Sub-Cultural Differences in Information Ethics across China: Focus On Chinese Management Generation Gaps

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Journal of the Association for Information Systems

JAIS

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Abstract

We combined scenarios based on information ethics issues identified by Mason (privacy, accuracy, property, and access) with questions based on the stages of moral development proposed by Kohlberg to empirically test two theories rooted in sociology: generational subculture theory and life-cycle theory. Evidence from more than 1,100 managers across China strongly supports generational subculture theory by revealing significant differences in information ethics among the Republican, Revolutionary, and Reform generations. The generation gaps suggest that events such as the Cultural Revolution as well as the implementation of both the Open Door Policy and the One-Child Policy have shaped the information ethics of Chinese managers. We also discovered fundamental tensions between Western moral philosophies (based on rules, democracy, individual rights, and personal freedoms) and the traditions of Chinese culture (based on relationships, hierarchy, collective responsibilities, and social harmony). The ethical dimensions of the evolution from traditional China to modern China, and from particularistic trust to systemic trust, are discussed. Combined with previous Chinese management research by Martinsons, our study implies that it will be difficult to resolve data privacy and intellectual property issues. It also raises concerns about cross-cultural research such as GLOBE and Hofstede that rely on narrow demographic samples. Further research is recommended to examine the information and knowledge management of Baby Boomers, Generation X, Generation Y (or Millennial Generation), and other sub-cultural groups, in order to determine the generalizability of "doing the right thing".

Sub-Cultural Differences in Information Ethics across China: Focus On Chinese Management Generation Gaps

1.   Introduction

As management educators, business consultants, and academic researchers based in (the People's Republic of) China, we have become increasingly concerned about ethics. We perceive that many of our students and clients and even some of our professional peers tend to neglect or inadequately consider the ethical aspects of their decisions and actions. Advice to behave more ethically often falls on deaf ears.

As relatively experienced members of our respective professions, we perceive that younger people tend to be particularly ignorant or dismissive about ethical dilemmas when they involve the "management" of information and its associated technology. A fellow professor studying the One-Child Policy in mainland China recently expressed a similar concern, saying "I seriously doubt that those born after 1980 have any sense of shame or respect". Others portray the younger generation in China as self-centered and pampered (Zhang, 2009).

As scholars deeply interested in history, we recognize that these are not new or unique perceptions and portrayals. Elders in societies throughout the ages are likely to have held similar viewpoints. However, our specific concerns about the ethics of the younger generation in China have been reinforced by the following: thefts of intellectual property by technicians repairing computing equipment under the supervision of young managers (cf. Lee and Patel, 2008), the misappropriation of copyrighted materials associated with the Beijing Olympics by youthful "entrepreneurs" (Zhang, 2008), and widespread cheating on college entrance exams (cf. Xinhua, 2009) as well as many other educational tests.

As social scientists, we have acted upon our concerns by conducting specific research. With respect to the ethics of managing information, we believe that it is critical to move beyond speculation, anecdotes, and personal biases. We aimed to systematically gather and analyze objective evidence that is useful for discussion and policy making. Consequently, we undertook a large-scale study of managers across China. This article reports on the sub-cultural differences that we found, with a specific focus on the generational gaps in the information ethics of these key decision makers.

2.   Information Ethics

Ethical issues emerge whenever a decision or an action may impair or enhance the well-being of an individual or a group of people. Ethical dilemmas arise because competing moral values or conflicting factors become relevant due to the absence of universally-accepted decision-making criteria or outcome preferences.

Ethical issues associated with the development and application of information technologies have been termed *information ethics*. Over the last few decades, information ethics has evolved from its origins in library and information science (LIS) to become a multi-dimensional field of interest in several scholarly disciplines, including information systems (IS). In one of the first articles to explicitly focus on information ethics, Kostrewski and Oppenheim (1980) discussed issues such as the confidentiality of information, biases in the information that is provided to various business stakeholders, and the use of computing facilities at work.

Richard Mason (1986) identified four types or categories of issues (see Table 1) that involve information ethics: privacy, accuracy, property, and access. Privacy issues arise from the information that people reveal about themselves or their associations and include the conditions under which this type of information is revealed and how it is subsequently safeguarded. Accuracy issues reflect the need for responsibility and accountability in order to ensure the authenticity, fidelity, and accuracy of information. Property issues reflect the ownership and pricing of both information and channels that are used to transmit it. Access issues deal with the rights, responsibilities, and/or privileges to obtain or receive specific information (Mason, 1986).

Table 1. Information Ethics - Four Issues
Privacy: What information about oneself or one's associations must a person reveal to others, under what conditions and with what safeguards? What things can people keep to themselves and not be forced to reveal to others?
Accuracy: Who is responsible for the authenticity, fidelity and accuracy of information? Similarly, who is to be held accountable for errors in information?
Property: Who owns information? What are the just and fair prices for its exchange? Who owns the channels through which information is transmitted and distributed?
Access: What information does a person or an organization have a right or a privilege to obtain, under what conditions and with what safeguards?

Source: Mason (1986).

