CULTURAL INFLUENCE ON CREATIVITY:

THE RELATIONSHIP BETWEEN CONFUCIANISM AND CREATIVITY

by

KYUNG HEE KIM

(Under the Direction of Bonnie Cramond)

ABSTRACT

With the passing of the Korean government's gifted education act (Korean Educational Development Institute, 2003), fostering creativity, especially in the mathematics and science areas, has come to the forefront as an important element in the future of Korea's economic prosperity in the global economy.

According to Csikszentmihalyi (1988), creativity is a very complex interaction among a person, a field, and a culture. In keeping with this approach, a look at Asian culture in relation to its impact on creativity is in order. Although people may vary in their native capacity for creativity, it is in the individual's interaction with the macrocosm where creative expression can be found.

In East Asian cultures, including Korea, Confucianism is the core of the cultural framework. Therefore, this study explored the four principles of Confucianism and how they compare to creativity research in order to discover how East Asian culture influences creativity. In order to investigate the relationship between adherence to Confucianism and creativity, 184 Korean educators' scores on a measure of Confucianism (Eastern-Western Perspective Scale) were compared with their scores on a measure of creativity (Torrance Tests of Creative Thinking-Figural).

This study found that some elements of Confucianism, mainly Obedience and Hierarchy, Gender Inequality, Conformity, Suppression of Expression, and Work-Play Dichotomy, present cultural blocks to creativity in general. However, when creativity is broken into the two types of Innovative and Adaptive, Confucianism is found to be more negatively related to the Adaptive type than the Innovative type. This Adaptive type consists of Creative Strengths, Abstractness of Titles, and Elaboration.

INDEX WORDS: Creativity, Gifted, Confucianism, Cross-Cultural Studies, Multicultural, Education, Type of Creativity, Adaptive, Innovative, Creativity Tests, Torrance Tests of Creative Thinking (TTCT)

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CHAPTER 1

INTRODUCTION

Recently, fostering creativity in gifted students has come to the forefront as an important element in the future of Korea's economic prosperity in the global economy. The Korean government passed a gifted education act in April of 2002 that initiated gifted education programs in every elementary, middle, and high school in Korea (Korean Educational Development Institute, 2003). Korean gifted education has focused primarily in the areas of mathematics and science, and the mathematics and science education departments are highly interested in creativity because ingenuity in these fields is tied to fiscal prosperity and competition within the global economy (Korean Educational Development Institute, 2003). Because of this shift in focus, many educators have come to the Torrance Center for Creativity and Talent Development at the University of Georgia in the United States for training in creativity and gifted education. These educators are surprised when they find advocacy for a total change in perspective, which must complement techniques used for unlocking creative capacity in their students.

Creativity involves much more than technique, because it results from a very complex interaction among a person, field, and culture (Csikszentmihalyi, 1998) or, more simply, it is a person-environmental interaction (Mellou, 1996). Thus, a look at East Asian culture in relation to its impact on creativity is in order. Confucianism is embedded in East Asian countries so much that all members of the society absorb the ideology without even knowing what their beliefs are based upon. The principles of Confucian teaching (Chen & Chung, 1994) can be summarized as emphasizing education, family system, hierarchical relationships, and benevolence.

Purpose of the Study

Although common understanding considers creativity to be an inborn ability, most research concludes that this explanation is insufficient (Torff, 1999). Although people may vary in their native capacity for creativity, it is in the individual's interaction with the macrocosm where creative expression can be found. Thus, a focus on enhancement of domain- and creativity- related skills is insufficient to enhance overall creativity if the cultural setting does not also accommodate creative growth and expression. There may be some elements in Confucianism that inhibit creativity. It is my assumption that Confucianism, a major cultural influence in East Asian countries, may present some such blocks. Therefore, this study will explore the four principles of Confucianism and how they compare to creativity research, and to discover how East Asian culture influences creativity. Through making people aware of their belief systems and how they may encourage or inhibit creative thinking, we can empower them to make choices for an environment that nurtures creativity.

Research hypothesis and Questions

The hypothesis of this study is that a person who is raised in a home that adheres to Confucianism will be less creative, showing an inverse relationship between levels of Confucianism and creativity scores. This is operationalized by comparing the degree to which a person ascribes to the principles of Confucianism with that person's scores on a measure of creativity.

Subquestions of the study include the following:

Confucianism:

- With which items do most participants agree?

- Are there any gender differences in Confucian total Scores? If so, which gender is more Confucian?
- Are there gender differences in response patterns? If so, for which items do responses differ the most?
- Is age related to Confucianism? If so, is the relationship different between genders?

Creativity:

- Are there gender differences in Creative responses? If so, among which subscales do responses differ the most?
- Is age related to creativity? If so, is the relationship different by gender?

Relationship between Confucianism and Creativity:

- Is Confucianism inversely related to creativity scores? If so, are there any gender differences in the relationship?
- Is Confucianism negatively related to each subscale of the creativity test? If so, which subscale has a stronger relationship?
- Are there any gender differences in the relationship between Confucianism and each of the subscales of the creativity test?
- What Confucian ideas have the most negative relationship with creativity in general? Are there any gender differences?
- Which Confucian ideas have the most negative relationship with which subscales of Creativity? Are there any gender differences?
- What relationships do responses related to Conformity and Gender Inequality have with Creativity Scores? One hypothesis is that the high value placed on

conformity in Confucian societies is detrimental to creativity because creativity requires an independence of thought that is impossible in a conformist society. Another hypothesis is that gender inequality might have an antagonistic relationship with creativity because a person would close half of themselves, seeing elements related to the other gender as a world for another person. Therefore, scores on items related to gender inequality would have a stronger negative relationship with creativity scores than some other items.

Latent structure:

- How many factors are in the Confucianism scale? If ten factors, do they cluster together in the way I categorized the items when designing the scale?
- How many factors are found in the creativity test in the present study? If two, is it similar to the hypothesized model in my previous studies? If so, is there evidence that the two factors are Adaptive and Innovative? If so, which factor is more related to Confucianism?

CHAPTER 2

LITERATURE REVIEW

Confucianism

Confucius was born in China and lived from 551 until 479 B.C. His teachings are mainly concerned with the practical ethics of daily life without the addition of religious considerations (Chen & Chung, 1994), and Confucius is not considered a Lord or Savior for those who follow his philosophies (Millay & Streeter, 2004). Confucianism is the major cultural influence in Chinese-influenced societies including China, Korea, Japan, Vietnam, Hong Kong, Singapore, and Taiwan (Chaves, 2002; Diriik, 1995; Greer & Lim, 1998; Hahm, 2003; Kim & Park, 2003; Martinsons & Martinsons, 1996). However, we cannot expect Confucianism to have the same status, function, or value among these countries when, even within one country, it is respected more in certain regions than in others (Hahm, 2003). In spite of these differences among countries and regions, the philosophy still unites the East Asian people today. The people have both been significantly influenced by the Confucian cultural tradition and by its core values, which serve as the ethical and moral foundation for business and social interactions, and for people's thinking styles (Chaves, 2002; Diriik, 1995; Greer & Lim, 1998; Hahm, 2003; Kim & Park, 2003; Martinsons & Martinsons, 1996).

"Confucius" is the western name given by Jesuit missionaries to the man referred to as Kong Fuzi, or Master Kong (공자), by his followers (Millay & Streeter, 2004). Confucius was the only son of an aging military officer from a noble family. Because his father had produced only daughters with his first wife, his father married a 16-year old bride and was desperately seeking to have a son with his new wife. His father died when Confucius was 3 years old. His mother was determined to have her son educated (Millay & Streeter, 2004). Confucius was a

diligent student. He was tall, with rather uninviting physical qualities which compelled him to study harder as he chose study over socialization and retreated from friends (Kelen, 1971). Confucius taught and passed on his knowledge and political principles of transformation (Millay & Streeter, 2004). He began teaching in his early twenties (Greer & Lim, 1998). When Confucius was 50 years old, he became a magistrate of a district (Millay & Streeter, 2004). When he was 54 years old, he left his home state and traveled widely in China with his disciples for 13 years, sharing his philosophies and ideas (Greer & Lim, 1998; Millay & Streeter, 2004). After his travels, Confucius devoted the rest of his life to editing classics and teaching disciples until his death at the age of 72.

The Analects of Confucius, the primary texts for Confucianism, comprise 20 books compiled by his disciples, who had learned them by rote, one hundred years after Confucius' death (Greer & Lim, 1998; Millay & Streeter, 2004). These books emphasize moral development through virtues such as benevolence (jen: 인), courtesy(li: 예), and filial piety(Hsiao: 효) throughout the following five types of human relationships(오륜): ruler/servant, parent/child, husband/wife, sibling/sibling, friend/friend (Fan, 2002; Herr, 2003; Hwang, 1999; Hwang, 2001; Millay & Streeter, 2004; Nuyen, 2003). Several centuries after Confucius' death, his teachings became the official creed of the governing elite in China, which had been retained until the late 19th century (Greer & Lim, 1998).

Confucianism is based on authoritarian principles, with social stability based on unequal relationships between people (Martinsons & Martinsons, 1996). Confucian themes (Lau, 1996) that guide Chinese socialization are morality, filial piety, interpersonal harmony, collective decision making, self-fulfillment, good manners, and importance of education. In China, Confucianism has shaped people's thinking and learning styles. Although during the Cultural

Revolution, Confucianism was severely criticized, it is still strong in Chinese society (Chan, 1999; Yao, 1999). Mao Zedong was among those who recognized that there were problems in Confucianism. He, himself, sought to create an alternative communism and, therefore, alternative modernity, which is far from Confucianism (Diriik, 1995). Many mainland Chinese political leaders also criticized Confucianism because they felt that, in order to increase students' brainpower, school systems needed to encourage students to think more flexibly (Martinsons & Martinsons, 1996). Thus, for more than half a century, The Chinese condemned Confucianism because they thought Confucianism was a barrier to Chinese progress. Science and democracy were valuable products of Western modernity (Diriik, 1995), while Confucianism was seen as opposite to democracy and as devaluing science.

In 1980s, Confucianism began to reappear as a central ideological concern (Diriik, 1995; Greer & Lim, 1998). This reversal came with the changes in East Asian countries' economic, social, and political conditions, which was led by Japan and followed by the "Four Mini-Dragons," including, South Korea, Taiwan, Hong Kong, and Singapore (Diriik, 1995). Economic prosperity was ideologically linked with certain elements in Confucianism such as the belief in hard work, education, filial piety, and company loyalty. In Singapore in 1982, a Confucian curriculum for the schools was started. The wealthy societies of Singapore, Taiwan, and Hong Kong provided funding for the purposes of studying Confucianism at a time when the highest institutes could not have funding for conferences on Marxism (Diriik, 1995).

Confucianism in Korea

Confucianism was brought from China to Korea during the Choseon Dynasty (1392-1910). At the end of the dynasty, however, Confucianism was criticized when Koreans lost their national sovereignty to Japanese colonial powers in 1910 (Hahm, 2003). The Koreans blamed

the moribund Confucian formalism and ritualism for the loss. However, Confucianism still retained formal power in Korean society because the former aristocratic classes (yangban: 양반) supported formal organized Confucian institutions. President Pak Chung-hee, who had earlier ridiculed Confucianism for its inconsistency with his modernization plans, decided to support Confucianism when he recognized the political power of the former aristocrats during his election campaign (Cho, 1994, 1995; Hahm, 2003). After him, Presidents Kim Young-sam, Kim Dae-jung, and editorial writers increasingly used Confucian vocabularies when discussing political problems and solutions. Presidents of Korea and the Korean Broadcasting System (KBS), and Samsung, Hyundai, and Daewoo *chaebols* (*재벌:* business conglomerates, or clan businesses) used " loyalty to the state and filial piety (충효)" as propaganda to control the Korean people. *Chaebols* have funded the Filial Piety Award (효도상) and the Confucian revival journal, *Tradition & Modernity* (전통과 현대) which was read by the Korean intelligentsia, especially among middle and high school teachers. The elite sponsored these changes that emphasized certain elements of Confucianism because they realized that they could make money by using Confucianism as a tool that would allow them to better control managers and workers – both politically and economically – as well as to encourage the Korean people to consume in a particular way that benefited these groups (Lee, 1997).

