *The social psychology of prosocial behavior*: Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Finkelstein, M. A. (2011). Correlates of individualism and collectivism: Predicting volunteer activity. *Social Behavior and Personality: An International Journal, 39*(5), 597-606.

Ganzeboom, H. B., & Treiman, D. J. (1996). Internationally comparable measures of occupational status for the 1988 International Standard Classification of Occupations. *Social Science Research, 25*(3), 201-239.

Gittell, R., & Tebaldi, E. (2006). Charitable giving: Factors influencing giving in US states. *Nonprofit and Voluntary Sector Quarterly, 35*(4), 721-736.

Guinote, A., Cotzia, I., Sandhu, S., & Siwa, P. (2015). Social status modulates prosocial behavior and egalitarianism in preschool children and adults. *Proceedings of the National Academy of Sciences, 112*(3), 731-736.

Hamamura, T. (2011). Social class predicts generalized trust but only in wealthy societies. *Journal of Cross-Cultural Psychology*, 0022022111399649.

Hughes, P., & Luksetich, W. (2008). Income volatility and wealth: The effect on charitable giving. *Nonprofit and Voluntary Sector Quarterly, 37*(2), 264-280.

Kafashan, S., Sparks, A., Griskevicius, V., & Barclay, P. (2014). Prosocial behavior and social status. In J. T. Cheng, J. L. Tracy, & C. Anderson (Eds.). *The Psychology of Social Status* (pp. 139-158). New York, NY: Springer.

Keltner, D., Kogan, A., Piff, P. K., & Saturn, S. R. (2014). The sociocultural appraisals, values, and emotions (SAVE) framework of prosociality: Core processes from gene to meme. *Annual Review of Psychology, 65*, 425-460.

Korndörfer, M., Egloff, B., & Schmukle, S. C. (2015). A large scale test of the effect of social class on prosocial behavior. *PloS one, 10*(7), e0133193.

Kraus, M. W., Piff, P. K., Mendoza-Denton, R., Rheinschmidt, M. L., & Keltner, D. (2012). Social class, solipsism, and contextualism: How the rich are different from the poor. *Psychological Review, 119*(3), 546.

Kraus, M. W., Tan, J. J., & Tannenbaum, M. B. (2013). The social ladder: A rank-based perspective on social class. *Psychological Inquiry, 24*(2), 81-96.

National Bureau of Statistics of China. (2015). Retrieved on Oct. 3, 2015 from http://data.stats.gov.cn/english/.

Piff, P. K., Kraus, M. W., Côté, S., Cheng, B. H., & Keltner, D. (2010). Having less, giving more: The influence of social class on prosocial behavior. *Journal of Personality and Social Psychology, 99*(5), 771.

Ramirez-Valles, J. (2006). Volunteering in public health: An analysis of volunteers' characteristics and activities. *The International Journal of Volunteer Administration, 24*(2), 15-30.

Raudenbush, S. W. (2004). *HLM 6: Hierarchical linear and nonlinear modeling*: Scientific Software International.

Schervish, P. G., & Havens, J. J. (1995a). Do the poor pay more: Is the U-shaped curve correct? *Nonprofit and Voluntary Sector Quarterly, 24*(1), 79-90.

Schervish, P. G., & Havens, J. J. (1995b). Explaining the curve in the U-shaped curve. *Voluntas: International Journal of Voluntary and Nonprofit Organizations, 6*(2), 202-225.

Stephens, N. M., Markus, H. R., & Phillips, L. T. (2014). Social class culture cycles: How three gateway contexts shape selves and fuel inequality. *Annual Review of Psychology, 65*, 611-634.

Taras, V., Sarala, R., Muchinsky, P., Kemmelmeier, M., Singelis, T. M., Avsec, A., …, Sinclair, H. C. (2014). Opposite ends of the same stick? Multi-method test of the dimensionality of individualism and collectivism. *Journal of Cross-Cultural Psychology, 45*(2), 213-245.

Walder, A. G. (1989). Social change in post-revolution China. *Annual Review of Sociology*, 405-424.