The framework of issues proposed by Mason (1986) is certainly not the only way to conceptualize information ethics. For example, Khazanchi (1995) used seven dimensions (accountability, conflict of interest, disclosure, integrity, personal conduct, protection of privacy, and social responsibility) in a study of ethical behaviour with IS. Severson (1997) argued that the major principles of information ethics are: respect for intellectual property, respect for privacy, fair representation (accuracy), and *non maleficence*. The latter concept of "do no harm" echoes the Hippocratic Oath traditionally taken by medical practitioners and also one of the guiding principles of Google as the corporation seeks to fulfil its mission to "organize the world's information and make it universally accessible and useful" (Google, 2009).

For the IS profession, Davison (2000) identified four fundamental issues as follows: codes of ethics, intellectual property rights, professional accountability, and data protection. Subsequently, Davison et al. (2003) considered the implications of information privacy for IS research. Meanwhile, Davison and his colleagues developed and applied an instrument containing different dilemmas or scenarios to study the ethics of IT professionals. Davison et al. (2006) reported on the ethics of IT professionals in Hong Kong while Davison et al. (2009) extended the study to mainland China and Japan.

The four issues proposed by Mason (1986) are also far from exhaustive, regardless of how they are classified. New dimensions of information ethics have undeniably emerged since the 1980s along with advances in information technology. For example, the growth of the Internet and the wealth of information now being managed in cyberspace has raised specific concerns about cyberethics (Spinello, 2005).

Conger et al. (1995) extended Mason's definition of key issues after surveying 79 business professionals and students. They grouped 12 factors into the following five clusters: ownership, access, motivation, responsibility, and privacy. Conger et al. (1995) also stressed the importance of separating those who experienced the ethical dilemma (users) from those who are affected by its consequences (stakeholders).

A co-editor of this issue (Land, 2009) suggested that Mason's classic framework could be improved by adding a fifth category, namely, knowledge manipulation or "embracing censorship, propaganda and spin, PR and advertising, and much else." Land (2009) further noted, "It is difficult to include information omission in the accuracy category," and also hard to fully capture the problem of plagiarism, because it is both "an unacknowledged theft from the originator" and "an attempt to deceive those relying on the object system."

Mason's framework for identifying and classifying ethical issues undeniably has limitations in terms of encompassing the wide assortment and complexity of ethical issues encountered in today's information-intensive world. However, the parsimony and popularity of this classic framework were among the factors we considered when we selected it as the conceptual foundation for our studies of a largely-neglected topic: information ethics.

3.   Research Design and Focus

In designing our research, we found it useful to combine Mason's issues framework with the model of cognitive moral development (CMD) proposed by Lawrence Kohlberg (1976). Kohlberg (1976) sought to determine how moral judgement develops by presenting scenarios involving ethical dilemmas to a broad cross-section of people. He identified six stages of ethical reasoning: (1) obedience to avoid punishment, (2) instrumental purpose and exchange to satisfy personal needs and desires, (3) conforming to social expectations, (4) abiding by established laws and rules, (5) conforming to the principles of human rights and social contracts, and (6) upholding principles of rights and justice.

Scenarios based on Mason (1986) and questions related to the stages proposed by Kohlberg (1976) were developed and first applied by Martinsons and So (2003). In each scenario, a central character faces an ethical dilemma. Summaries of the scenarios are provided in Table 2. The resulting research instrument has been used subsequently to study international differences in information ethics (see Martinsons and So, 2004).

Table 2. Scenario Summaries for Mason's Four Types of Ethical Issues	
Type of Ethical Issue	Scenario Summary
Privacy	Scenario A involves the monitoring of messages sent and received by employees on a corporate e-mail system.
Accuracy	Scenario B involves the responsibilities of those providing and relying upon diagnoses generated by a medical expert system.
Property	Scenario C involves the property rights of those involved in the development and commercialization of breakthrough software.
Access	Scenario D involves the use of corporate information systems outside of normal working hours by moonlighting employees.

The initial phase of an ambitious and comprehensive research agenda compared the information ethics of managers in the United States (of America) and (the People's Republic of) China. Managers from the U.S. and China judged the accuracy and access dilemmas similarly, but differed significantly and consistently with respect to their judgments on both the privacy and property scenarios. The American and Chinese managers also differed significantly in terms of how important specific factors were in shaping their judgments (Martinsons and So, 2003).

The differences in ethical processing between American and Chinese managers were attributed to cultural factors. Martinsons and So (2003) argued that both the importance of personal relationships and the need to conform to social expectations in the Chinese culture represent a stark contrast to the paramount role of systemic rules and the emphasis on individualism and self-interest in the United States. Martinsons (2008) subsequently developed a theory to explain how and why personal relationships flourish in the absence of systemic rules.

The aforementioned international research on information ethics has a sound design, uses rigorous methods, and is gathering large samples of data. However, the respondents tend to be senior managers. Nearly all of the Chinese managers in the U.S.-China comparative study were over 40 years of age with responsibilities for corporate leadership or regional/division management (Martinsons and So, 2003). The study of a demographic subset that is constrained by gender and age limits generalizability and tends to obscure cultural changes over time. It would be unable to confirm empirically what we have observed anecdotally, namely a degeneration of ethical standards among younger Chinese on matters pertaining to the management and use of information and its associated technology.

More generally, the empirical macro-approaches of cross-cultural researchers such as Hofstede (1980, 2001) tend to assume and/or imply that societies have homogeneous values and behaviors. For example, Hofstede (1980, 2001) found that the Chinese score higher on power distance but lower

on individualism than Americans and most other Westerners. Recent cross-cultural research projects, such as the GLOBE study (House et al., 2004), have similar assumptions and/or implications about the homogeneity of societal values and behaviours. As suggested by the IS literature (Martinsons and Davison, 2003; Myers and Tan, 2002), such generalization at the societal or cultural level obscures important information. In some circumstances, it may even be naive and counterproductive.