Filial piety was transformed into company loyalty; diligence for self changed into working hard for one's work-place, and domestic paternalism was used to control employees in modern industrial conditions (Kim & Park, 2003). Confucian family ethics have hindered the implementation of a market economy and economic reform due to the precedence of seniority, hierarchy, patriarchal attitudes, and favoritism. While this particular implementation of Confucian ideals may have helped *Chaebols,* it has led to serious challenges as Koreans deal

with changing economics, including the competition inherent in the new global economy (Yao, 1999). The financial crisis of 1997 became an identity crisis about how to deal with capitalist modernity in a properly Confucian style, which renewed interest in Confucianism (Callahan, 1999).

Through these transitions, Korean society appears to be even more Confucian and traditionally Chinese than China itself. There is a general agreement among historians and scholars that Korea is the most Confucian country in the world (Callahan, 1999; Chung, 1994; Hahm, 2003; Yi, 1993). Throughout Korean history, the Confucian legacy was the most striking and dominant cultural form. Confucianism is deeply instilled in the consciousness of the Korean people (Bak, 1983), and the country reinforces this legacy through the educational system (Callahan, 1999; Chung, 1994; Diriik, 1995; Kim & Park, 2003; Yao, 1999; Yi, 1993). Korean people take Confucianism for granted and they do not realize that they have been used by the government and *Chaebols* through selective emphasis of certain virtues from the Confucian heritage. In modern times, the South Korean people have had two enemies, one was Japan and the other was North Korea. The experience of Japanese colonial rule made Korean people determined to match or outdo Japan's economic achievement. South Koreans also wanted prove that their society is more economically advanced than North Korea's. The intensified nationalist sentiment reminded workers why they should work, while the Confucian work ethic advised how they should work (Kim & Park, 2003).

Ironically, the average Korean knows more about what Kant or Marx said than what Confucius taught (Hahm, 2003). However, Confucianism informs the way people interact with one another, and the way they make sense of the world around them. There was one time when Confucianism was raised to the level of consciousness when the book called *Confucius must die*

if the nation is to live(*공자가 죽어야 나라가 산다*: Kim, 1999) was published. The book was highly controversial at the time because it was extremely critical of Korean culture. This book was the first to name Confucianism as the foundation of the current culture, rather than simply assume that all elements are inherent tradition. Most of the time, however, Confucianism remains an unexamined part of Korean culture even though most of the things Korean people do are of Confucian origin (Hahm, 2003).

Confucian influences are striking when we look at court decisions, which highlight the importance of Confucianism in Korean society. Although the court does not mention Confucianism, many court decisions are made through the lens of the Confucian values (Hahm, 2003), which sometimes do not make sense from a Western point of view. For instance, in a 1998 case, the court sided with the tenant in an apartment who failed to pay rent because he was living with and taking care of his elderly father and sick brother (96Da52670; Decision of June 12, 1998). Another law prohibits the practice of serving "unreasonably" large amounts of food and drinks at weddings and other family rites because Confucianism encourages thrift and modesty (98 Hon-Ma 168; Judgment of Oct. 15, 1998, Korean Constitutional Court Reporter). The Korean Civil Code also forbids marriages between anyone who has the same surname and the same ancestral seat (95 Hon-Ga 6-13; Judgment of July 16, 1997, Korean Constitutional Court Reporter). For example, with the surname Kim, although there are more than 280 different ancestral seats, the number of people of a certain ancestral seat Kim, like Kim from *Kimhae*, is almost 4 million out of 47 million Korean people. These 4 million people cannot marry among themselves. These law cases show how much Confucianism has influenced Korean culture. The following section will include ways a person's environment affects creative achievement.

Conditions for Creative Growth: Four P's

What is creativity? What are conditions for creative growth? According to Rhodes (1961), there are four P's of creativity to explain multifaceted construct of creativity, which are Person, Process, Product, and Press. Person includes cognitive abilities, traits, personality; Process describes the mental processes that are operative in creating ideas, which include preparation, incubation, illumination, and Verification; Product includes the ideas expressed in the form of language or craft; Press includes the relation a person and his or her environment (Rhodes, 1961).

Person

There are three types of characteristics that underlie and contribute to the creativeness of a person: cognitive abilities, biographical traits, and personality. In terms of cognitive abilities, creativity and intelligence are separate constructs; that is, a highly intelligent person may or may not be highly creative. The *threshold theory* assumes that above IQ 120 there is little correlation between intelligence and creativity (Barron, 1961; MacKinnon, 1961, 1978a; Walberg, 1988).

In terms of biographical traits, creative people tend to: have a background of creative interests (Davis, 1992; Torrance, 2002); be left-handed (Davis, 1992); be first-born for status quo scientists and political leaders, and classical composers (Clark & Rice, 1982; Schubert, Wagner, & Schubert, 1977; Stewart, 1977; Terry, 1989; Torrance, 2002); and be later-born for revolutionary scientist and political leaders, and creative writers (Bliss, 1970; Stewart, 1977; Sulloway, 1996); be much traveled (Torrance, 2002); have childhood trauma, especially among artistic creators (Berry, 1981; Goertzel, Goertzel, & Goertzel, 1978; Simonton, 1986); have friends younger and older than themselves (Davis, 1992); have mentors, especially many diverse mentors (Simonton, 1984); have somewhat marginalized family background (Berry, 1981; Goertzel, Goertzel, & Goertzel, 1978; Simonton, 1976); own a cat (Schaefer, 1969, 1970); and

have an imaginary childhood playmate (Schaefer, 1969, 1970; Somers & Yawkey, 1984); have less formal education for the most eminent creators (Simonton, 1999).

In terms of personality, creative people tend to: be aware of their own creativeness (Walberg, 1988; Walberg & Herbig, 1991); be original (Tardif & Sternberg, 1988); have a sense of humor, have a childlike approach to a problem (Fabun, 1968; Getzels & Jackson, 1962); artistic interests (Davis & Subkoviak, 1978); be perceptive (Tardif & Sternberg, 1988); be independent (Chambers, 1964; Eiduson, 1962; Rushton, Murray, & Paunonen , 1987); be risk taking (Farley, 1986; Zuckerman, 1975; Davis, Peterson, & Farley, 1973) ; be energetic (Taylor, 1988); be curious (Eiduson, 1962); be attracted to complexity and novelty; be open-minded (Dacey, 1989; Barron, 1988; Tardif & Sternberg, 1988; Walberg, 1988; Walberg & Herbig, 1991); and have needs for privacy or alone time (Storr, 1988).

Process

The creative process originated by Wallas as early as 1926 (Wallas, 1926/ 1970) includes preparation, incubation, illumination, verification. Preparation includes a preliminary analysis of a problem, defining the problem, identifying problem and gathering experience and ideas sufficient for incubation to occur. Incubation is a maturing phase, and is often considered as the most creative part of the entire creative process. The insight occurs when a subconscious connection between ideas fits so well that it is forced to pop out into awareness (Csikszentmihalyi, 1996). These ideas do not come if the person is tired or at his or her working table, but rather when he or she was simply relaxing or taking a break (Wallas, 1926; Ochse, 1990). Illumination is a creation of insights and inspiration phase. During illumination, the promising idea breaks through to conscious awareness, which is the product of incubation, the

"aha." Verification is an execution and evaluation phase, which includes evaluating, refining, and testing the "aha" (Lubart, 2001).

Product

The product of creative activity determines whether the creative efforts are successful or not (Feldhusen & Goh, 1995). MacKinnon (1978b) insisted that creativity research should be started with analyzing creative products because doing so helps us learn differences between creative products and more mundane products. Thus, in the Western view of creativity, creative products focus on tangible forms (Hughes & Drew, 1984). Creativity is seen as the ability to produce work that is novel, original or unexpected, appropriate, useful, or adaptive concerning task constraints (Barron, 1988; Jackson & Messick, 1967; Lubart, 1994, 1999; MacKinnon, 1962; Ochse, 1990; Stein, 1953; Sternberg, 1988; Sternberg & Lubart, 1991, 1995, 1996).

However, the Western and Eastern views of creativity are significantly different. The Eastern view of creativity is not oriented toward tangible products. Instead, Easterners define creativity as a state of personal fulfillment and the expression or understanding of an inner sense of ultimate reality (Chu, 1970; Kuo, 1996; Mathur, 1982). An essential trait of the Eastern view of creativity is its focus on meditation (Sarnoff & Cole, 1983). Therefore, it can be said that creativity is related to the reinterpretation of traditional ideas in the Eastern perspective, while creativity is related to a break with tradition in the Western perspective (Kristeller, 1983).

Although the differences outweigh the similarities between the two views of creativity, the hemispherical differences are not so great from some perspectives, such as the humanistic view and Csikszentmihalyi's (1996) flow. Maslow's (1976) view of creativity involves an individual's striving for self-actualization. Csikszentmihalyi's concept of flow may be described as the feeling of an individual's experience while totally involved in an activity. It is an almost

automatic, effortless, yet highly focused state of consciousness where ego and time are lost and each movement or thought follows naturally from the previous one.

Because there has been recognition of the connection between creativity, invention, and national economic prosperity (Torrance, 1992), and because the eventual goal of gifted education in Korea is future national prosperity, this study will focus on the Western view of creativity which involves a break with tradition rather than a reinterpretation of traditional ideas.

Press

Although a person may have the process and product to be a successful creator, if the person's social and cultural conditions do not value the creativity or reproach it, the person's creative growth cannot flourish. Rogers (1954/1976) emphasized the importance of setting up situations of psychological safety and freedom as preconditions for creativity. Some barriers that may limit conditions for creativity are (Davis, 1992; Torrance, 1963, 2002): well-learned and habitual ways of thinking; perceptual set and mental set; rules and traditions that restrict personal, social, and institutional behavior; emotional blocks including temporary states or more chronic insecurities and fears, especially fear of failure, ridicule, being different, or taking risks; and cultural blocks such as social influence, expectations, and conformity pressures.

Cross-cultural studies can illustrate the ways culture and creativity interact. Such studies (e.g., Lim & Plucker, 2001; Lubart, 1990; Lubart, 1999; Rudowicz & Hui, 1997; Seo & Lee, in press; Sternberg & Lubart, 1999; Yue & Rudowicz, 2002) have shown cultural diversity of the expression of creativity as well as the amount that a culture values such expression. Fielding (1997) explains the importance of cultural influences for creativity. People interpret their world through their cultural artifacts, ideas, and beliefs. Their own creative expressions are developed within the culture. They are encouraged or discouraged to be creative by their culture.

Thus, Suler (1980) considers creativity as a cognitive function that is shaped by the immediate environment and by the larger cultural and historical context in which the individuals live. In other words, creativity is a behavior resulting from a person's characteristics, cognitive abilities, and environment instead of merely by a person's personality or general ability alone (e.g., Amabile, 1983; Mellou, 1996; Torff, 1999).

In a similar vein, Csikszentmihalyi (1988) described creativity as an interaction among a person, a field (discipline, or social organization), and a culture. A person takes information and action from the culture and produces a variation, and if it is deemed valuable by the field, it will be included in the domain, providing a new starting point for the next generation. Therefore, each of the three elements is necessary for creativity to occur.

With this view of cultural influence on creativity, the relationship between creativity and Confucianism will be explored, and the tendency for people from Confucian Eastern societies to be less creative than people from the more individualistic Western societies (e.g., Bond, 1992; Fielding, 1997; Kim & Michael, 1995; Kim & Sergent, 2004; Rudowicz & Ng, 2003; Saeki, Fan, & Van Dusen, 2001) may be explained.