Why People Use Social Network Sites? The Influence of Interpersonal Communication Strategies on Social Network Sites

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[Abstract] *The Social Network Sites (SNS) have greatly changed our interpersonal communication strategies. The current research examined what kind of communication behaviors on SNS can satisfy one's relatedness need. Theoretically, this study divided communication behaviors on SNS by communication partner (to whom) and the way of communication (how). Empirically, a simple scale based on this division was developed. A survey containing this simple scale on communication behavior and relatedness need satisfaction was made among Chinese undergraduate students. The results showed that the scale developed by the current study is of good validity. Further analysis showed that communication with closest friends (no matter how) would promote relatedness satisfaction, while passive communication (no matter to whom) and with acquaintances (no matter how) would thwart relatedness satisfaction. These findings suggest that psychological need satisfaction can be varied by different SNS communication behaviors. Theoretical and practical implications are also discussed.*

[Keywords] *social network sites; interpersonal communication strategies; communication partner; relatedness need satisfaction*

Introduction

Social networks sites (SNS) have greatly changed our interpersonal communication strategies today (Burke, Marlow, & Lento, 2010; Ellison, Steinfield, & Lampe, 2007; Valkenburg, & Peter, 2007, 2009). Different from previous ordinary websites, forums, instant chatting tools and so on, the vast majority of SNS users have real name registration, so at least part of the social networks online and offline are in coincidence (Lampe, Ellison, & Steinfield, 2006). The biggest difference between SNS and previous methods of communication online is that SNS allow users to show their social networks, and to complete the visualization of their social networks through the help of the websites. However, these visualized social networks will not allow users to get to know as many strangers as previous online communication tools. They only make relationships that have been established offline already or have "latent ties" (Haythornthwaite, 2005) which are weak offline show out. According to the Statistical Report on Internet *Development in* China(CNNIC,2015). Up to December 2014, the amount of SNS users in China had reached 2.49 million, the using rate was 38.4%. This shows that SNS has become very important to our interpersonal communication.

As for the communication partners of SNS, researchers proposed that an important feature of an intimate relationship is that the object of the intimate relationship and self have some degree of integration, and the more closely related, the greater degree of integration between them (Aron, Aron, Tudor, & Nelson, 1991; Aron, Aron, & Smollan, 1992). In their 7-point Inclusion of Other in the Self (IOS) Scale developed, the two circles respectively represent the self and other, and the intimate relationship between them is represented by the overlapping area of the two circles.

The study conducted by Burke, et al. (2010) simply divided Facebook users' behaviors into two categories: directed communication and consumption. On the basis of their study, the current research divides communication behaviors on SNS into two categories: active communication and passive communication. Active communication means the user communicates with a friend one-to-one, such as sending messages to each other, commenting on friends' diaries and photos, or receiving a friend's comments, sending gifts or blessings, etc. Passive communication means just unilaterally reading other people's various status, diaries, and so on, but do not reply, speak or comment. In addition, there is a kind of social network activity which does not have a clear communication object, so we listed it as one separate category, namely, broadcasting, which means releasing a variety of dynamics about themselves on their home page.

In this study, we used the questionnaire survey to test the validity of the behaviors mentioned above. In addition to selecting the related criterion of relatedness need satisfaction, we also selected the segmented behavior on SNS proposed by Burke, et al. (2010) as the related criterion. Thus, we can test whether the participants' self-reporting of a certain category of communication behaviors (e.g. active communication with close friends) was based on the segmented behavior of this category (e.g. leaving messages for friends, commenting on friends' diaries, etc.).

This study chose Renren as the SNS platform. Because Renren is known as the Chinese version of Facebook, and there have been some studies also showed that although there were cultural differences, Renren and Facebook were equal in other aspects (Qiu, Lin, & Leung, 2013).

Based on previous studies, this study divides communication behaviors on SNS by communication partner (to whom) and ways of communication (how), and aims to develop a simple scale based on self-reporting, to effectively measure the communication behaviors that can satisfy the relatedness need of the individual.

Method

Participants

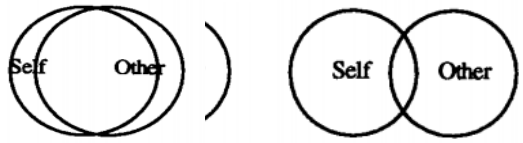
Participants were students from Wuhan University, China. We gave out 212 questionnaires and received 206. Then we got rid of the invalid questionnaires (e.g. both forward and reverse questions filled in the same options, or the average time spent on SNS per day was less than 10 minutes during the last half month). We also abandoned questionnaires with more than 5 values missing, so the total amount of questionnaires was 159. The valid return rate was 75%, among which boys and girls accounted for 44.3% and 49.8%, respectively. The average length of time of registration on SNS was 2.5 years.

Measurement

Measurement of the interpersonal communication strategy.

1. Dividing communication object. Adapted from the measure of intimacy relationship (Aron, Aron& Smollan,1992), we used three different types of graphics to describe the degree of intimacy, namely:

"Use one circle to represent yourself, and the other one to represent your SNS friend, so the overlapping area of the circles can be used to describe your intimacy relationships. The relationships between you and your SNS friend can be divided into three categories:"



Then we requested the participants to report the amount of these three types of SNS friends, and the average time spent on them, respectively.