Nations, societies, and even large organizations tend to have sub-groups or sub-cultures, each with distinctive norms and values. Differences between national cultures have been the focus of many *cross-cultural* studies. In contrast, differences between national, social, or organizational sub-cultures have been subject to much less study. Sub-cultural differences have certainly been asserted, particularly between genders and among generations. For example, we have been told that "men are from Mars, women are from Venus" (Gray, 1992) and that there is "a generation gap in commitment" (Mead, 1970). However, there have been few scholarly studies of sub-cultural differences, particularly in non-Western societies. An exploration of Chinese societies by Huo and Randall (1991) is a notable exception. They found differences in the values of those residing in Beijing, Hong Kong, Taipei, and Wuhan. More recently, Redfern and Crawford (2004) found regional differences in ethics across China, with the southern Chinese scoring significantly higher on idealism than their northern counterparts.

The IS literature has considered the divide between businesspeople and the IS organization (Peppard and Ward, 1999) as well as the gap between IS specialists, who plan and develop the systems, and those who ultimately use IS. However, these studies have been based almost invariably in the U.S. or other Western countries. The mainstream IS literature has largely ignored contexts such as China and also rarely examined sub-cultural differences. Given that IS success depends critically on human factors (Martinsons and Chong, 1999), the neglect of these contextual factors is disappointing.

Remarkably, the most sophisticated and thoughtful research of IS in China over the last five years is contained largely in two journal issues. An issue of the *Communications of the ACM* (Martinsons, 2005) considered the role of IT in transforming Chinese business and society, and the *Information Systems Journal* devoted an entire issue (Davison et al., 2008) to information systems in China. As noted by Davison et al. (2008, p. 336), most of the other published work on IS in China tends "to be rather primitive" and focuses on rather narrow technical aspects instead of organizational, managerial, socio-technical, cultural, or institutional issues.

A few IS studies, such as Khazanchi (1995), have considered sub-cultural differences, most notably between genders. Within the borders of China, Martinsons and Cheung (2001) found that males and females differ in both their perceptions of and attitudes towards IS.

However, as far as we know, the information ethics of managers from different generational groups have yet examined. Despite our previously mentioned anecdotal evidence, we do not really know if there are any cross-generational differences in the information ethics of managers. The part of our study which is reported here was designed to answer this question in the context of China, and to consider the global implications of our findings.

4. Theory

"Generation" is a type of national sub-culture that reflects a country's historical development. The concept has been used commonly in popular discourse for a long time, but only recently has it been studied by academic researchers (Kertzer, 1983). A generation may be defined as "an identifiable group of people who share birth years and experiences as they move through time together" (Kupperschmidt, 2000, p. 66).

At least two theories have been advanced by sociologists to explain generational differences: 1) generational subculture theory, and 2) life-cycle theory. According to generational subculture theory, the sub-culture of a given generation will be shaped by the events that occur during its most

impressionable years (Strauss and Howe, 1991). For example, items that are scarce during one's childhood and adolescence will be valued highly forever (Inglehart, 1997). This theory reflects the view that a generation is not simply a statistical artifact, but rather a sociological group whose members share experiences.

Meanwhile, life-cycle theory suggests that the sub-culture of <u>every</u> generation will evolve through a fairly standard sequence of development (Erikson, 1997). For example, people would be expected to become more conservative and collectively-oriented as they get older. Therefore, the two sociological theories also differ in terms of their implications for moral development and the evolution of information ethics.

Generational sub-cultural theory implies that each generation will have a distinctive (and perhaps unique) pattern of moral development based on the circumstances and events that occurred during *its* most impressionable period of time. In contrast, life-cycle theory implies that each generation will go through a standard sequence of moral development, and that their attitudes on information ethics will evolve in predictable ways during their lives.

The cumulative evidence from previous studies of generational differences in work values provides limited support for both generational subculture theory and life-cycle theory. Smola and Sutton (2002) analyzed a dataset collected from U.S. workers to provide some empirical support for both of these theories. They found that generation X employees espoused less loyalty to their companies, wanted to be promoted more quickly, and were more "me-oriented" than Baby Boomers. However, they also found that work values change as employees mature. For example, employees tended to give work a lower priority in life and placed less value in feeling a sense of pride at work as they got older.

In contrast, a U.S.-based study comparing the work commitment of IT professionals from the Baby Boom generation and Generation X (Davis, Pawlowski and Houston, 2006) did <u>not</u> support either theory. It found no significant differences between the two generations and concluded that, at least for IT professionals, "generational differences in work values may be more of a myth than a 'generation divide'" (Davis et al., 2006, p. 43).

Our literature search uncovered only one study of generational differences that looked at managers in (the People's Republic of) China. Ralston et al. (1999) segmented these managers into generations based on China's political orientation in their youth. The New Generation of Chinese managers (40 years old and less) was found to score significantly higher on Individualism and lower on Confucianism than their Current Generation counterparts (more than 40 years old).

With respect to business ethics in general, Longenecker et al. (1989) surveyed more than 2,000 managerial and professional business personnel in the U.S. and found that ethics differed from one generation to another. Younger respondents (40 years of age or less) were significantly more permissive than their older counterparts (51 years of age or more) in ethically accepting situations such as padding expense accounts and evading taxes.