Confucianism and Creativity Research

According to Chen and Chung (1994), the principles of Confucian teaching can be summarized as emphasizing education, family system, hierarchical relationships, and benevolence. These principles can be compared with studies that explored those traits' impact upon creativity. Therefore, relevant creativity literature involves the connections between creativity and the components of Confucianism. The macro-cultural element of Confucianism can then be combined with the smaller components.

Creativity and the First Principle of Confucianism: Emphasis on Education

In Confucianism, the purpose of education is to help people develop ideal personalities (Liu, 1990, cited in Cheng, 1998). A Confucian gentleman is a person who consciously cultivates, practices, and displays his virtues (Zhang, 2000). The holistic and idealistic model of a human being is a well rounded person with a perfect personality who makes a positive contribution to society (Liu, 1990, cited in Cheng, 1998; Yao, 1999). These characteristics should be fostered in the citizenry through the educational system, and uniform virtues with regard to one's role in life are instilled.

The level of support within the home for homework activities (Henderson, Marx, & Kim, 1999; Kim, 1993; Yao & Kierstead, 1984), and efforts of cooperation between teachers and parents to match home and school environments to promote a consistent learning style for children are very high (e.g., Hong & Lee, 1999). Parents place special emphasis on education in early childhood, engage students in learning, and support their schools, (Haynes & Chalker, 1997; Haynes & Chalker, 1998; Henderson, Marx, & Kim, 1999).

Positive influences from Confucianism are that people are highly motivated towards the acquisition of an excellent education, including the strong desire to obtain higher degrees and diplomas (Martinsons & Martinsons, 1996; Sorensen, 1994). Emphasis on education has contributed to the economic growth of Confucian societies (Morris, 1996). Virtues attributed to the economic growth of the East Asian Five Dragons, the so-called East Asian economic miracle (Hahm, 2003), including Hong Kong, Japan, Singapore, Korea, and Taiwan, are skill acquisition, hard work, moderation, patience, perseverance, and education (Chen & Chung, 1994).

Even though enthusiasm for education was conducive for rapid recovery from poverty, it has also brought about negative consequences. These consequences are the extreme competition

for acceptance into prestigious universities that result in many psychological and emotional problems including high levels of stress, anxiety (Sung, Lubin, & Yi, 1992), depression (Crittenden, Fugita, Bae, Lamug, & Lin, 1992), cigarette smoking for relief (Juon, Shin, & Nam, 1995), and sometimes suicide (Sung, Lubin, & Yi, 1992; Wollam, 1992). These unhealthy emotional and psychological conditions prohibit the development of students' creative potential. We cannot overemphasize the importance of a receptive and reinforcing creative atmosphere, namely, psychological safety (Rogers, 1954/1976) or deferred judgment (Von Oech, 1983). Maslow (1976) maintained that freedom, boldness, and self-acceptance lead people to realize their full potential, which seems to link creativity to healthy emotional expression. He concluded that children can experience creativity only when they feel free to play in their thinking, experiments, exploration, and imagination. In addition, competitive situations, restricted-choice situations, a demand for precise performance under time pressure, expectation of reward, (Hennessey, & Amabile, 1987) and evaluation (Amabile 1979; Rogers, 1954/1976; Parnes, & Meadow, 1959) can undermine intrinsic motivation and creativity of performance.

Rote-Learning and Memorization Inhibit Creativity

Confucianism focused on learning in a mechanical way without thought or meaning, which has evolved to the extent that students in such cultures are considered to lack abstract thinking abilities, to over-emphasize concrete examples, and to lack originality and creativity (e.g., Chan, 1999). The society is based on an examination system where it can be said that the goal of schooling is to prepare students to pass examinations (Joo & Grow-Maienza, 1997). Such exclusive reliance on standardized testing for educational assessment forces administrators and teachers to emphasize rote learning and memorization which ultimately limit creativity (Jeon, 2000; Kim, 1999; Kim & Michael, 1995; Lee & Schallert, 1997; Wollam, 1992). Students are

asked to repeat, memorize and remember textbook information for monthly exams, commonly referred to as Exam Hell both in Japan and Korea (e.g., Anderson, 1957; Foster, 1973; Wollam, 1992), leaving no room for creative growth.

The comparative values of memorization and ingenuity can be seen in the value society places on certain vocations. In old Confucian societies, even though the hard work ethic was extremely emphasized, commerce and manual labor were considered to be the meanest sort of work (Chaves, 2002, Kim & Park, 2003); which is a striking contrast to the idealized entrepreneur of the West. Western societies emphasize the development of abstract knowledge, the physical and natural sciences, and technical knowledge and skills. On the other hand, rote learning was idealized by Confucianism which upholds anti-vocational classicism that led to a deprecation of specialization, science, legalistic economic networks, and historical progress (Levenson, 1965). Without learning by doing something or without studying sciences of technology, how can we create original products and ideas?

Ancient Chinese society was known for its advanced inventions, including fireworks and paper. Later, because Confucian society did not value creative production, few people, if any, were encouraged to be creative. According to Confucianism, education is a much more important quality for a leader to have than technical competence or professional expertise. In this sense, education itself is an essential component of the virtues (Chan, 1999). Confucian education valued mostly abstract values from the classics as something to be memorized instead of developed. In addition, the Confucian educational philosophy prioritizes the teaching of ethics. School curriculum still places great importance on subjects related to ethics, offering and emphasizing classes such as ethics, and manners (Chen & Chung, 1994) which, again, are to be memorized instead of explored.

Belief in Hard-Work and a Devaluing of Play

Related to the emphasis of education, East Asian educational philosophy teaches that a strong work ethic and devotion to learning are ultimately more conducive to achievement than an inherently gifted mind. East Asian parents believe that good grades come from hard work, effort, diligence, endurance, perseverance, and persistence (Haynes & Chalker, 1998; Henderson, 1990; Park & Kim, 1999; Taylor, Lichtman, Wasson, VanBrackle, & Ogawa, 1996). East Asian parents emphasize the importance of hard work to academic success, whereas American parents attribute academic success to differences in native ability (e.g., Stevenson & Stigler, 1992). Thus, East Asian schools do not have tracking (Henderson, 1990). In addition, Japanese people believe that the best predictor of later success is Receptive Diligence, but, in America the best predictors are believed to be curiosity and originality (Henderson, Marx, & Kim, 1999). Furthermore, hard work is not an abstract credo, but a practical guide in Japanese and Chinese everyday lives (Stevenson & Stigler, 1992).

Legacies of Confucian tradition __ Confucian work ethic (Chaves, 2002), collectivistic norms and authoritarian forms of organization and management (Kim & Park, 2003) __ can be credited with the economic success of the East Asian countries. Even in the U. S., the work ethic leads to economic success for many Korean American families. However, with economic, occupational, and cultural stressors, the work ethic makes it difficult for many of them to maintain a healthy family life (Kim & Sung, 2000).

From early childhood, the students do not have time to play. In addition, the parents do not consider childhood as a period for play, and they force children into a formal educational structure at extremely young ages. Most children in Confucian cultures begin their education from such a young age, sometimes at only 2 years old, that many of them are able to read and

write before they begin formal schooling (e.g., Chan, 1999). However, the use of worksheets which focus only on exercises to teach letter names, letter sounds, picture-word correspondence, and writing order, without focusing on reading comprehension is widespread (Lee, Park, & Kim, 2000).

There is no room for creativity, or for accepting childhood as a time for play or for having fun (e.g., Rudowicz & Hui, 1997; Fielding, 1997). Some researchers (e.g., Van Hoorn, Nourot, & Alward, 1993) suggest that play can be viewed as the cornerstone of imagination. Play can help a child adapt to a changing modern world through a valuing of curiosity, and the exploration of alternative situations. Bishop and Chace (1971) found that mother's restrictive attitude toward play has a negative impact on children's creativity. Thus, play can ultimately lead a child to creative expression and insights (Richards, 1996).

A work-play dichotomy limits the development and expression of creativity (Fielding, 1983; Torrance, 1963). When we see school as 'work' and free time as 'play,' it is easy to misunderstand creative children in school. In contrast to our notions of a work-play dichotomy, creative children are learning and thinking when they look like they are playing around. They can learn through creativity more effectively than through an authority (Torrance, 1962, 1977a). If they undertake the activity for the enjoyment of engaging in it, they will consider the activity as more like play than like work (Amabile, 1979). Their work is also characterized by humor, playfulness, relative lack of rigidity, and relaxation (Torrance, 1962, 1964). However, the work-play ethic engrained in adults can be projected onto children. Thus, learning to read becomes work, and kicking a football becomes play. Finally, the combined force of a work-play dichotomy and the subjugation of creativity for production-oriented goals distort and curtail creativity to society's loss (Varma, 1993).

According to Vygotskian theory (Vygotsky, 1992), the limited value placed on play can stifle children's creativity. Play facilitates creativity because play gives children the opportunity to discover new properties of objects, and because play stimulates fantasy (Hennessey, & Amabile, 1987). Torrance (1964) was concerned that one of the most influential inhibitors to creativity during early childhood are premature attempts to eliminate fantasy. Fantasy is a way for children to act out impulses and to re-examine new ideas through playful combination with familiar ideas. Creative children are more likely to have parents who took part in fantasy play with them. Wade (1971) found that approval of fantasy behavior by parents has a positive relationship with creativity. However, many parents attempt to prematurely eliminate fantasy from the child's thinking (Torrance, 1962, 1964). Fantasy can also be stifled by a person's fear of becoming the target of ridicule or condemnation (Kirschenbaum, 1989).

Creativity and the Second Principle of Confucianism: Family System Overemphasis on Loyalty and Obedience to the Company and the State

The second principle of Confucianism is the family system. Confucian teachings consider Confucian society itself as a large family, in which the father comes first and the son comes second. The unquestioned obedience of the son to the authority of the father is essential (Fah, 2002). Confucianism is like a social bond that fixes family members in the network of their hierarchical relationships. Furthermore, concepts such as filial piety, obedience, and loyalty practiced in the family are transferred to social organizations in which customs of disciplined subordination and acceptance of authority are cultivated. This sense of the family structure that is applied to social organizations is one of the main reasons for the economic success of the East Asian Five Dragons (Chen & Chung, 1994). For example, Confucian philosophy, which encouraged duty to the nation and to society as a whole, made it easier for South Koreans to

accept the oppression for the sake of economic development of the country (Callahan, 1999; Chung, 1994; Diriik, 1995; Kim & Park, 2003; Yao, 1999; Yi, 1993). With the extension of the emphasis on filial piety to parents into an obligation towards society, Confucianism also encouraged workers to make a lifelong commitment to their jobs (Chung, 1994). Filial piety was transformed into company loyalty; diligence for self changed into working hard for one's work-place, and domestic paternalism was used to control employees in modern industrial conditions (Kim & Park, 2003).

However, given the changing needs of today's organizations and the growing demand for flexibility in dynamic work environments, creative problem solving and decision making are more important than loyalty and obedience (Williams & Yang, 1999). Overemphasis on following rules and traditions at work creates organizational barriers to creative innovation (Van Gundy, 1987). Creative potential is only realized in work situations where employees can influence decision-making and communicate new ideas (Pelz & Andrews, 1966).

Overemphasis on Filial Piety and Dependence

The concept of filial piety is so specific to Confucian culture that no comparable concepts can be found in other cultures (Hwang, 1999). Filial piety, more generally speaking, consanguineous affection, is not only the foundation but also the supreme principle of human life (Liu, 2003), and is the most essential value in East Asian people's mind (Hwang, 1999). According to filial piety, obedience to parents is so important that a son cannot even stop his parents from doing wrong, and also involves the offering of ancestral sacrifice after his parents' death (Fah, 2002). One of the present versions of filial piety is the mutual interdependence of family members, which is also found in Korea. Most parents consider educating and taking care

of their children as their duty, while most children assume the obligation of filial piety, and are willing to repay and take care of their aging parents (Hwang, 1999).