2. Dividing ways of communication. Participants were told: "We divide the behaviors on SNS into three categories. The first category is active communication with friends, namely, the user communicates with a friend one to one, such as sending messages with each other, commenting on friends' diaries and photos, or receiving a friend's comments, sending gifts or blessings, etc. The second category is passive communication, namely, just unilateral read other people's various states, diaries, and so on, but do not reply, speak or comment. The third kind is broadcasting, that is, to release a variety of dynamics about self on the home page." Then we asked the participants to recall the proportion of time they spent on the three categories of behavior during the last half month.
3. Dividing communication time. Participants were told to report the proportion of time spent on different categories of ways of communication on three different types of friends.

Related criterion of ways of communication. In this study, the related criterion of active communication and passive communication could be respectively corresponding to directed communication and consumption, which is based on the specific behaviors of Facebook users obtained from the objective data (Burke, Marlow &Lento,2010).The measurement items of directed communication, consumption (not containing broadcasting),and broadcasting could be used as the related criterion, respectively, corresponding to three kinds of SNS behaviors of this study, namely, active communication, passive communication and broadcasting.

Related criterion of relatedness need satisfaction. In this study, the measurement of relatedness need satisfaction have two related criterions: Firstly, social connection **(**Deters & Mehl, 2013). Secondly, social success (Pea, Nass, Meheula, Rance, Kumar, Bamford, et al., 2012), the 7-item scale was used.

In order to validate the measure of SNS related behaviors, common method bias was examined, and two different variables related to relatedness need satisfaction were added. One was life satisfaction (Diener, Emmons, Larsen, & Griffin, 1985), and the other was social self-efficacy (Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, & Rogers, 1982) – 6 items in total. We expected that:

Ways of communication on SNS can only affect social connection and social success, will not affect life satisfaction and social self-efficacy.

The above measurements all used 7- points scales, ranging from1 (completely disagree) ~ 7 (completely disagree); the higher scores represented the higher level of social connection, social success, life satisfaction and social self-efficacy that the participants experienced.

Results

Descriptive Statistics

Descriptive statistics analysis on the demographic variables of this study showed that the frequency of using SNS was about 10-30 minutes per day during the last half month; the intensity of using SNS was "general"; the average number and median number of the total amount of SNS friends was 224 and 150, respectively; the average number and median number of the amount of closest friends was 49 and 20, respectively; the average number and median number of the amount of ordinary friends was 92 and 50, respectively, and the average number and median number of the amount of acquaintances was 80 and 40, respectively. From these data, we can see that the number of friends has a skewed distribution. Some participants have

relatively larger amounts of total SNS friends, closest friends, ordinary friends and acquaintances, so the arithmetic average numbers are pulled higher.

Among different kinds of friends, the proportion of time participants distributed to closest friends, ordinary friends and acquaintances was 42.99%, 25.34%, and 9.80%, respectively. Among different ways of communication, the proportion of time participants distributed to active communication, passive communication and broadcasting was 26.64%, 51.49% and 19.20%, respectively. This identifies that, among different kinds of friends, participants distributed most time to closest friends, and among the different ways of communication, participants distributed most time to passive communication.

Criterion-related validity of communication behavior. The correlations between the three kinds of communication behaviors (active communication, passive communication, and broadcasting) aimed at three types of friends (the most intimate friends, ordinary friends, and acquaintances) and the three behaviors summarized by Burke, Marlow and Lento (2010), namely, directed communication, consumption (not containing broadcasting), and broadcasting were analyzed. From the perspective of criterion-related validity, the results showed that, participants' recalling of these single-item measurements were significantly related to the corresponding results obtained from the complex behavior measurements conducted by Burke, et al, and also had good distinction, therefore, it indicated that the measurement of this research is of good validity.

Correlation between communication behaviors on SNS and relatedness need satisfaction. In this study, the relationships between communication partners, ways of communication, their interaction effect and relatedness need satisfaction were examined.

Table 1. ***Correlations between Communication Objects and Social Connections, Social Success, Life Satisfaction, and Social Self-Efficacy***

	Social Connections	Social Success	Life Satisfaction	Social Self-Efficacy
Time spent on closest friends	0.19(0.81)	0.02(0.79)	<-0.01(0.93)	-0.01(0.87)
Time spent on ordinary friends	0.12(0.14)	0.16* (0.046)	0.03(0.73)	0.05(0.54)
Time spent on acquaintances	-0.16* (0.045)	-0.17* (0.03)	-0.05(0.51)	-0.06(0.48)

As shown in Table 1, time spent on ordinary friends had significant positive correlation with one's social success, and time spent on acquaintances had both significant negative correlations with one's social connections and social success, but time spent on close friends was not significantly related to either criterion of the relatedness need satisfaction. Meanwhile, life satisfaction and social self-efficacy are not significantly related to the time spent on any type of friend. To a certain extent, this excludes the possibility of response bias.