The issue of how generational differences may affect information ethics has yet to be considered theoretically or empirically. Our study sought to fill this gap in our collective knowledge and to test the two aforementioned theories. We applied the research method described by Martinsons and So (2003) to compare the information ethics of different generational cohorts in the (People's Republic of) China.

The radical social and economic changes taking place in China over the last century and the technological advances introduced in recent decades (Martinsons and Tseng, 1995) suggest that generational differences in information ethics may exist. Events such as the establishment of the People's Republic in 1949, the Cultural Revolution starting in 1966, and the introduction of both the One-Child Policy and Open Door Policy in 1979 (as part of the program of social and economic reforms undertaken by the government of Deng Xiaoping) may be expected to influence the behaviours, attitudes, values, and beliefs of the Chinese people. Remarkably, Li & Yeh (2007) found

that Mao Zedong (who died in 1976) still has a strongly influence on Chinese chief executives.

We adopted a somewhat simplified view of China's recent history in order to divide its current population into three distinct generations. As detailed in Table 3, our classification was based on impressionable events and included the Republican (born before 1950), Revolutionary (born between 1950 and 1970), and Reform (born after 1970) generations. This classification of the Chinese population enabled us to test the two aforementioned theories.

Table 3. Three Generations in China		
Generation	Birth Years	Impressionable Period
Republican	before 1950	After the People's Republic of China was established in 1949, Mao Zedong's Communist Party consolidated its political power. Many communist/socialist principles, such as the nationalization of private enterprise, were implemented in China during the 1950s.
Revolution	1950-1970	Mao Zedong launched the Cultural Revolution in 1966 after the Great Leap Forward (1958-1961) failed. The quest for ideological purity prompted attacks on Confucian and Western influences, and resulted in a decade of civil disorder, radical social experiments, economic disarray, and extreme poverty for many.
Reform	after 1970	Deng Xiaoping emerged as the leader of China shortly after Mao died in 1976. His government introduced an Open Door Policy and a One-Child Policy as part of its economic and social reforms. Those growing up during the Reform era have been described as very individualistic and materialistic. For example, the One-Child Policy is producing "little emperors" – children without siblings – who are pampered and spoiled by their families.

In terms of these three generational cohorts in China, life-cycle theory suggests that there would be a unidirectional change in ethical attitudes toward different scenarios and also a unidirectional change in their reliance on different moral stages of reasoning (Kohlberg,1976) for <u>every</u> generation as it matures. Thus, we would expect the Revolutionary generation to rank between the younger Reform generation and the older Republican generation in its ethical attitudes and moral development.

In contrast, generational subculture theory suggests the existence of differences in the information ethics of different generations based upon what they experienced during their most impressionable years. Most versions of this theory suggest that the childhood or pre-adult years are the most impressionable period of time (Fischer, 1995; Strauss and Howe, 1991). There is no suggestion that those in the middle generation (Revolutionary in this case) should score between those in the other two generations (Republican and Reform in this case), since a profound event experienced by the Revolutionary generation (such as the Cultural Revolution) could have affected this cohort uniquely.

5.   Method

We sought to examine the information ethics of those who make the most influential decisions in the Chinese business world – both those who "manage" their own business and those who are hired to "manage" somebody else's business. These managers make use of information in their own decision making and would be involved in authorizing, championing, and sponsoring projects to plan and develop IS. They would also be both direct and indirect users of the resulting IT applications.

Our sample populations were the different generational cohorts of managers in China. In contrast to the age- and gender-constrained subset of the Chinese management elite that were the basis for Martinsons and So (2003), we sampled a large representative sample of managers from different regions across the People's Republic of China. More than 1,100 individuals participated in our study.

The participants were undertaking a variety of management training and development programs that

were at least partly sponsored by foreign investors or international development agencies. Such training and development programs have been conducted repeatedly across China over the last decade.

We drew our sample from the participants in these programs since 2004. Multiple programs were conducted in each of six cities that represent different regions of China: Beijing (North-central), Chengdu (West), Dalian (Northeast), Guangzhou (South), Shanghai (East), and Xian (Northwest).

The data that we analyzed for the study reported here were collected between September 2004 and January 2008. Between 16 and 38 managers from each program during that time period participated in this study. This represented a response rate of more than 80 percent among those attending the programs. As shown in Table 4, the participants in this study represented a cross-section of China's managers in terms of their age, gender, work location, and type of employer.

Table 4. Profile of the Study Participants					
Region (City)	Number	Age Mean	Age Range	Gender % Female	Employer*
Northeast (Dalian)	176	38.2	23-57	22.1	SOE 31.8 % DPE 9.1 % JV/WOFE 59.1 %
North-central (Beijing)	188	37.3	21-62	25.5	SOE 47.9 % DPE 5.9 % JV/WOFE 46.3 %
Northwest (Xian)	137	39.1	23-59	20.4	SOE 66.4 % DPE 14.5 % JV/WOFE 19.0 %
East (Shanghai)	251	36.8	22-61	35.1	SOE 25.1 % DPE 21.5 % JV/WOFE 53.3 %
West (Chengdu)	153	38.5	25-63	20.9	SOE 58.8 % DPE 8.5 % JV/WOFE 32.7%
South (Guangzhou)	229	37.7	24-63	35.4	SOE 10.9 % DPE 18.8 % JV/WOFEs 70.3 %
Total	1,104	37.8	21-63	28.6	SOE 38.1 % DPE 11.0 % JV/WOFE 50.9 %

* SOE = State-owned enterprise, DPE = Domestic privately-owned enterprise, JV = Joint venture, WOFE = Wholly-owned foreign enterprise

A Chinese language version of the scenarios-based information ethics instrument was administered by a native Chinese researcher and completed on a voluntary basis by the participants near the start of their training and development programs. The participants were told that there were no right or wrong answers – only their personal opinions mattered. They were also told that their anonymity would be maintained.