However, overemphasis on filial piety and obedience leads students to avoid their original and creative thinking, and to automatically accept their parents' or elders' conventional thinking, which inhibits creativity. Positive influences on creativity that can be found within a family include room for autonomy (Datta & Parloff, 1967; Domino, 1969); independence by providing the freedom and the psychological safety to explore, experiment, and make decisions (Freeman, 1985; Harrington, Block, & Block, 1987; MacKinnon, 1961; Michel & Dudek, 1991); and where divergence is permitted and risks are accepted within the family (Getzels & Jackson, 1961). In other words, children will be most creative when allowed the freedom to be independent and explore the world and their thoughts, and to make mistakes.

The relationship between autonomy and creativity is further seen with the findings that emotional distance among family members (Drevdahl, 1964; Saxena & Kumar, 1985), open but not overly close family with little clinging or conformity (Weisberg & Springer, 1961), and a non-overly dependent parent-child relationship (Dewing, 1970) have positive relationships with creativity. Mild parental rejection might encourage a slightly rebellious attitude, leading to more independent thinking (Siegelman, 1973), although extreme levels of rebellion can hinder creativity. Encouragement of all family members to do all things together has a negative relationship with children's creativity (Hurlock, 1978). Thus, enjoying experiences separate from the family may help children develop their creativity (Hudson & Stinnett, 1990).

Strict Parenting

East Asian parenting practices are moderately warm, but very restrictive in what is acceptable behavior (e.g., Bond, 1992). In the home, the expectation of respect for the authority

of elders is critical. Children must accept all advice and demands from parents without questioning. Parents are authoritative figures who enforce obedience and submissiveness from their children. Gardner (1989) indicated that Chinese child rearing is like following a chapter in Pavlov, Skinner, or Watson. There is one correct way to do things, and that way is to be shown by an adult. Therefore, children develop a tendency to passively accept knowledge, to view things uncritically, and to avoid exploration. Finally, they become convergent thinkers (Fielding, 1997). East Asian parents sometimes physically punish their children in order to discipline them. The predominance of physical punishment to control children's behavior is one of the most distinguishing factors between Eastern and Western customs of child rearing (Englehart & Hale, 1990).

Parents' communication style towards children is one way--directive, vague, and rigid. This kind of communication hinders children's creativity. (e.g., Chung, 1993). Tegano, Sawyers, and Moran (1989; Runco & Nemiro, 1994) recommended that adults should provide a psychologically safe environment because children need freedom and security in order to explore and be creative. Albert (1994, 1996) found that families that have more creativity are usually more complex, varied, and expressive than other families. Positive influences on creativity that can be found within a family include parents who are less strict, critical, and punitive, but allow greater freedom (Halpin, Payne, & Ellett, 1973); these parents have an ongoing dialogue with their children instead of relying on the use of premature and excessive worksheets and academic material (Isenberg & Jalongo, 1997).

The family structure, including shifting dynamics, situations, and the degree of authoritarianism, also has an impact on creativity. Families that provide parental explanations of family decisions and rules, children a voice in establishing rules (Baldwin, 1949; MacKinnon,

1961), egalitarian child rearing (Dewing & Taft, 1973), and flexibility in guiding children's behavior instead of a reliance on rigid rules (Dacey, 1989) strengthen their children's creativity. In contrast, authoritarian child-rearing attitudes (Datta & Parloff, 1967; Dewing, 1970; Foster, 1968; Gardner & Moran, 1990), parental vigilance (Getzels & Jackson, 1961), and hostile, rigid, and controlling home environments (Halpin, 1973; Papalia & Olds, 1986) have negative relationships with children's creativity. In essence, the family environment can provide a framework and example for children to learn creative problem solving, or it can be a structure that imposes life-long rigidity, depending on the family's process for problem-solving both with individual and familial situations.

Creativity and the Third Principle of Confucianism: Hierarchical Social Relationships

According to Confucius, human relationships should be regulated by the Five Codes of Ethics, which are based on the five basic relationships: ruler/subject, father/son, husband/wife, older brother/younger brother, and between friends. These relationships are assumed to be unequal and complementary (Chen & Chung, 1994; Fan, 2002; Herr, 2003; Hwang, 1999; Hwang, 2001; Millay & Streeter, 2004).

Confucian culture has a history of being a rigid, age-hierarchical society, in which age is always a mark of personal prestige and social authority. A positive aspect of the hierarchical code is the respectful treatment accorded to elders. The older generation can exercise discipline and control over the young (Park, 1993). Confucius taught that age had a direct correlation with wisdom, regardless of other factors. Confucius said that when he was fifteen, he set his heart upon learning. At thirty, he planted his feet firmly upon the ground. At forty, he no longer suffered from perplexities. At fifty, he knew god's will. At sixty, he listened with a calm heart.

At seventy, what he wanted to do aligned with what was right to do (Chaves, 2002; Hwang, 2001).

However, the principle of the hierarchical social relationships has brought about several negative situations in regard to fostering creativity due to formalized inequalities, including those between men and women, and as portrayed in silent classrooms. Silent classrooms prevent students from questioning material and seeking new answers. Within businesses, seniority outweighs merit. Families and schools reinforce the Confucian Patriarchy, encouraging women to be obedient and men to be leaders. A subordinate who generates new ideas and attempts to implement them would be seen as insubordinate and creative behavior would be discouraged.

Inequality between Men and Women

Hierarchy ingrains within people the necessity to limit their aspirations because of a set place in the social structure. The Confucian hierarchy also inflicts upon its subjects, especially women, a suffocating rigidity and a system of inequitable obligations, thus hindering human potential. Contemporary Confucians are embarrassed by the degree to which Confucianism has traditionally oppressed (Li, 2000). Although some contemporary Confucians argue that at least Confucius did not disparage women and Confucianism is nonsexist, historical Confucianism was definitely sexist (Herr, 2003). The Confucian bias against women dictates an inequitable status for women (Fah, 2002), which forces them into a submissive role as a servant to their husbands' family (Park & Kim, 1999; Chung, 1994). According to Confucianism, all women are to be obedient. A woman is expected to be obedient to her parents in childhood, to her husband in marriage, and to her son in old age (Chung, 1994; Johnsrud, 1995). As a result, wife abuse is a common practice in traditionally patriarchal East Asian societies (Bui & Morash, 1999; Gallin, 1992). Kim and Sung (2000) found that the rate of violence by the husbands of the male-

dominant marriages was over four times higher than that of egalitarian marriages even among Korean Americans.

The education of women has long been opposed by Confucianism, although higher educational levels for women are often regarded as a means of increasing their value as potential wives (Chung, 1994). The value systems and virtues of sexual division and patriarchy are reproduced in the overall school curricula. Male dominance emphasizes the development of leadership and skills for male students, but encourages females to be obedient (Chung, 1994). Many feminist scholars in Korea have criticized Confucian patriarchy (Callahan, 1999). In addition to working, a woman must still attend to her domestic duties (Johnsrud, 1995). Thus, gifted females have not achieved to their potential, and academic women's professional careers are limited, because of the expectations of their roles as wives, mothers, and daughters-in-law (Cho, 1997; Johnsrud, 1995).

In the last several decades, a subtle and progressive change in attitudes regarding the role of women in the household has taken place in Korea, leading to a higher level of labor force participation. However, devotion to Confucian principles has led to a lack of consciousness by women who are unaware of an alternate mode of behavior (Kim, 1990).

Rigid Gender Role Expectations

Parents who are open to non-traditional gender roles tend to have children who express greater creativity than those parents who have more rigidly set sex-typed views (Grant, 1973; e.g., Fielding, 1983). Jellen and Urban (1986) found that some environmental conditions such as sexual bias, organizational structure, and socio-cultural stratifications can hinder creative potential. Furthermore, Eriksson (1989) claimed that it is necessary to overcome inhibitions to creativity such as limiting ways of viewing the world, stereotypes, and a judgmental atmosphere.

Androgyny and Creativity

Creative children may diverge from sex role norms. Both sensitivity and independence are essential for creativity (Torrance, 1960, 1962, 1963). The primary creativeness described by Maslow, McPherson, and others requires that individuals be able to accept their softness and femininity as well as intellectual autonomy (Torrance, 1962). Harrington and Anderson (1981) found positive relationships between androgyny and creative self-concept and the number of creative uses for mundane objects. Hittner and Daniels' study (2002) indicated that instrumentality, which includes the traditionally masculine traits of independence and assertiveness, is associated with business venture creativity and cognitive flexibility, and androgyny is associated with creative productivity in literature, theater, and video-photography. Norlander, Erixon, and Archer's study (2000) also showed that androgyny is related to creative performance. The conflict over gender roles' interaction with creativity arises from opposite sex-role ascriptions of the characteristics conducive to creativity: sensitivity is a feminine virtue, while independence is a masculine virtue. Torrance commented on this issue, stating that we need both sensitivity and independence in order to be creative, and noticed that some children sacrifice their creativity in order to maintain their masculinity or their femininity (Torrance, 1960, 1962).

Silent Classrooms

The schooling experience is a continuation of parenting practices for children in Confucian cultures (Fielding, 1997). After children begin their formal school years, the narrowing of their minds intensifies. Compared to children in U.S. classrooms, children in Korean classrooms speak less and are less frequently urged to participate in class activities (French & Song, 1998). A tradition based on a hierarchical society, teacher-centeredness, and

total class instruction (Bathory et al., 1992) commits students to listening without speaking. People are supposed to respect hierarchical relationships between teachers and students so that students accept the information from teachers readily, rarely expressing their opinions or asking questions, which leads to passive and compliant classroom behaviors of the students (Chan, 1999) In addition, neither a teacher nor a student should be made to lose face (Park & Kim, 1999; Yook & Albert, 1998), so teachers are never contradicted, and students are not encouraged to debate among themselves. Students are not supposed to question teachers or challenge their statements, and they are to remain silent (Fielding, 1997). Thus, students expect the teacher to initiate communication, and they speak only when asked to by the teacher. Even if the teacher says something that the student does not understand, it is viewed as inappropriate to interrupt the teacher (Yook & Albert, 1998). This hierarchical rigidity even permeates peer interaction and the potential for collaborative group work. The hierarchy is such that, even among students, children will accept the commands of peer authorities and even peers who do not hold official positions in the school (Kim, 1998). For example, the class president has the authority of the teacher at moments when the teacher is absent from the room.

The Confucian trait of showing respect for teachers is continued in the educational setting through the practice of memorizing and repeating great scholarly works (Fielding, 1997). The material itself was taught by the great teachers of long ago, so memorizing without question is a sign of respect for these ancient authorities. Rote learning is consistent with Confucian values, and is fundamental to the written Chinese language (Martinsons & Martinsons, 1996). Sanctions against questioning and exploration limit the development and expression of creativity (Fielding, 1983).Teachers emphasize working on well-defined problems with clean results and getting good grades that can be compared to others. Therefore, little creativity or innovation is cultivated in

the interactions between teachers and students in Confucian cultures (e.g., Albert, 1996; Martinsons & Martinsons, 1996). This system only breeds conformity, the reproduction of knowledge and images in art, and a lack of independence and creativity (Fielding, 1997). Some researchers (e.g., Auh & Walker, 1999; Brooking, 1995; Martinsons & Martinsons, 1996) suggest violating expectations in teaching in order to enhance creativity by stepping outside of traditional comfort zones. Teachers should provide their own attitudes as safety nets so that their classrooms can become laboratories for experimentation (Brooking, 1995). Furthermore, experimentation helps students' creativity to manifest itself.

Creativity and the Fourth Principle of Confucianism: Benevolence

The last principle of Confucianism is benevolence. Benevolence includes the traits such as self-restraint, self-discipline, filial piety, brotherly love to elders, loyalty, personal duty, and positive interpersonal behaviors among society members (Chen & Chung, 1994; Fan, 2002; Herr, 2003; Hwang, 1999; Hwang, 2001; Millay & Streeter, 2004). The principle of benevolence has also brought about several negative consequences to creativity due to the suppression of emotion, minimization of verbal interaction, and conformity.