Table 2. ***Correlations Between Communication Behaviors and Social Connections, Social Success, Life Satisfaction, and Social Self-Efficacy***

	Social Connections	Social Success	Life Satisfaction	Social Self-Efficacy
Active Communication	0.10(0.90)	0.08(0.30)	0.04(0.64)	-0.07(0.40)
Passive Communication	-0.16*(0.04)	-0.09(0.26)	-0.08(0.33)	-0.06(0.45)
Broadcasting	0.16*(0.04)	0.05(0.54)	0.06(0.47)	0.08(0.30)

As shown in Table 2, time spent on passive communication had significant negative correlation with one's social connections, and time spent on broadcasting had significant positive correlation with one's

social connections; meanwhile, life satisfaction and social self-efficacy were not significantly related to the time spent on any way of communication. To a certain extent, this excludes the possibility of response bias.

Table 3. ***The Interaction Effect of Communication Objects and Ways of Communication and its Correlation with Other Variables***

		Social Connections	Social Success	Life Satisfaction	Social Self-Efficacy
Closest Friends	active communication	0.04(0.60)	0.07(0.39)	<0.01(0.98)	-0.07(0.45)
	passive communication	0.01(0.94)	-0.03(0.73)	-0.03(0.71)	0.04(0.61)
Ordinary Friends	active communication	0.10(0.22)	0.19*(0.02)	0.16(0.05)	0.09(0.28)
	passive communication	0.07(0.35)	0.07(0.40)	-0.07(0.37)	0.01(0.94)
Acquaintances	active communication	-0.14(0.09)	-0.19*(0.02)	-0.25**(<0.01)	-0.05(0.55)
	passive communication	-0.16*(0.046)	-0.13(0.12)	-0.01(0.86)	-0.06(0.48)

As shown in Table 3, passive communication with acquaintances had significant negative correlation with social connections, and active communication with acquaintances had significant negative correlation with social success. These results show that the communication with acquaintances can hinder relatedness need satisfaction. Meanwhile, active communication with ordinary friends had significant positive correlation with social success. This result shows that the communication with ordinary friends can promote relatedness need satisfaction. In addition, life satisfaction and social self-efficacy only have significant negative correlation with active communication with acquaintances, and are not significantly related to other ways of communication.

Discussion

The current study has two purposes. The first purpose was to examine which communication behavior can best satisfy the relatedness need of the individual in SNS. We subdivided communication behaviors by communication partner and way of communication. The results showed that, although the subdivision of the communication behavior is not fully apparent, there are findings consistent with the above findings. One is that communication with closest friends will promote relatedness satisfaction, and the other is passive communication and communication with acquaintances will hinder relatedness satisfaction. Therefore, active communication with closest friends will be of the best benefit, while passive communication with acquaintances may be an obstacle. The second purpose of this study was to measure the communication behaviors on SNS, and we aim to develop both a simple and easy to operate tool. The validity of the measurement is effective, but it is not concise enough.

The current study also suggested several points for future studies. First, among different kinds of communication partners, participants might not be very clear about the distinction between closest friends and ordinary friends, so future research should just divide categories of friends into close friends and acquaintances. Secondly, among different ways of communication, broadcasting lacks clear communication objects, so the study is unable to explore its interaction effect with communication objects, and it is also very difficult to compare its degree of psychological involvement with either active

communication or passive communication. On the distribution of time, the proportion of time distributed to broadcasting was the least. Therefore, to make the scale more concise and easier to operate, future research could just use active and passive communication as related criterions.

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References

Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of other in the self scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology, 63*(4), 596-612.

Aron, A., Aron, E. N., Tudor, M., & Nelson, G. (1991). Close relationships as including other in the self. *Journal of Personality and Social Psychology, 60*(2), 241-253.

Burke, M., Marlow, C., & Lento, T. (2010, April). Social network activity and social well-being. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, (pp. 1909-1912). ACM.

CNNIC. (2015). *CNNIC releases 35th statistical report on internet development in China.* Retrieved from China Internet Network Information Center website: http://www1.cnnic.cn/AU/MediaC/rdxw/2015n/201502/t20150204_51650.htm.

Deters F. G., & Mehl, M. R. (2013). Does posting Facebook status updates increase or decrease loneliness? An online social networking experiment. *Social Psychological and Personality Science, 4*(5), 579-586.

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71-75.

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook 'friends': Exploring the relationship between college students' use of online social networks and social capital. *Journal of Computer-Mediated Communication, 12*(4), 1143-1168.