After the data was collected, the respondents were debriefed about the purpose of the research. Follow-up discussions were conducted with a few of the study participants in each of the six cities in order to get a deeper understanding of the rationales behind some of their responses.

6.   Findings

Analysis of the data collected from over 1,100 Chinese managers revealed major differences in the information ethics of the three generations. We report the means, standard deviations, and F-test results of the ANOVA for the four scenarios in Table 5.

Table 5. Ethical Acceptance of the Four Scenarios by Generation				
Ethical Acceptability of the Scenarios (1 = totally unacceptable, 5 = totally acceptable)				
	Republican (n=167)	Revolutionary (n=439)	Reform (n=488)	One-way ANOVA (F-scores *and Significance*) Multiple Comparisons
Privacy Scenario A Mean SD	2.68 0.80	2.75 0.76	2.47 0.74	16.73 *p<0.01* (Revolutionary, Republican) > Reform
Accuracy Scenario B Mean SD	2.13 0.75	2.36 0.71	2.11 0.72	10.85 *p<0.01* Revolutionary > (Republican, Reform)
Property Scenario C Mean SD	3.72 0.76	4.08 0.80	3.83 0.81	11.36 *p<0.01* Revolutionary > (Reform, Republican)
Access Scenario D Mean SD	2.37 0.69	2.29 0.71	2.31 0.68	1.186 *p>0.05* No significant differences

Duncan multiple comparison tests of group differences revealed that the Reform Generation of Chinese managers was significantly more concerned about invasions of privacy (scenario A) than their older counterparts. Meanwhile, the Revolutionary Generation was much more accepting of the ethics in the accuracy and property scenarios. There were no significant differences between the three generations of Chinese managers in their level of ethical acceptance on the access dilemma.

The factors affecting the ethical judgments on the scenarios can be related to the stages of moral reasoning identified by Kohlberg (1976). Table 6 shows the means, standard deviations, and F-test results of the ANOVA for the factors averaged across the four scenarios.

Table 6. Factors affecting Ethical Judgments by Generation				
Ratings from 1 (no importance) to 5 (exclusive importance) *Average score of the factors related to each Kohlberg stage across the four scenarios*				
	Republican (n=167)	Revolutionary (n=439)	Reform (n=488)	Multiple Comparisons Test of Group Differences
Self-interest Mean SD	3.31 0.85	3.37 0.85	3.68 0.91	Reform > (Revolutionary, Republican)
Social relationships Mean SD	3.62 0.80	3.79 0.81	3.41 0.78	Revolutionary > Republican > Reform
Rules or laws Mean SD	3.22 0.75	3.13 0.80	3.20 0.82	No significant differences
Majority rights Mean SD	2.61 0.75	2.58 0.77	2.79 0.73	Reform > (Republican, Revolutionary)
Equity and fairness Mean SD	2.97 0.78	2.80 0.69	2.84 0.71	Republican > (Reform, Revolutionary)

In evaluating the ethical acceptance of the scenarios, the younger Reform Generation in China considered both self-interest and majority rights (Kohlberg stages 2 and 5) to be comparatively more important than either social relationships or rules and laws (Kohlberg stages 3 and 4). The middle-aged Revolutionary Generation tended to assess the ethical dilemmas more on the basis of social relationships (Kohlberg stage 3) than did either of the other two groups.

Comparative analysis of the data from the six cities across China also found significant regional differences in information ethics. In particular, the responses of managers in western cities such as Xian and Chengdu differed consistently and significantly from those of managers in eastern and southern cities such as Shanghai and Guangzhou. For example, managers in western China espoused more ambivalence on the privacy and property scenarios than their counterparts in eastern and southern China. This may be due to the greater role of state-owned enterprises (SOEs) in the economic landscape of western China.

In addition to regional differences and employer type, the gender, educational attainment, employer size, and management level are potential covariates in this type of study. We found no significant differences related to employer size or management level after controlling for other variables. However, females had significantly different scores than males on three of the ethical dilemmas. The exception was access. Meanwhile, more educated respondents had significantly different scores on the privacy and property dilemmas, but did not differ from their less educated counterparts on the accuracy and access dilemmas.

7.   Interpretation of the Findings

It can be argued that our findings merely reflect the natural and nearly universal tendency of youngsters to rebel against the accepted norms of their elders. After all, it is commonly agreed that parents, teachers, and mentors are responsible for educating their children, students, and protégés, respectively, with a sense of ethics even as the latter groups learn through experience – by (over)indulging in the exuberance of youth.