Suppression of Emotion

One of the guiding principles for human relationships in Confucianism is self-control of emotional expressions in all human relationships. Affectionate expression to loved ones is considered inappropriate and must be internalized to conform to collectivist ideals (Yi, 1993). This cultural value denies people natural freedoms of expression and individuality, and sentences them to a life of duty and monotony. It is believed that one reason many Korean secondary school students suffer from stress is because of the suppression of emotional expression (Sung, Lubin, & Yi, 1992).

According to psychodynamic approaches, suppression of emotional expression can inhibit creativity. All ego defenses defend through distorting, repressing, and depersonalizing one's experience, and these defense mechanisms resist and corrupt the development and subsequent exercise of creative behavior (MacKinnon, 1978a; Smith & Carlsson, 1990). The earlier in development the defenses function, the more likely they are to block, distort, or inhibit a child's creativity. The expression of feelings and impulses enhance young children's creativity (Lytton, 1971). Positive influences on creativity that can be found within a family include room for providing children the freedom to express both positive and negative feelings (Domino, 1969). Moreover, emotions and creativity not only interact but also emotions themselves can be products of creative change (Averill, 1999, Averill & Nunley, 1992).

Minimization of Verbal Interaction

Confucianism restricts verbal interactions, especially for males. Being a talkative man is considered to be inappropriate. A man's words hold more authority than women's, so restraint is taught to boys because talking too much would diminish the man's power. Boys are taught to say only what they need to say, not what they want to say. The parents discourage their children's exploratory activity such as showing or telling about their surroundings (Bond, 1992). A minimization of verbal interaction accounts for the verbal inhibition of the people in Confucian culture outside their family, and for lower performance in verbal tests of intelligence (e.g., Fielding, 1997). Finally, such a de-emphasis on verbal interaction and learning can depress creativity (Fielding, 1997).

Conformity

Collectivism & conformity

It is harder for Asians to think, feel, and act in a creative manner than for Westerners because Asian society is tightly organized, collectivistic, hierarchical, and face-conscious (Rudowicz & Ng, 2003). Researchers have reported an association between collectivism and social conformity (Crittenden, Fugita, Bae, Lamug, & Lin, 1992; Martinsons & Martinsons, 1996). In Western societies, liberal moral-political values emphasize individuals' rights and self-determination. In contrast, Confucianism in East Asia emphasizes the collective good and harmony, along with self-cultivation and self-regulation (Park & Kim, 1999). In Eastern societies, the welfare of the group is seen as inseparable from that of the individual, while Western societies emphasize the rights of the individual, even at the expense of the group (Averill, Chon, & Hahn, 2001). Confucianism emphasizes conformity and acting predictably within a situational context. Adherence to group interests for the sake of achieving harmony is often justified at the expense of individual interests (Chung, 1994). For instance, slow speakers are perceived as more competent than fast speakers because they are considering the needs of other people, whereas in the U.S., the opposite appraisal results (Lee & Boster, 1992). Students seek to avoid appearing different from others, individuals learn to restrain themselves in order to maintain group harmony, and the fear of making a mistake or embarrassment keeps many students silent. These expectations are related to their propensity for compromise and conflict avoidance (Martinsons & Martinsons, 1996). Thus, Confucian ideals consider the emphasis on individual rights and creativity as secondary (Park & Kim, 1999).

Social pressures such as peer conformity, and avoidance of appearing ‘too different’ or eccentric limit the development and expression of creativity (Fielding, 1997). Conformity and

uniformity conflict with the creativity and initiative that are required in scientific and technical work (e.g., Cummings, 1994). Rudowicz and Hui (1997) indicated that if the social systems are rigid and discourage independence and novelty, new ideas cannot be recognized as creative. Creative people's characteristics are initiative, independence, free play of imagination, joy in absorption, and nonconformity (Vince-Bakonyi, 1969). They are open to new information, are able to synthesize, and are flexible (Goldstein & Blackman, 1978), and are low in dogmatism (Mellou, 1995).

Nonconformity can become a drive in creative children with exceptional mental abilities who seek divergence more than convergence (Whitmore, 1980). Such creative behavior may be interpreted as aggressive or even hostile so that their ideas and questions are rejected (Torrance, 1962). Torrance (1981, 2000a, 2000b) noticed that children's creative behaviors are often punished and discouraged by parents and teachers who perceive creative behavior as inconvenient and difficult to manage. This can lead to the child's unwillingness to be creative, and eventually, to underachievement and rigid non-adaptive responses in the school environment (Seeley, 1984). Evidence of the anti-creativity effects of childhood socialization is found in Torrance's description of the "fourth grade slump" (1967, 1968, 1977, 2002; Torrance & Gupta, 1964; Davis, 1992; Kang, 1989; Marcon, 1995; Nash, 1974; Timmel, 2001; Walker, 1995; Williams, 1976), which is a large drop in creativity at the fourth grade associated with the imposition of social demands, in the United States and other cultures. Axtell (1966) also found a significant decline of curiosity at the fourth grade among gifted students. Torrance and Dauw (1966) found that creative gifted seniors were high in freedom, achievement, recognition, and anxiety orientations, and low in control orientation, which indicates a lack of conformity among creative individuals.

The risks involved in ignoring the needs of creative students are great. If creative needs are not met, creative individuals often become underachievers. Subsequently, they may become acutely withdrawn into a more rewarding fantasy world through day-dreaming, drawing, and reading. In addition, they avoid unpleasant academic tasks and interaction with teacher or peers (Whitmore, 1980).

However, Crutchfield (1955, 1962) noted that both excessive conformity and excessive nonconformity hinder creativity, and Amabile (1989) said that nonconformity for its own sake is insufficient for creativity. The results of Van Hook and Tegano's study (2002) indicated a curvilinear relationship between social conformity and creativity. In other words, conformity or nonconformity for its own sake may in fact hinder creativity, but the ability to move beyond either realm in pursuit of a creative vision will ultimately lead to greater creativity. Within a collectivist society, it is impossible for a person to continuously rebel for the sake of rebellion. Therefore, the focus within Confucian societies must be on those who are trapped by conformity and find their creativity stunted.

Negative conceptions of creativity

Because of conformity, social responsibility is very critical in Confucian cultures. Any degree of narcissistic attitudes, alcohol consumption, and eccentricity are considered as irresponsible. However, these have positive relationships with creativity.

Negative association between narcissism and conformity

The people in Confucian culture have a fear of losing face (dignity, prestige, and self-respect) among peers. This is called self-effacement and is linked to the Confucian value of modest behavior, a highly respected virtue. Thus, in Confucian cultures, people are not supposed to be narcissistic (Martinsons & Martinsons, 1996). However, healthy narcissism is related to

creativity. Solomon (1985) found that creative people have a greater degree of normal narcissism than less creative people.

Negative associations with eccentricity

By the time of Aristotle, the view that creativity is related to madness appeared, and reappeared during the nineteenth and the first half of the twentieth centuries (Albert & Runco, 1999). After a historical review, Neihart (1998) concluded that creativity is associated with madness, especially within the subpopulation of writers, poets, and visual artists. More creative people suffer from certain mental disorders than are found in the general population (Andreasen, 1988; Jamison, 1989; 1993; Richards, 1989), and higher suicide rates appear among prominent creative people than among the norm (Neihart, 1998). Barron (1969) found high MMPI psychopathology scores for eminent creators. There are some researchers who argued that creativity is related to schizophrenia (Barron, 1969; Eysenck, 1983; Getzels & Jackson, 1962; Torrance, 1962).

Negative association between alcohol and conformity

A review of the literature regarding creativity and alcohol (Gustafson, 1991, 1996; Gustafson & Norlander, 1994; Gustafson & Norlander, 1995, 1996; Hajcak, 1976; Ingvar et al., 1995; Koski-Jannes, 1985, Norlander, 1999; Norlander & Gustafson, 1997, 1998; Wendt et al., 1994) suggests that a moderate intake of alcohol can obstruct secondary phases of creativity such as preparation, illumination, and verification, but can facilitate primary phases such as incubation and restitution. Restitution was added to Wallas' (1926) model by Koski-Jannes (1985) as a period between creative cycles that enables a creator to continuously create in a sustainable manner. Alchohol may inhibit creativity at times of active production, but during the moments

when a creator must step away from the work, a moderate amount of alcohol may, in fact, help with overall creativity.

Conception of creativity in terms of conformity

Ironically, consistent with those studies related to creativity research on narcissism, madness, and alcohol, in Confucian cultures there has been a negative notion about the social responsibility of creative persons even without influence of the research above. Lim and Plucker (2001) found that although Korean conceptions of creativity are similar to Western conceptions, Koreans emphasize negative behaviors and personality characteristics such as: creative persons are indifferent to other's opinions; do not pay attention to other's evaluation; make conflicts when working in groups; and are headstrong and rude. These results are consistent with those studies across several Chinese cultural contexts (Chan & Chan, 1999; Rudowicz & Hui, 1997; Rudowicz & Yue, 2000).

Because people in Confucian cultures tend to view creativity as having little relationship with social responsibility, this can be a critical obstacle to creative activity because in this culture the social responsibility of conformity is a substantial value (Lim & Plucker, 2001). The environment works as an external source to suppress people's creative impulses while simultaneously creating internal barriers as well. The societal stigma placed on those who are different extends to people's views about creative behavior and ideas which enforces a self-limitation of creative expression.

CHAPTER 3

METHOD

Sample

One hundred eighty-four Korean educators who were in either a TTCT scoring training or creativity training workshop participated in this study. Originally, 201 people were supposed to be included in this study, but 17 of them did not return either their creativity test or their Confucian measure. Of the 184 participants, 155 had training in Korea and came from three major Korean cities as well as nearby villages, while 29 had creativity training at the Torrance Center for Creativity and Talent Development, at the University of Georgia in Athens, Georgia. The participants in Korea were grouped into three regions such as northwest (43), southwest (53), and southeast (59). As shown in Table 2, participants included 82 males and 102 females with a mean age of 38.67 years (range 22 – 62; SD = 8.52). There were 114 teachers at elementary, middle, and high school levels; 16 college professors; 12 employees of educational institutes; and 42 graduate students who plan to become teachers at different levels of school in Korea.

Instrumentation

Two instruments were used in this study: The Torrance Tests of Creative Thinking-Figural (TTCT) were used to measure the participants' creativity and the Eastern-Western Perspective Scale (EWPS) was used to measure the degree to which they held Confucian ideals.

The Torrance Tests of Creative Thinking-Figural (TTCT - Figural)

The TTCT was developed by Torrance and his associates in 1966. It has been renormed four times: in 1974, 1984, 1990, and in 1998. There are two forms (A and B) of the TTCT-Verbal and two forms (A and B) of the TTCT-Figural. In this study only the TTCT- Figural was used.

Although Torrance is readily identified with his eponymous tests of creativity, assessment of creativity was not a primary goal of Torrance's. Torrance's primary interests lay in discovering and nurturing the qualities that allow individuals to express their creativity fully (Hébert, Cramond, Neumeister, Millar, & Silvian, 2002). The most extensive use of the TTCT-Figural is to identify gifted children. This occurs because most assessments for gifted children focus more on verbal and quantitative ability, and the TTCT-Figural allows another perspective of the student's ability. It can also be less biased for speakers of English as a second language (Torrance, 1977b).

The TTCT displays adequate reliability and validity (Treffinger, 1985; Cooper, 1991) to be used as a test of creativity. According to the TTCT-figural manual of 1998, the reliability estimates of the creative index from KR-21 using 99th percentile scores as the estimates of the number of items ranged between .89 and .94. Samples included 55,600 kindergarten through twelfth grade students from central (3.6%), northeast (11.4), southeast (15.2%), west (57.6%) regions in the United States and other areas, including Canada (2.2%) (Torrance, 1998). According to the TTCT-figural manual of 1990, the inter-rater reliability among the scorers for Scholastic Testing Services was above .90. Samples included 88,355 kindergarten through twelfth grade students from South (41.4%), Northeast (28.5%), North Central (5.1%), and West (5.1%) United States and Canada (4.1%)(Torrance, 1990).