Haythornthwaite, C. (2005). Social networks and internet connectivity effects. *Information, Communication, and Society, 8*(2), 125-147.

Lampe, C., Ellison, N., & Steinfield, C. (2006). A Face (book) in the crowd: Social searching vs. social browsing. *Proceedings of the 2006 20th Anniversary Conference on Computer*, 167-170.

Pea, R., Nass, C., Meheula, L., Rance, M., Kumar, A., Bamford, H., Zhou, M., et al. (2012). Media use, face-to-face communication, media multitasking, and social well-being among 8-to 12-year-old girls. *Developmental Psychology, 48*(2), 327-336.

Qiu, L., Lin, H., & Leung, A. K. (2013). Cultural differences and switching of in-group sharing behavior between an American (Facebook) and a Chinese (Renren) social networking site. *Journal of Cross-Cultural Psychology, 44*(1), 106-121.

Sherer, M., Maddux, J. E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R. W. (1982). The self-efficacy scale: Construction and validation. *Psychological Reports, 51*(2), 663-671.

Valkenburg, P. M., & Peter, J. (2007). Preadolescents' and adolescents' online communication and their closeness to friends. *Developmental Psychology, 43*(2), 267-277.

Valkenburg, P. M., & Peter, J. (2009). Social consequences of the internet for adolescents a decade of research. *Current Directions in Psychological Science, 18*(1), 1-5.

Why are Materialists So Materialistic? The Role of Cultural Orientation and Personal Internet Usage

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[Abstract] *How is materialism influenced by culture orientation and Internet usage? Former studies found that materialism was influenced by the unmet psychological needs and the cultivation of the mass media. Using the data of 277 Chinese students' questionnaires, we found that personal Internet usage intensity can enhance individual materialism. Further analysis showed that personal Internet usage intensity moderated the positive influence of personal cultural orientation (i.e. vertical individualism) on one's personal materialistic value. Besides the theoretical contribution to the studies on causes of materialism, the current study also shed light on the education of younger generation by suggesting new ways of reducing one's materialism.*

[Keywords] *materialism; materialistic values; culture orientation; internet usage*

Introduction

Materialism is appropriately conceptualized as a consumer value, representing a mind-set or constellation of attitudes regarding the relative importance of acquisition and possession of objects in one's life. For materialists, possessions and their acquisition are at the forefront of personal goals (Richins, & Dawson, 1992). How do materialists become so materialistic? Or, which factors cause materialism? Previous studies have found two main causes: the unmet psychological needs (e.g., insecurity, see Kasser, 2014), and the cultivation of the mass media (mainly TV, e.g., Shrum, 2005).

The current study proposes a new predictor of materialism, namely one's personal cultural orientation. Vertical individualism is predicted to have a positive influence on materialism, and considering the more and more important role the Internet (rather than TV) plays in people's daily life, the current study proposes that individuals' exposure to the Internet would predict his/her materialism. Furthermore, Internet usage was proposed to enhance the link between cultural orientation and materialism as a moderator. In the following sections, first, based on the review of the literature on materialism, cultural orientation and Internet usage, a theoretical model and related hypotheses are developed. Then a survey is introduced to test the model, and partial correlation and moderation analysis are conducted. Finally, the theoretical contribution and potential practical applications are also discussed.

Literature Review and Hypotheses

Vertical Individualism and Personal Materialism

Individualism includes two types: vertical individualism (VI) and horizontal individualism (HI). VI means being distinguished with others, acquiring status, and having competition. HI means being unique and self-reliant, with no need of competition (Triandis & Gelfand, 1998). Some research identified that materialism is positively related to self-enhancement, focusing on wealth and power (Kilboure, Grünhagen, & Foley, 2005). So, it seems that it is VI, rather than HI, which is more likely related to materialism, and within affluent societies, consumption is most often used as an indicator of success. So, we expected that:

H1: Personal cultural orientation (vertical individualism) will be positively related to level of personal materialism.

Personal Internet Usage and Personal Materialism

According to cultivation theory (Gerbner, et al. 2002), the world of television is significantly different from the real world, and this distortion may influence the values of viewers. Viewing televised portrayals of affluence not only makes people perceive that others are rich, but also influences viewers' own material values, and this suggests that values judgments may be influenced during the encoding process (Shrum, et al., 2005). With the development of the Internet, more people began to use the Internet instead of TV to obtain social information, so we expect that:

H2: Personal Internet usage will be positively related to level of materialism.