However, our findings go beyond this natural and universal tendency. The overall dataset provides compelling evidence that China's dynamic environment has produced significant changes in ethical attitudes from one generation to another. For example, the social instability created by the Great Leap Forward and the Cultural Revolution seems to have engendered survivalist values. This has encouraged moral ambivalence or perhaps pragmatism among those in the Revolutionary Generation in their views on ethical issues related to information accuracy and intellectual property.

Meanwhile, the disappearance and re-emergence of the personal property concept is evident from the scores on the relevant scenario C in our study (see Table 2). The Reform and Republican Generation scores are similar, but differ greatly from those of the Revolutionary Generation who grew up when state ownership was prevalent. The findings suggest that the Revolutionary Generation of managers in China values the privacy of "personal" information about people and their associations comparatively less than both their younger and older counterparts. This is a potential source of conflict for those seeking to safeguard the privacy of data in computer-based information systems.

The information ethics of the younger Chinese managers resembled those found in the overall sample of U.S. managers reported by Martinsons and So (2003). In particular, the youngest generation of Chinese managers in our study espoused a strong belief in majority rights (democracy). The enhanced belief in democracy may be attributed to their lack of siblings, their foreign interactions, and their exposure to the Internet.

Deng Xiaoping was the paramount leader of China from the late 1970s until the early 1990s. By opening the door to the outside world, Deng succeeded in his aim of attracting Western technology and investment to China. However, Deng's Open Door Policy also indirectly seeded the core concepts of Western philosophy and ideology, such as democracy and human rights, into the contemporary Chinese culture (Martinsons, 1999).

Nevertheless, the comparatively low acceptance of the property scenario even among the younger Chinese managers suggests that there are significant limits on the potential to enforce Chinese laws more strictly and address property rights violations in a punitive manner. The rule-based philosophy commonly espoused by Western business and political leaders does <u>not</u> appear to be embraced by any of the three generations of Chinese managers. This suggests a limit to the role of rules in a relationship-based society with a dynamic economy and many scarce resources.

8.   Implications of the Findings

The evidence from more than 1,100 managers across China reveals significant generational gaps in information ethics. The concept of "doing the right thing" tends to be understood and interpreted very differently by different generations of Chinese managers. We found Chinese management generation gaps on privacy, accuracy, and property issues.

We also discovered that the fundamental tension between Western moral philosophy and traditional Chinese culture for managers in China extends to issues of information ethics. This tension bridges the third and fourth stages of the model of moral development developed by Kohlberg (1976) and affirms that information ethics are indeed culturally relative, as suggested by Brey (2007) and others. The tension focuses on the roles of relationships versus rules, the dependence on particularistic trust versus systemic trust, and the relative importance of social acceptance versus obeying the law as decision-making criteria.

Our findings here complement several previous studies in China that identified a distinctive form of knowledge management (Burrows et al., 2005), distinctive patterns of IT application (Martinsons and Westwood, 1997), distinctive types of e-commerce (Martinsons, 2008), and distinctive approaches to IT-enabled organizational change (Hempel and Martinsons, 2009; Martinsons et al., 2009).

This study advances our knowledge further by exposing the intra-national tension between traditional China and modern China.   Our identification of sub-cultural differences in information ethics resembles the domestic divide discovered by Martinsons (2004) with the implementation of ERP systems in mainland China. Significantly though, the differences in ERP implementation are at the organizational level and tend to primarily reflect institutional factors. In contrast, the differences in information ethics result from (social) psychology conditions, and particular cultural factors.

Our findings do <u>not</u> support life-cycle theory. The relative scores for the three generations of Chinese managers did <u>not</u> correspond to their respective stages in the human life cycle. Thus, it does <u>not</u> seem that the Republican generation has evolved through a *standard* sequence of development that was subsequently followed by the Revolutionary generation and then the Reform generation.

Instead, we found that the degree of ethical acceptance for specific practices varies significantly from one generation to another. The significant differences between the three generations of Chinese managers (shown in Tables 5 and 6) provide strong empirical support for generational subculture theory.   Remarkably, our findings suggest that the Revolutionary Generation in China has experienced a profound event that has increased its ethical acceptance of both inaccurate information and intellectual property violations. Further study is recommended to understand the specific nature of this event (or events).

This remarkable discovery about the Revolutionary Generation in China has several specific implications for IS. First, those who have the explicit responsibility for managing computer-based information should take extra care to ensure the integrity of their databases and knowledge bases. This will typically include organizational policies, operating procedures and controls, as well as education and training programs to cultivate greater respect for information accuracy.

Second, those using computer-based information should have a healthy skepticism about its accuracy. Such information should be verified using methods such as triangulation before relying upon it for important decisions. This will be an undeniable challenge, given that the overall volume of

information is increasing steadily, and the amount of real-time information is growing very fast.

Third, those developing or using intellectual property need to be aware of how important it is to protect it. They should take appropriate steps to safeguard the property against misappropriation. Fortunately, some of the literature on doing business in China provides useful guidance on this issue.

Meanwhile, the Reform generation is much less accepting of privacy violations than older generations of Chinese managers. They are more conscious of the *right* to privacy and less inclined to compromise the privacy and personal space of others. This generation gap suggests a need for both education as well as personal accountability, and data protection. Education programs should focus on the why, what, and how of data privacy and security. Meanwhile, a combination of policies, procedures, and passwords should be used to protect the privacy of people who contribute data that is subsequently stored in computer-based IS.