There have been many validity studies of the TTCT. In terms of predictive validity the TTCT scores have been significantly correlated with creative achievement in 9-month, 7-year, 22-year, and 40- year longitudinal studies (Torrance & Wu, 1981; Millar, 2002; Torrance, 2002). The correlation in the 40-year study between the Creative Index and the quantity of creative achievement was .12 ($p > .05$) for males (N = 45) and .29 ($p < .05$) for females (N = 56); for

quality, the relationship was .45 ($p < .01$) for males and .41 ($p < .01$) for females. Torrance and Wu's (1981) 22-year longitudinal study, Yamada and Tam's (1996) reanalysis, and Plucker's (1999) reanalysis of Torrance's data have concluded that the Creative Index was the best predictor for adult creative achievement. Plucker (1999) found that the standardized path coefficient from the TTCT to adult creative achievement was .60, while the standardized path coefficient from IQ score of the Stanford-Binet, Wechsler Intelligence Scale for Children, or California Test of Mental Maturity was .19.

In terms of concurrent validity, Gonzales and Campos (1997) studied the correlation between TTCT and the Spatial Test of Primary Mental Abilities (PMA) and the Gordon Test of Visual Imagery Control. The results indicated that imagery was significantly correlated with various aspects of creative thinking. Among those with IQ>120, the correlation between Originality and PMA was .36 ($p<.001$), and the correlation between Originality and scores on the Gordon Test was .30 ($p<.01$). The correlation between Resistance to Premature Closure and PMA was .33 ($p<.001$), and Resistance to Premature Closure and the Gordon test was .26 ($p<.01$).

The TTCT is more researched and analyzed than any other creativity instruments (Treffinger, 1985; Swartz, 1988). It has been translated into over 35 languages (Millar, 2002). It has become highly recommended in the educational field and is even used in the corporate world. It is the most widely used test of creativity (Davis, 1997), and is the most referenced of all creativity tests (Lissitz & Willhoft, 1985). The standardized administration, scoring procedures and norms, and laudable longitudinal validation (Davis, 1997), as well as the development and evaluation (Davis & Rimm, 1994), have made the TTCT especially useful for identifying gifted and talented students.

The TTCT –Figural A and B consist of three activities: picture construction, picture completion, and repeated figures of lines or circles. Ten minutes are required to complete each activity. In activity one, the subject constructs a picture using a pear or jelly bean shape provided on the page as a stimulus. The stimulus must be an integral part of the picture construction. Activity two requires the subject to use ten incomplete figures to make and to name an object or picture. The last activity is composed of three pages of lines or circles which the subject is to use as a part of his or her picture (Torrance, 1966, 1974, 1990, 1998; Torrance & Ball, 1984).

The TTCT is comprised of five norm-referenced measures of Fluency, Originality, Elaboration, Abstractness of Titles and Resistance to Premature Closure, and thirteen criterion-referenced measures of Creative Strengths. The Creative Strengths are Emotional Expressiveness, Storytelling Articulateness, Movement or Action, Expressiveness of Titles, Synthesis of Incomplete Figures, Synthesis of Lines or Circles, Unusual Visualization, Internal Visualization, Extending or Breaking Boundaries, Humor, Richness of Imagery, Colorfulness of Imagery, and Fantasy. Each subscale is scored as follows (Torrance, 1990, 1998):

Fluency: The number of relevant ideas

Originality: The number of statistically infrequent ideas

Elaboration: The number of ideas added

Abstractness of Titles: The degree beyond labeling

Resistance to Premature Closure: The degree of psychological openness

In order to get a “Creativity Index (CI)”, the standard scores of each of five variables are used according to the TTCT Norms-Technical Manual (Torrance, 1998). Raw scores are converted into standard scores with means of 100 and standard deviations of 20. The standard scores of each subscale can be ranged as follows: Fluency, 40-154; Originality, 40-160;

Elaboration, 40-160; Abstractness of Titles, 40-160; Resistance to Premature Closure, 40-160. The standard scores for each of the five norm-referenced measures are averaged to produce an overall indicator of creative potential. For the frequency of creative strength, a "+"or "+ +" is awarded on the basis of the scoring guide. The number of "+s" is added (range for Creative Strengths: 0 – 26) to the averaged standard scores to yield a Creative Index (Torrance, 1998).

The Eastern- Western Perspective Scale (EWPS)

The Eastern-Western Perspective Scale (EWPS) was used to measure the extent to which a person's views align with Confucian ideals. Because I wanted to compare levels of Confucian ideals with levels of Creativity, I used the Confucianism categories from the literature review to group the content items on the scale where I broke Confucianism down into elements that were then compared to creativity research. This process helped in organizing a theoretical basis for the instrument.

The following 10 subscales reflect the four principals of Confucianism, and the items for each subscale measure the 10 subscales. There is some overlap between the systems reflecting Confucius' weaving of his principles in a re-enforcing manner. Confucius described the country with the family system as an analogy. Because the hierarchy of the family is reflected in the social hierarchy, some of the questions that were initially intended to apply to family systems are related to hierarchical social relationships. I subdivided the Four Principles of Confucianism into ten elements upon which the EWPS was based. Thus, it was hypothesized that the EWPS would have ten factors. However, because some of these elements are interrelated, a distinctive factor structure was uncertain.

The First Principle of Confucianism: Importance of Education (9 items)

- Emphasis on Education: Item 19, Item 24, Item 26, Item 37, Item 40, and Item 48

- Devaluing Play; Work-Play Dichotomy: Item 27, Item 29, and Item 35

The Second Principle of Confucianism: Family System (13 items)

- Filial Piety and Hierarchy: Item 23 and Item 30
- Obedience and Dependence: Item 6, Item 11, Item 42, Item 45, and Item 47
- Obedience and Hierarchy: Item 25, Item 31, Item 32, Item 36, Item 43, and Item 44

The Third Principle of Confucianism: Hierarchical Relationships (11 items)

- Gender Role Inequality: Item 8, Item 9, Item 10, Item 14, Item 15, Item 18, and Item 41
- Gender Role Expectations: Item 4, Item 5, Item 7, and Item 25

The Forth Principle of Confucianism: Benevolence (16 items)

- Suppression of Expression: Item 1, Item 2, Item 12, Item 16, Item 20, and Item 21
- Self-Effacement: Item 3, Item 13, and Item 17
- Conformity: Item 28, Item 33, Item 34, Item 38, Item 39, Item 46, and Item 49

Originally, the EWPS consisted of 70 items as shown in the Appendix C. There were two stages of item analyses. The initial item analysis (Appendix D) was based on the comments from the Instrument Development class of spring, 2004, as well as from suggestions provided by three education professors in Korea who are knowledgeable about Confucianism who provided feedback during June of 2004. The Korean professors administered the second scale to the Korean sample, and mailed those response sheets to me in the U.S. I also looked at the item-total correlation based on a sample of 25 people from the creativity training at the Torrance Center during January, 2004. However, this sample was not big enough to analyze the items so the initial item analysis was based mostly on theoretical grounds. 11 items were removed, and the wordings of some other items were changed after this first item analysis, which resulted in a 59 item scale.

The second item analysis for the second EWPS (Appendix E) was based on the information from item-total score correlations, reliability analyses (alpha if item deleted), frequency distributions for the items along with skewness and kurtosis, a factor analysis and theoretical reasons. The data was collected from 411 Korean people, which included 69 people from the Southeast, 133 from the Northwest, 209 from the Southwest Korea. Sixty of them were high school students, 57 of them were college students, and 92 of them were teachers. Ten items were removed, and the wordings of some other items were changed after this second item analysis (Appendix F), which finally resulted in a 49 item scale. As shown in the example of the EWPS found in the appendix B, each item is answered on a Likert scale of one to five, with one meaning less Confucian and five meaning the most. Thus, it is assumed that higher total scores of the EWPS indicate a more Confucian perspective and lower total scores of the EWPS indicate a less Confucian perspective. The reliability coefficient alpha of this scale was .917.

As shown in Table 1, 10 factors were extracted after an Exploratory Factor Analysis was conducted on the EWPS scores. However, perhaps because Confucian ideas are interrelated within Confucian teachings, most factors were double-loaded, and the factor structure was different from what I originally categorized. Factor 1 is comprised of Gender Role Expectations and Inequality. Factor 2 consists of Filial Piety and Hierarchy, and Conformity. Factor 3 is based in Suppression of Expression and Self-Effacement. Factor 4 is based on Conformity. Factor 5 is Obedience and Hierarchy. Factor 6 is about Obedience and Dependence, and Conformity. Factor 7 is associated with Work-Play Dichotomy. Factor 8 is related to Emphasis on Education. Factor 9 relates to Suppression of Expression. Factor 10 is about Obedience and Hierarchy. Because of the double loadings, I could not use the subscales of the EWPS, so I used the total scores and individual items for the analysis.

Procedures

First, on July 12, 2004, the TTCT and the EWPS were administered to 62 (53 of the responses were returned) educators from Jeonju city in southwest Korea and villages near the Jeonju city. Second, on July 16, 2004, the TTCT and the EWPS were administered to 44 (43 of the responses were returned) educators from Seoul city (capital city), in northwest Korea and villages near the Seoul city. Third, on July 22, 2004, the TTCT and the EWPS were administered to 66 (59 of the responses were returned) educators from Daegu city and villages near the Daegu city, in southeast Korea. Finally, 29 teachers who had participated in a creativity training at the Torrance Center in January, 2004 had answered the TTCT and the EWPS, but the EWPS was a 70 item scale at that time. Thus, these teachers were asked to answer the new 49-item EWPS in August, 2004. Thus, the total sample size was 184. Eighty-four of the educators were tested on the TTCT Figural-A, while 100 used the TTCT Figural-B. All of the Jeonju group and the creativity training group at the Torrance Center took the TTCT Figural-B, while all of the Daegu group took TTCT Figural-A. This grouping was because the two forms A and B are considered to be parallel forms, and some of the Daegu group had previously taken the TTCT Figural-B. Among the Seoul group, 23 people took the TTCT Figural-A, while 20 people took the TTCT Figural-B. All of the educators were asked to participate in the TTCT activity for 30 minutes and complete the EWPS. TTCTs and EWPSs were scored and data was entered by me in August, 2004.

Data analysis

Confucianism: The EWPS Scores

Prior to correlation coefficient analyses, means and *SDs* for the EWPS total scores were examined. Means along with frequency distributions for each item of the EWPS were reviewed to examine which items have common agreement among participants.

An independent samples *t*-test between means of the male and female subjects of the EWPS total scores was conducted in order to see if there are any gender differences in Confucian total Scores and, if so, which gender is more Confucian. Multiple independent samples *t*-tests between means of the male and female subjects of the EWPS items were conducted to examine if there are gender differences in response patterns and, if so, for which items responses differ the most.

The correlation between the EWPS total score and age was examined to find the relationship between age and Confucianism. Correlations were also examined between the EWPS and males and females separately to examine whether the relationship is different between genders.

Creativity: The TTCT Scores

The mean and standard deviation for the Creativity Index (TTCT total score) were examined. An independent samples *t*-test between means of the male and female subjects of the Creativity Index was conducted in order to see whether there are gender differences in creative responses. Multiple independent samples *t*-tests between means of the male and female subjects of each of the subscale of the TTCT were conducted to examine on which subscales responses differ the most.

The correlation between the Creativity Index and age was examined to explore whether age related to creativity. Correlations between the Creativity Index and age were examined between the male and female groups separately to examine whether the relationship is different between genders.

Relationship between Confucianism and Creativity

The correlation between the EWPS total score and the Creativity Index was studied to answer the main research questions of whether they have negative relationship, and if so, whether it is significant. Correlations between the EWPS total score and the Creativity Index were examined for the male and female groups separately to examine whether there are any gender differences in the relationships.