Moderating Effect of Personal Internet Usage

Chan, K., et al. (2007) stressed that the motivation for advertisement viewing, people who viewed more advertisements were more likely to make social comparisons with media figures, and they found that social comparison with friends and with media figures were both positive predictors of materialism. Individuals with vertical individualism orientation are more likely to make social comparisons, so their Internet usage will have more impact on their personal materialism. On the other hand, the more one uses the Internet, their cultural orientation of vertical individualism will have more impact on their personal materialism. We expect that:

H3: *Personal Internet usage can moderate the effect of personal cultural orientation on personal materialism.*

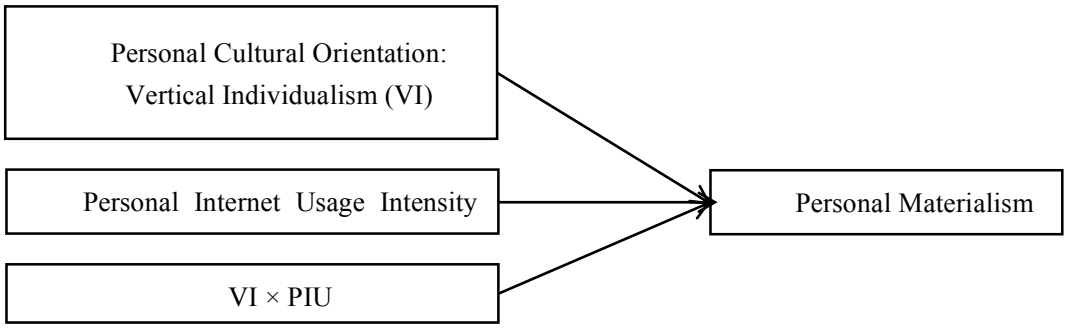

Figure 1. **The Conceptual Model of PCO, PIU and PM**

Method

Participants and Procedure

Two hundred and seventy seven participants were recruited from Ludong University, China – 21 males and 256 females. All participants completed the questionnaires in the classroom for course credit.

Measurement

Personal Materialism (PM). Personal materialism was measured by the 9-item Materialistic Value Scale (Richins, 2004), e.g. "I admire people who own expensive homes, cars, and clothes." Participants were given a list of values and were asked to indicate how important they considered each value as their

guiding principle of life on a 7-point scale (1=completely unimportant, 2=not important, 3=not very important, 4=more or less important, 5=important, 6=very important, and 7=of the utmost importance). In the current study, the Cronbach's α is 0.862.

Personal Cultural Orientation (PCO). The 16-item scale of Horizontal and Vertical Individualism and Collectivism (Triandis & Gelfand, 1998) was used to measure participants' personal cultural orientation, e.g. "I'd rather depend on myself than others" (Horizontal Individualism, HI), "It's important that I do my job better than other" (Vertical Individualism, VI), "If a coworker gets a prize, I would feel proud" (Horizontal Collectivism, HC), and "Parents and children must stay together as much as possible" (Vertical Collectivism, VC). Participants were asked to rate how much each of the statements described them on a 5-point scale (1=not at all like me, 2=somewhat inaccurate, 3=neutral, 4=somewhat accurate, or 5=very much like me). The reliability analysis showed that the Cronbach's α = 0.833 (HI), α = 0.810(VI), α = 0.814 (HC), and α = 0.751 (VC).

Personal Economic Condition (PEC). Participants' economic condition was measured by their self-reporting of their relative position in society. They were asked that "on a scale from 1 to 10 with 10 being people who are the most well off in society, and 1 being the people who are least well off, where would you describe your own position." Therefore, in this 1 to 10 scale, the higher of the score, the higher of participant's self-reported economic condition.

Personal Internet Usage (PIU). The Personal Internet Usage was conceptualized as containing three aspects with 2 items for each aspect. The first aspect measured how often the Internet was used as a means of obtaining information and communication. Participants were asked, (1) "How often do you use the Internet to get news?" and (2) "How often do you use the Internet to stay in touch with family and friends?" The second aspect measured the ease of Internet accessibility. Participants were asked, (3) "How often do you use a tablet/iPad as means to access the Internet?" and (4) "How often do you use a smart phone as a means to access the Internet?" All of the above 4 items were rated on 5-point scale (1=Never, 2=Rarely, 3=Occasionally, 4= Frequently, or 5=Always). The third aspect asked participants to report their behavioral frequency of Internet usage, namely (5) "How many days a week are you online (i.e. using the Internet)?" (from 1 to 7 days) and (6) "How many hours are you on-line during a typical day?" (from 0 to 24 hours). Each of the 6 items was standardized as Z score first, and then averaged as the index of their Personal Internet Usage.

Results

The Effect of Vertical Individualism and Personal Internet Usage on Personal Materialism

Zero-order and partial correlation were calculated and shown in Table 1.