The generational gap that we found also has general implications for countries that have experienced political, economic, and/or social shocks. It suggests that intergenerational conflicts on ethical issues are more likely in such contexts. In the workplace, these conflicts on information ethics could cause clashes in teams that have both younger and older members. Although the ability to manage cultural diversity is increasingly recognized as critical for success in a globalizing business world, the existing literature provides little guidance on how to manage when two or more ethical perspectives collide. This is clearly an area that requires research attention and scholarly discussion.

Efforts to resolve disputes among those holding contradictory attitudes and beliefs on ethical issues are unlikely to be productive if each group merely argues that *its* ethical view should prevail. Deeply-embedded beliefs and norms will <u>not</u> be changed by arguments, no matter how rational they may be. Appeals to hyper-norms will also be futile unless everyone involved can be convinced of their legitimacy. For example, arguments about *legality* will be irrelevant to those who believe that relationships are more important than rules.

Those involved in such a dispute about information ethics may find common ground based on notions of human dignity and perhaps dialogical norms. Negotiation and compromise may be inevitable and fruitful in reaching an acceptable middle ground. Incremental steps may help to build trust while avoiding a loss of face. An intergenerational team that is flexible, open to new ideas, and willing to learn from assorted experiences should be better able to accommodate the needs and values of members from different generations.

More generally, we found a fundamental tension between Western moral philosophy and traditional Chinese culture. As shown in Table 7, the prevailing principles of Western philosophy include a basic reliance on rules, deep respect for individual rights, and an emphasis on self-interest and personal freedoms. In contrast, the Chinese have traditionally relied on particularistic relationships rather than systematic rules (see Martinsons, 2008), preferred autocratic or consensus-based decisions, emphasized responsibilities to the family and other collectives, and prioritized the preservation of social stability and harmony.

Table 7. Contrasting Western Philosophy and Traditional Chinese Culture	
Western Philosophy	**Traditional Chinese Culture**
Systematic Rules prevail	Particularistic Relationships prevail
Democracy and Egalitarianism	Autocracy and Hierarchy
Rights of the Individual and Self-interest	Responsibilities to the Family and other Collectives
Personal Freedom and Diversity	Social Stability and Harmony

This fundamental tension is already responsible for many international disputes on issues including those related to information ethics. However, our discovery of this tension among managers within China suggests that it could also compromise social harmony within the country. Specific actions and activities that tend to be socially acceptable to one generation of managers will tend to be

unacceptable to another. Domestic disputes on issues of information ethics may lead to social instability, and in turn impede the transformation of China into a knowledge-based economy.

The generational gap in information ethics is most evident with data privacy. The prevailing view of the Revolutionary generation in China is that efforts to monitor "private" activities and to restrict access to "privileged" information represent "doing the right thing", since they help to maintain social harmony. Actions impairing this harmony may be deemed unethical regardless of other justifications.

In contrast, the prevailing view of the Reform generation is that individual privacy "rights" merit protection, while the freedom to access "public information" is justified on the basis of a "right" to know. Cynics may say that the younger generation of "little emperors" in China expects to have all the information and tools that they need to succeed.

Decision making clearly becomes more difficult when both the needs of society and the rights of individuals must be accommodated.

The data from younger Chinese managers also suggests that differences in ethical perspectives on property issues will continue to persist between them and their counterparts from "foreign" countries like the United States. We expect disputes to endure for decades to come on issues related to the protection of intellectual property. However, the difficulty of resolving these types of ethical issues may be tempered by the rise in China of "home-grown" technologies. When more Chinese develop their own valuable intellectual property rather than merely exploiting the ideas and technologies of others, their own interests will be increasingly aligned with the interests of foreign property owners.

Our discovery of the significant generational gap among Chinese managers also raises profound concerns about the generalizability of cross-cultural studies that rely on a sample of one demographic group (e.g., students, managers) or one sub-culture. To what extent can the results from these high-level, cross-cultural studies be applied to other demographic groups or the general population in (national) society? The question merits serious consideration when relying on cross-cultural research such as the GLOBE study and Hofstede (1980/2001).

We certainly recognize the value of studying inter-cultural differences and their implications for IS phenomena as outlined by Martinsons and Davison (2003; 2007). Important new knowledge has resulted from both studies of IS phenomena in a single culture, such as how Chinese business managers apply IT (Martinsons Westwood, 1997), and comparison of IS activities in two very different cultures, such as how knowledge workers in Japan and the United States use e-mails and faxes (Straub, 1994). Whereas these studies found that cultural factors significantly influence the predisposition toward and selection of IT, we found that similar factors also play a key role in the ethics of managing and using information and its associated technology.

However, our findings suggest that it may also be helpful to look closer at the population of a particular nation, society, or organization in order to better understand each of their ethical attitudes, values, and behavioral norms. Segmenting the population and undertaking sub-cultural research may be especially useful in territories and societies where disruptive events have taken place, such as the end of Communist rule in Eastern Europe, and the end of apartheid in South Africa. Segmentation makes academic research as well as "ethical" prescriptions and teaching plans more complicated. Nevertheless, it will often be worthwhile due to the limitations and even potential dangers of generalizing about an inherently complex and messy world.

There is also a need to go beyond cross-sectional designs in order to more fully research sub-cultural differences, and especially those between generations. A longitudinal panel design that follows the lives of the sampled population over a substantial period of time would be helpful to understand the effects due to both generational membership and aging.