Correlations between the EWPS total score and the TTCT subscale scores were also studied in order to see which TTCT subscale is related to Confucianism the most. Correlations between the EWPS total score and the TTCT subscale scores were examined for the male and female groups separately to examine whether there are any gender differences in the relationship between Confucianism and each of the subscales of the TTCT.

Correlations between each item of the EWPS and the Creativity Index and the subscale scores of the TTCT were examined to look for strong relationships between the EWPS items and the TTCT subscales and the Creativity Index. Then, the EWPS items that had strong negative correlations with TTCT subscale scores were examined to find whether they were related to Conformity and Gender Inequality to answer the research question. Correlations between each item of the EWPS and the Creativity Index and the subscale scores of the TTCT were examined for the male and female groups separately to

examine whether there are any gender differences in the relationship between the EWPS items and the TTCT subscales and the Creativity Index.

Latent structure

An exploratory factor analysis was conducted on the EWPS to examine if the ten-factor model fits for the Confucianism scale and if they cluster together in the way I categorized when designing the scale.

An exploratory factor analysis was conducted on the TTCT in order to examine how many factors are found in the creativity test in the present study and, if two, whether they were similar to the hypothesized model (Innovative and Adaptive factors), and which factor was more related to Confucianism.

For both of the exploratory factor analyses, Maximum Likelihood was used as an extraction method. Oblimin was used as a rotation method because high intercorrelations among factors were assumed.

CHAPTER 4

RESULTS

Confucianism: The EWPS Scores

Descriptive Statistics for the Items of the EWPS are reported in Table 3. Descriptive Statistics for the EWPS Total Scores are reported in Table 4. For the EWPS Total Score of the total sample, the mean was 143.973, and the standard deviation was 21.791. According to the means along with frequency distributions for each item, most subjects agreed to Item 3 [(The better you are, the more self-effacing you should be) M = 3.978, SD = .899: 76.1% of them agreed or strongly agreed], Item 11 [(When my children want to get married to someone, they should have my permission) M = 3.859, SD = .831: 79.3% of them agreed or strongly agreed], Item 19 [(I will financially support my children's college education) M = 3.859, SD = .876: : 74.5% of them agreed or strongly agreed], and Item 23 [(Children should always obey their parents) M = 3.870, SD = .839: 78.8% of them agreed or strongly agreed].

Gender Differences in Confucianism

The average of the EWPS total scores for the male subjects was higher (M = 154.793, SD = 19.437) than for the female subjects (M = 135.275, SD = 19.646) as shown in Table 4. To examine gender differences in Confucianism and which items were contributing to the differences, independent samples *t*-tests were computed for EWPS total scores and each item of the EWPS. Multiple *t*-tests increased the risk of Type I errors, so two different procedures were followed. In one procedure, an alpha level was set at .01 for each individual test, and effect sizes are reported based on this alpha level. In the other, the level of significance was adjusted using the Bonferroni procedure.

First, an alpha level was set at .01 instead of .05 for each individual test. I did not adjust the critical p-value because familywise alpha rate corrections including the Bonferroni correction are very conservative, particularly when the dependent variables are correlated (O'Brien, 1984; Toothaker, 1993). This was considered in the present study given that most of the correlations among the items of the EWPS and those among the subscales of the TTCT are statistically significant at the alpha level of .01. Because there is no research published on Confucianism, especially on the relationship between Confucianism and creativity, I wanted to report any probable associations between Confucianism and creativity for future studies. For this reason, in addition to adjusting the level of significance using the Bonferroni procedure, an alpha level was set at .01 for each individual test, with a corresponding effect size. Thus, each significant finding at a critical p-value of .01 with the magnitude of the corresponding effect size r { $= [t^2 / (t^2 + df)]^{1/2}$, Rosenthal & Rosnow, 1991} was reported. The reason for reporting r as effect sizes was that the nature of the present study was correlational. According to Cohen (1988), r's <.30 are small effects; r's between .30 and .50 are medium effects; and r's > .50 are large effects.

The result of an independent samples *t*-test for the EWPS total scores indicated that the mean difference between male and female subjects was significant ($\Delta M = 19.518$; $t\ (182) = 6.730$, $p = .001$; effect size $r = .446$, medium effect). This difference was significant after adjusting the level of significance for multiple comparisons using the Bonferroni procedure.

Among the 25 items that had significant mean differences (alpha level at .01) between males and females, the most distinct ($\Delta M > .800$) gender divide centered around Item 7 [(It is inappropriate to hug my spouse in front of my parents ($\Delta M = .836$; $t\ (182) = 5.532$, $p = .001$; effect size $r = .379$, medium effect], Item 8 [(A man who talks to his wife about his life outside the home is not considered a real man) $\Delta M = .866$; $t\ (182) = 6.198$, $p = .001$; effect size $r = .418$,

medium effect], Item 14 [(An obedient woman is better than a willful woman) $\Delta M = 1.088$; t (184) = 8.023, $p = .001$; effect size $r = .511$, large effect], and Item 22 [(Kitchen work is a woman's job) $\Delta M = .800$; t (184) = 5.826, $p = .001$; effect size $r = .397$, medium effect]. These four items were also significant after adjusting the level of significance for multiple comparisons using the Bonferroni procedure.

The correlation coefficient between the total score of the EWPS and age was significant ($r = .382$, $p < .001$). The relationship between the total scores of the EWPS and age was examined for males and females. The correlation between EWPS total scores and age for males ($r = .426$, $p < .001$) was significant, but for females was not ($r = .148$, $p > .05$), in which the males' average age was 42.13 ($SD = 7.40$), whereas the females' was 35.89 ($SD = 8.37$). The correlations between EWPS total scores and age for the total group, and for the male group were also significant after adjusting the level of significance using the Bonferroni procedure.

Creativity: The TTCT Scores

Descriptive Statistics for the Creativity Index of the TTCT are reported in Table 5. The mean score was 125.011, and the SD was 17.913. In contrast with the EWPS Total Scores, the average of the scores of the Creativity Index of the TTCT for the female subjects was higher ($M = 128.451$, $SD = 16.621$) than for the male subjects ($M = 120.732$, $SD = 18.629$). The result of an independent samples t-test for the Creativity Index indicated that the mean difference between male and female subjects was significant ($\Delta M = 7.719$; t (182) = 2.967, $p = .003$; effect size $r = .215$, small effect). However, this difference was not significant after adjusting the level of significance using the Bonferroni procedure. Descriptive Statistics for the Scores of the six Subscales of the TTCT are reported in Table 6. The result of an independent samples t-tests for the subscales of the TTCT indicated that female subjects had significantly higher means than

male subjects for Elaboration (t (182) = 3.206, p = .002; effect size r = .231, small effect), Abstractness of Titles (t (182) = 2.726, p = .007; effect size r = .198, small effect), and Creative Strengths (t (182) = 5.094, p < .001; effect size r = .353, medium effect). Females also had higher means than males for Originality (t (182) = .154, p = .878) and Resistance to Premature Closure (t (182) = .616, p = .539), but they were not significant. Fluency (t (182) = .947, p = .345) was the only subscale that had higher means for males than females, but it was not significant. However, after adjusting the level of significance using the Bonferroni procedure, only the average of the scores of Creative Strengths for the female subjects was significantly higher than for the male subjects.

The correlation between the Creativity Index and age was negative, but not significant (r = -.167, p > .05). As shown in Table 7, for males, the correlation was -.011 (p > .05), for females, it was -.165 (p > .05).

Confucianism and Creativity

As the hypothesis for this study predicted, the EWPS scores were inversely related to creativity scores. As shown in Table 7, the correlation coefficient between the total score of the EWPS and the Creativity Index of the TTCT was significant and the relationship was negative (r = -.439, p < .001). The relationship between the total scores of the EWPS and the Creativity Index was examined for the male and female samples separately. The correlation between the EWPS total scores and the Creativity Index of the TTCT for males (r = -.442, p < .001) was slightly higher than for females (r = -.351, p < .001). The correlations between the EWPS total scores and the Creative Index for the total group, and for both the male and female groups were also significant after adjusting the level of significance using the Bonferroni procedure.

EWPS Scores and Creativity Subscales

The correlation coefficients between the total scores of the EWPS and TTCT subscales are reported in Table 8. All of the six subscales of the TTCT had negative relationships with the total scores of the EWPS. Among the six subscales, Originality (r = -.212, p = .002), Abstractness of Titles (r = -.276, p < .001), Elaboration (r = -.357, p < .001), and Creative Strengths (r = -.650, p < .001) had significant correlation coefficients. However, after adjusting the level of significance using the Bonferroni procedure, Originality did not have a significant correlation with the total scores of the EWPS.

The relationships between the EWPS total scores and the TTCT six subscale scores were examined for the male and female samples separately. The correlation between the total scores of EWPS and Originality for males was higher (r = -.282, p = .005) than for females (r = -.187, p > .05.). In addition, the correlation between the total scores of EWPS and Abstractness of the Titles for males was also higher (r = -.399, p < .001) than for females (r = -.057, p > .05). However, after adjusting the level of significance using the Bonferroni procedure, only the correlation between the EWPS total scores and Abstractness of Titles for males was significantly higher than that for females.

Items that had the strongest correlations (r > .300) with the Creativity Index of the TTCT are reported in Table 9. Item 9 [(A man should be the head of the household) r = -.332, p < .001 for total; r = -.332, p = .001 for males; r = -.245, p = .007 for females] and Item 28 [(It is better to be wary of eccentric people) r = -.346, p < .001 for total; r = -.301, p = .003 for males; r = -.314, p = .001 for females] had the strongest relationships with the Creativity Index among the 49 items. Item 12 [(It should not be easy to fall in love) r = -.319, p < .001 for total; r = -.376, p < .001 for males; r = -.225, p = .012 for females], Item 14 [(An obedient woman is better than a

willful woman.) $r = -.304$, $p < .001$ for total; $r = -.250$, $p = .012$ for males; $r = -.210$, $p = .017$ for females], and Item 32 [(People with greater seniority should have a much stronger voice in a company than those with less seniority) $r = -.303$, $p < .001$ for total; $r = -.366$, $p < .001$ for males; $r = -.214$, $p = .016$ for females] also had the strongest relationships with the Creativity Index among the 49 items. The correlations between the Creativity Index and the five EWPS items above were significant after adjusting the level of significance using the Bonferroni procedure. However, Item 28 was significantly correlated with the Creativity Index for females after the Bonferroni procedure, whereas Item 9, Item 12, and Item 32 were significantly correlated with the Creativity Index for males. There was a significant correlation for the total group between Item 14 and the Creativity Index, but not for males or females separately.

The item that had the strongest correlation ($r > .250$) with Originality is reported in Table 10. Item 12 [(It should not be easy to fall in love) $r = -.255$, $p < .001$ for total; $r = -.332$, $p < .001$ for males; $r = -.184$, $p = .032$ for females] had the strongest negative relationship with Originality among the 49 items. However, for females, the relationship was not significant after the Bonferroni correction.

Items that had the strongest correlations ($r > .300$) with Elaboration are reported in Table 11. Item 28 [(It is better to be wary of eccentric people) $r = -.303$, $p < .001$ for total; $r = -.200$, $p = .036$ for males; $r = -.322$, $p < .001$ for females] and Item 44 ($r = -.334$, $p < .01$) had the strongest negative relationships with Elaboration. However, Item 28 was significantly correlated with the Elaboration for females after the Bonferroni procedure, whereas Item 44 was significantly correlated with the Elaboration for males.

Items that had the strongest correlations ($r > .250$) with Abstractness of Titles are found in Table 12. Item 9 [(A man should be the head of the household) $r = -.252$, $p < .001$ for total; r

= -.306, p = .003 for males; r = -.119, p = .117 for females] and Item 45 [(It is good to stand out for your individual qualities) r = -.259, $p < .001$ for total; r = -.355, $p < .001$ for males; r = -.145, p = .073 for females] had the strongest negative relationships with Abstractness of Titles. The correlations between the Abstractness of Titles and Item 9 and Item 45 were significant after adjusting the level of significance using the Bonferroni procedure. However, only Item 45 was significantly correlated with Abstractness of Titles for males, and there was no significant correlation for the female samples after the Bonferroni procedure.