Table 1. ***Zero-Order and Partial Correlation***

	Mean	*SD*	*PM*		*PCO(VI)*		*PEC*	
			Zero-order	*Partial*	*Zero-order*	*Partial*	*Zero-order*	*Partial*
PM	3.843	0.961	1					
PCO(VI)	4.110	1.690	0.369**	0.393**	1			
PEC	0.081	0.510	-0.012 (p=0.842)	-0.035 (p=0.571)	0.030 (p=0.625)	0.037 (p=0.550)	1	
PIU	3.174	0.686	0.144*	0.164**	-0.076 (p=0.203)	-0.119 (p=0.053)	0.096 (p=0.117)	0.100 (p=0.105)

** indicates that the coefficient is significant at p<0.05 level. ** indicates that the coefficient is significant at p<0.01 level. The same below.*

Note that each partial correlation coefficient was calculated by controlling other variables. When the Personal Cultural Orientation was used as the control variable, all of the remaining dimensions were controlled. As shown in Table 1, VI and PIU can both positively predict one's Personal Materialism for zero-order correlation and partial correlation, thus H1 was supported.

The Moderating Effect of Personal Internet Usage

To examine the moderation role of PIU in PCO and PM, a hierarchal linear regression model was built. Note that before calculating the regression model, all control variables and predictors had been standardized. First, the participant's gender and social economic status were introduced as predictors in the first layer as the control variable. Then, personal Internet usage and vertical individualism were introduced in as the second layer. Finally, the product term of vertical individualism and personal Internet usage was introduced into the regression model.

Table 2. ***The Moderation Analysis of PIU on VI and PM***

Variable	Personal Materialism		
	Model 1	***Model 2***	***Model 3***
(Constant)	3.826 **	3.835 **	3.845 **
Control Variable			
Gender	0.123 *	0.108 *	0.111 *
PEC	-0.011	-0.037	-0.033
Independent Variable			
VI		0.356 **	0.352 **
Moderator			
PIU		0.152 **	0.148 **
Interaction Effect			
VI × PIU			0.120 *
$\triangle R^2$	0.017	0.169	0.186
F_{change}	2.303	24.282	5.366
p	0.102	<0.001	0.021

The results in Table 2 showed that both VI and PIU can significantly predict PM positively, and their interaction effect on PM was also significant. Thus, H3 was supported, namely PIU can moderate the relationship between people's personal cultural orientation (vertical individualism) and their personal materialism.

We drew the plot to show how PIU moderated the link of VI and PM. The simple slopes analysis shows that when PIU is high (LSD above the average), VI can significantly predict PM, with gradient of simple slope = 0.472, t = 6.185, p < 0001. In addition, when PIU is low (LSD below the average), the influence of VI on PM also reached a significant level, with gradient of simple slope = 0.232, t = 2.952, p = 0.003. The examination of the differences between these two slopes showed that the two slopes differed from each other significantly, with t = 2.189, p = 0.03. This means that the higher level of PIU, the stronger the influence of VI on one's PIU.

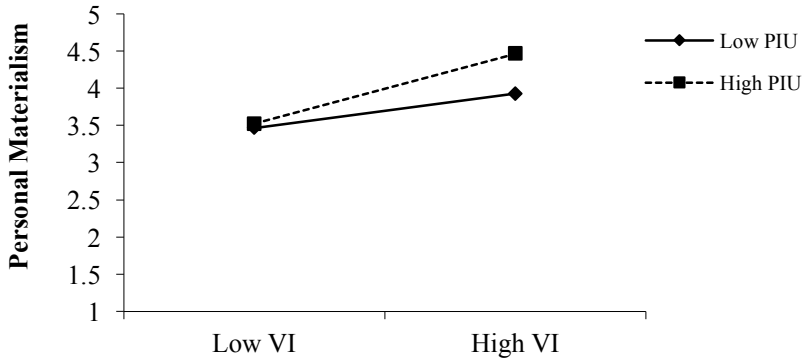

Figure 2. **The Moderating Role of VI on PIU and PM**

Another way of interpreting the interaction effect is considering the PIU as predictor and VI as moderator. The simple slopes analysis showed that when VI is high (LSD above the average), PIU can significantly predict PM, with gradient of simple slope = 0.268, $t = 3.503$, $p = 0.001$. However, when VI is low (LSD below the average), the influence of PIU on PM did not reach a significant level, with gradient of simple slope = 0.028, $t = 0.357$, $p = 0.721$. This means that only for high scorers of VI, PIU can have a significantly positive influence on PM. For low VI people, their use of the Internet will have no impact on their materialistic value.