Our study of Chinese managers found strong support for generational subculture theory but did <u>not</u> find support for life-cycle theory. However, the rapid and dramatic economic development and social

change taking place in China (cf. Martinsons, 2005) may have privileged the generational subculture theory of moral development. Remarkably, a U.S.-based study found that leaders from different generations, distinguished as "geeks" (in their 20s and early 30s) and "geezers" (over 70 years of age), had been similarly "galvanized" by at least one intense transformational experience (Bennis and Thomas, 2002). Thus, it would be useful to test the two theories in different social settings, including places that have experienced high degrees of both social and economic stability.

Given the American domination of the mainstream literature in both the IS and management disciplines, the United States is an obvious venue for such theory testing. More broadly, Strauss and Howe (1991) essentially suggested that U.S. history repeats itself in 80-90 year cycles. They hypothesized that each of the four generations within a given cycle has distinct characteristics, and that every fifth generation is similar. Remarkably, a Pew Research Center study released in June 2009 found that "Americans of different ages (are) increasingly at odds over a wide range of social and technological issues … creating the largest generation gap since the tumultuous years of the 1960s" (Yen, 2009). It would be very useful to know the degree to which the current "generation gap" and the four generation hypothesis of Strauss and Howe (1991) apply to information ethics.

9.   Conclusions

We discovered significant differences in the information ethics of the Republican, Revolutionary, and Reform generations in China. The generational differences can be attributed to specific historical events that have taken place within the country since 1949. The Communist takeover that established the People's Republic of China, the Cultural Revolution that began in 1966, and the introduction in 1979 of both the Open Door Policy and the One-Child Policy all appear to have shaped the ethical attitudes of Chinese managers, particularly on issues of data privacy and property rights.

The post-1970 Reform Generation of managers in China espoused greater acceptance of individual privacy and stronger beliefs in both self-interest and majority rights. This suggests that younger Chinese managers are more accepting of the behaviors and values that are preached (if not always practiced) in the United States and other Western countries. However, rather than simply converging to Western norms and values, the cumulative research evidence clearly indicates that managers across China are simultaneously retaining key elements of their cultural heritage.

Chinese managers today commonly find themselves "stretched in different directions" (as one participant phrased it) by the traditions of the Chinese culture and the principles of Western moral philosophy. The respective roles of relationships and rules as well as the comparative importance of social acceptance and obeying the law, as reflected in Kohlberg's third and fourth stages of moral development, are contentious among the Chinese management community amidst China's transformation from a traditional to a modern society.

Our results provide a reality check for those who believe that the economic globalization and the proliferation of IT (with world-wide access to the Internet) will homogenize human values and actions. Expectations that younger generations in Western countries, such as Generation Y and the Google generation or Millennial generation, will follow in the footsteps of their older counterparts, such as Baby Boomers and Generation X, may also be naive and certainly should be researched.

Data privacy, information security, and systems integrity cannot be taken for granted. Our study clearly reveals that the attitudes and values that influence the planning, design, testing, implementation, operation, use, and maintenance of information systems vary from generation to generation among Chinese managers. These types of differences also exist between the genders and between more educated and less educated managers in China.

The modernization of China should not be equated to Westernization. The world's most populous country and emerging economic superpower is likely to remain distinctively Chinese. However, as socio-economic changes continue in China, it will selectively adopt or adapt Western characteristics. Under the influence of globalization, China is likely to become "less different" and "less exotic" from

the perspective of Americans and other Westerners.

This specific type of social evolution or *cross-vergence,* a term pioneered by Ralston et al. (1993), may become more common globally as more information is transferred across cultural boundaries. Further research is advocated to examine this hypothesis of intercultural cross-vergence with respect to information ethics and other IS issues. More generally, we ask: Will the global community of IS researchers continue its relative neglect of IS phenomena in developing economies, and specifically in an emerging superpower? What will be the consequences if IS researchers and educators continue to neglect China?

Even as the cross-cultural transfer of information grows, the cross-generational transfer of information (from parents to children and from teachers to students) continues unabated. The evidence supporting generational subculture theory suggests that ethical values are <u>not</u> transferred directly from one generation to another, but rather adapted and shaped by critical incidents or events.

As our world become more interconnected over time, these events may become increasingly global. Thus, there is an emerging need to understand how different groups of information managers perceive and respond to these global events.

As our world thirsts for more actionable knowledge, there is also a need to better understand the similarities and differences not only between nations and cultures, but also among the sub-cultures within a given country or region. Davis et al. (2006) did not find any differences in work commitment between Baby Boomers and Generation Xers in the United States. However, Longenecker et al. (1989) discovered significant generational differences in business ethics, Strauss & Howe (1991) hypothesize differences across four generations while the Pew Center's recently identified the largest generation gap across America since the 1960s (Yen, 2009). These findings and theory certainly justify further research in the U.S. at sub-cultural levels on topics such as information ethics.

As our world becomes richer in information, the need for more research of information ethics is undeniable. Sub-cultural differences between genders and generations must be better understood, while a focus on various demographic groups in large countries like the United States and China could complement the research on management elites by Martinsons and So.

As our world continues to modernize, and emerging superpowers such as China and India are transformed, we need to track the social changes and understand their implications. These changes include the potential for convergence, divergence or cross-vergence of information ethics. For researchers and practitioners involved with IS and business, it will be even more important to understand how issues of information ethics can be managed more effectively.

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