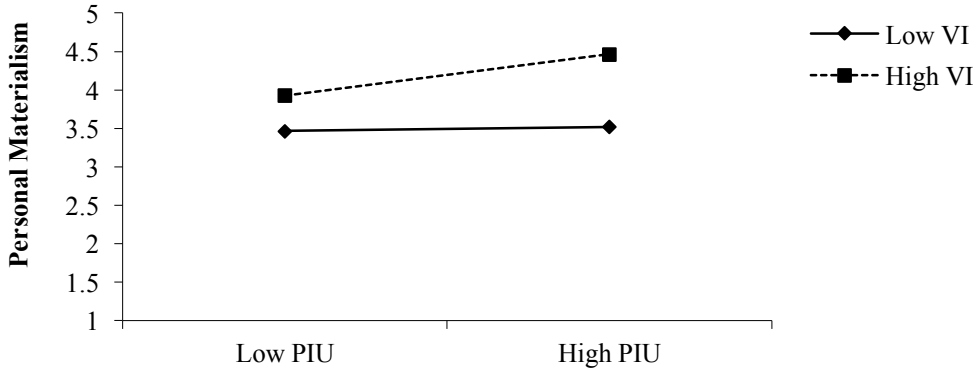

Figure 3. **The Moderating Role of VI on PIU and PM**

Discussion & Conclusion

The results of the current study showed that personal cultural orientation (i.e. vertical individualism) and personal Internet usage can positively predict one's personal materialistic value. Besides, each can moderate the other's influence on personal materialism. The more one uses the Internet, their cultural orientation of vertical individualism can have more impact on their personal materialism. On the other hand, the more one adopts a vertical individualism orientation, Internet usage can have a greater impact on their personal materialism.

Many studies have identified that materialism is positively related to many negative effects, such as the declining of well-being (Burroughs & Rindfleisch, 2002; Deckop, Jurkiewicz, & Giacalone, 2010), a sense of insecurity (Kasser, & Ryan, 1996), and contingent self-worth (Kasser, 2002). For the predictors of materialism, previous studies found that unmet psychological needs and mass media were two main

sources. The current study extended this line of research by introducing the individual's personal cultural orientation and personal Internet usage. These findings are key to the education of the younger generation, since the proportion of Internet users aged 20-29 years old and below 20 years old are 31.4% and 25.6% of the overall Chinese "netizens", respectively (CNNIC, 2015). One's personal cultural orientation is not relatively easy to change. So, to reduce one's materialism, the current study suggests that they use less Internet. In this way, the negative effects that materialism brings to the physical and mental health of young people may be reduced.

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References

Burroughs, J. E., & Rindfleisch, A. (2002). Materialism and well-being: A conflicting values perspective. *Journal of Consumer Research, 29*(3), 348-370.

Chan, K., & Prendergast, G. (2007). Materialism and social comparison among adolescents. *Social Behavior and Personality, 35*(2), 213-228.

CNNIC. (2015). *CNNIC releases 36th Statistical Report on Internet Development in China.* Retrieved from China Internet Network Information Center website:http://www.cnnic.net.cn/hlwxzbg/hlwtjbg/201507/t20150722_52624.htm.

Deckop, J. R., Jurkiewicz, C. L., & Giacalone, R. A. (2010). Effects of materialism on work-related personal well-being. *Human Relations, 63*(7), 1007-1030.

Dittmar, H., Bond, R., Hurst, M., & Kasser, T. (2014). The relationship between materialism and personal well-being: A meta-analysis. *Journal of Personality and Social Psychology, 107*(5), 879-924.

Gerbner, G., Gross, L., Morgan, M., Signorielli, N., & Shanahan, J. (2002). *Growing up with television: Cultivation processes.* Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin, 22*(3), 80-87.

Kasser, T. (2002). *The high price of materialism.* Cambridge, NJ: The MIT Press.

Kilbourne, W., Grünhagen, M., & Foley, J. (2005). A cross-cultural examination of the relationship between materialism and individual values. *Journal of Economic Psychology, 26*(5), 624-641.

Richins, M. L., & Dawson, S. (1992). A consumer values orientation for materialism and its measurement: Scale development and validation. *Journal of Consumer Research, 19*(3), 303-316.

Richins, M. L. (2004). The material values scale: Measurement properties and development of a short form. *Journal of Consumer Research, 31*(1), 209-219.

Shrum, L. J., Burroughs, J..E., & Rindfleisch, A. (2005). Television's cultivation of material values. *Journal of Consumer Research, 32*(3), 473-479.

Triandis, H. C., & Gelfand, M. J. (1998). Converging measurement of horizontal and vertical individualism and collectivism. *Journal of Personality and Social Psychology, 74*(1), 118-128.