Items that had the strongest correlations ($r > .380$) with Creative Strengths are found in Table 11, each of which had a significant relationship with Creative Strengths (for the total, male, and female groups) after the Bonferroni procedure except for Item 14 for the female group. Twenty-two items (Item 7, Item 8, Item 9, Item 12, Item 14, Item 15, Item 18, Item 21, Item 25, Item 27, Item 28, Item 29, Item 32, Item 33, Item 34, Item 36, Item 37, Item 41, Item 43, Item 44, Item 46, and Item 49) were significantly related to Creative Strengths after the Bonferroni procedure.

The Latent Structure of the TTCT

Two factors were extracted after an Exploratory Factor Analysis was conducted on the TTCT scores. Factor loadings for the TTCT scores are found in Table 14. Creative Strengths, Elaboration, and Abstractness of Titles loaded on Factor 1. Resistance to Premature Closure double-loaded on Factors 1 and 2. Fluency and Originality loaded on Factor 2.

Chapter 5

DISCUSSION

Confucianism: The EWPS Scores

According to the analysis on the means of each item of the EWPS, most subjects agreed with Item 3 (The better you are, the more self-effacing you should be), Item 11 (When my children want to get married to someone, they should have my permission), Item 19 (I will financially support my children's college education), and Item 23 (Children should always obey their parents). The response to these items reflects how strongly Confucianism is embedded in Korean society, so that most Korean respondents agree with these ideals. Other than Item 23, which would also likely get agreement among Americans, the other items have strong agreement among Koreans, but would probably not be found as uniformly accepted among an American sample according to my previous study on the Americans (Kim & Sergent, 2004).

Gender Differences in Confucianism

The result of the Independent Samples T-Test between male and female subjects for the EWPS total scores indicated that Korean male educators show more Confucian ideas than female educators, which can be explained in the context of a society founded on the male-dominant aspects of Confucianism. It makes sense that men, who benefit from gender role elements of Confucianism, would favor such beliefs.

Male and female subjects had significantly different opinions on 24 items of the total of 49 items, especially on Item 7 (It is inappropriate to hug my spouse in front of my parents), Item 8 (A man who talks to his wife about his life outside the home is not considered a real man), and Item 22 (Kitchen work is a woman's job). Men tended to range between undecided to agree, while the majority of women consistently disagreed with these items.

Item 14 (An obedient woman is better than a willful woman) showed an even stronger gender divide, with a consensus measured among all women voicing disagreement with this item. These responses further show the disparity among men and women found in Confucian societies.

The differences in responses to Item 7 (It is inappropriate to hug my spouse in front of my parents) relate to both emotional distance and roles within the family, as well as different expectations of behavior. Men are supposed to show less emotion than women, so they are likely to answer with a lower tolerance for emotional displays. Life in front of the husband's parents is much more formal, with the wife entering the family as a member with a specific place in the hierarchy. In such a setting, intimacy shown between the husband and wife may be seen as threatening to the relationship between the husband and his parents. Furthermore, emotional displays and showing affection is considered a sign of immaturity. Because men are more important, women are not expected to be as mature as men, so there is more tolerance for a woman's display of affection and emotion.

Item 8 (A man who talks to his wife about his life outside the home is not considered a real man) relates to gender roles and the social hierarchy. If a husband confides in his wife, he is exposing her to the 'man's world,' of which she should have no part. Other men may even question a wife's influence on her husband's business dealings. It also lowers the man within the hierarchy if he talks with his wife too much as an equal. Women may disagree because they are close to their husbands and want to know what is going on in their husbands' lives.

Item 22 (Kitchen work is a woman's job) was similarly related to gender roles and social hierarchy. Anyone who is doing work would naturally want someone to share the labor with her, while a man who has not had to do a certain task would wish to see it as another's work.

Item 14 (An obedient woman is better than a willful woman) showed a greater unity among women, and a greater divide between men and women than other responses. It is very convenient for men to agree with such a question and never have their opinions questioned by their wives. Women, on the other hand, would know the frustration and injustice of remaining voiceless.

When considering age, older people tend to be more Confucian in their thinking than younger people. In looking at men and women separately, however, older men tend to be more Confucian than younger men, but the same pattern was not found among women.

Creativity: The TTCT Scores

In contrast to the EWPS Total Scores, the average of the scores of the Creativity Index of the TTCT for female subjects was higher than the average for the male subjects. The result of an independent samples test for the Creativity Index indicated that Korean female educators showed greater creativity levels than did male educators before the Bonferroni adjustment. Previous research on gender differences in creativity scores was inconclusive. Jaquish and Ripple (1980), Richardson (1986), Kim and Michael (1995), and Gupta (1981) found gender differences, while Runco (1991), Ogawa, Kuehn-Ebert, and De Vito (1991), and Saeki et al. (2001) found no differences. Even among those who found gender differences, some reported higher scores for males, others reported higher scores for females. This is consistent with other findings within this study. If Confucianism is detrimental to creativity, as was proposed in this study, then it would make sense that men, who show greater than average Confucianism levels, would also display lower levels of creative expression. However, after the Bonferroni adjustment, the difference was not significant.

Furthermore, women in this study showed greater levels of creativity in Elaboration, Abstractness of Titles, and Creative Strengths. Torrance (1974) also found that women tended to score higher in the area of Elaboration, but at that time he had not created the other two subscales. Some of these differences may also be found in the gender disparities in Confucian society. Men are not challenged as much by the boundaries of Confucian society and, therefore, are not forced to think beyond existing expectations. Women, on the other hand, are continually confronted with a system that chafes and confronts their ability to instantly accept such rules.

When considering age, older people tend to be more Confucian in their thinking than younger people as described before. However, although the relationship between age and Creativity Index was negative, it was not a significant relationship. In looking at men and women separately, women had a slightly stronger negative relationship than men, but none of the relationships were significant. Creativity is neither enhanced nor diminished with age, nor is that relationship affected by gender.

Confucianism and Creativity

I am aware of no previously published studies on specific relationships between Confucianism and creativity. However, the findings of this study are consistent with its hypothesis as well as with the literature review on each subscale of Confucianism related to creativity research and my other research (Kim & Sergent, 2004). Higher levels of Confucianism consistently relate to lower measures of creativity, both in general and within the various subscales. The negative relationship between Confucianism and creativity among men was slightly higher than that for women. According to other findings within this study, men tend to be more Confucian than women. Within the group of male participants, however, it is unusual for a person to be less Confucian. Those who diverge from the majority may be the same people

who are more creative. The subscales that showed the strongest negative relationships with Confucianism were Elaboration, Abstractness of Titles, and Creative Strengths. Originality also had a significantly negative relationship at the alpha level of .01, but after the Bonferroni adjustment, it was not significant. In addition, because the American Originality Lists were used, the result may not be valid even though it was statistically significant. A further discussion about this can be found in the limitation section. Among the six subscales, Fluency and Resistance to Premature Closure did not have significant relationships with the EWPS, which is consistent with previous literature that indicated that Fluency (Ogawa, Kuehn-Ebert, & DeVito, 1991, cited in Saeki et al., 2001; Saeki et al., 2001) and Resistance to Premature Closure (Saeki et al., 2001) were not affected by the cultural differences between America and Japan.

Confucianism and Elaboration

The negative correlation between Confucianism and Elaboration can be seen particularly well in the Confucian definition of learning, where students must memorize a continuous stream of facts without applying any thought to the content. In contrast to this mindset, elaboration involves thinking beyond the basics and adding or connecting more ideas to pre-existing beliefs.

Confucianism and Abstractness of Titles

The relationship to Abstractness of Titles is also illustrated in this manner, where all of Confucius' teaching is factually-based or concrete. Even learning based on abstract concepts of great philosophers is broken down into concrete pieces that are easily absorbed and recited. Abstractness of Titles is also related to a greater depth of thought that is not allowed by rote learning, but requires a second thought, or a moment for a person to think beyond the obvious.

Confucianism and Creative Strengths

Confucianism has the strongest negative relationship with Creative Strengths, emphasizing the ideological opposition between Confucianism and Creativity. Confucianism is about staying with tradition and living within existing confines, while Creative Strengths, even more than the other elements of the TTCT, are about investing fresh energy into new ideas that go beyond the original expectations of the test.

EWPS Items that had Strongest Correlations with the Creativity Index and TTCT Subscales

Specific items on the EWPS were compared to content areas on the TTCT, as well as the Creativity Index. Confucian items have a consistently negative correlation with TTCT scores. Special attention is paid to the items with significant correlations between the Creativity Index and subscales. Table 9 through Table 13 show items that have the strongest negative correlations with the TTCT subscales and the Creativity Index. When groupings are compared with each other, certain items continually show the highest negative relationships, although there were some gender differences in the relationships between the Confucian items and the TTCT subscales and the Creativity Index as Table 9 through Table 13 show. The areas of Confucianism that show the most remarkable negative relationships to creativity are discussed as follows:

Item 9 (A man should be the head of the household), Item 14 (An obedient woman is better than a willful woman), and Item 15 (I would worry if my daughter never married) are related to Gender Inequality, which is a combination of hierarchy and rigid gender roles. Creativity researchers consistently see rigid gender roles as creativity inhibitors (Eriksson, 1989; Jellen & Urban, 1986; Grant, 1973; e.g., Fielding, 1983). Several studies found that Androgyny has a positive relationship with creativity (Harrington & Anderson, 1981; Hittner & Daniels,

2002, Norlander, Erixon, &Archer, 2000; Torrance, 1960, 1962, 1963). However, the negative relationships between Item 9 and Item 14 and the Creativity Index for females are not as high as those for males. In other words, men who agree with Gender Inequality tend to be less creative than women who agree with Gender Inequality.

Item 12 (It should not be easy to fall in love) is related to Suppression of Expression, which resists and corrupts the development of creativity (Averill, 1999, Averill & Nunley, 1992; Domino, 1969; Lytton, 1971; MacKinnon, 1978a; Smith & Carlsson, 1990). However, the negative relationships between Item 12 and the TTCT Subscales for females do not seem to be as high as that for males. In other words, men who show Suppression of Expression tend to be less creative than women who show Suppression of Expression.

Item 28 (It is better to be wary of eccentric people) and Item 45 (It is good to stand out for your individual qualities) are related to Conformity, which is rare among creative individuals (Torrance & Dauw, 1966; Vince-Bakonyi, 1969).

Item 32 (People with greater seniority should have a much stronger voice in a company than those with less seniority) is related to Obedience and Hierarchy, which are inflexible and require obedience instead of dialogue, which is necessary for creative problem solving (Pelz & Andrews, 1966; Van Gundy, 1987; Williams & Yang, 1999). Item 44 (Students should not question what they are taught by their teachers) is also related to Obedience and Hierarchy. Teachers' authority in terms of Hierarchy originated from Emphasis on Education which, when interpreted as rote learning and memorization without questioning, ultimately limits creativity (Jeon, 2000; Kim, 1999; Kim & Michael, 1995; Lee & Schallert, 1997; Wollam, 1992). Learning that suppresses questioning enforces conformity and recitation instead of nurturing the kind of exploration and experimentation that students require for creative learning and achievement

(Fielding, 1983, 1997; e.g., Auh & Walker, 1999; Brooking, 1995; Martinsons & Martinsons, 1996). However, the negative relationships between Item 32 and Item 44 and the TTCT subscales for females do not seem to be as high as those for males. In other words, men who are hierarchically minded tend to be less creative than women who are hierarchically mined.

Item 27 (Working hard is more important than enjoying one's life) is related to Work-Play Dichotomy and devalue of play, which limit the development and expression of creativity (Amabile, 1979; Fielding, 1983; Torrance, 1962, 1963; Varma, 1993). Furthermore, once the work-play dichotomy is established, the subsequent devalue of play inhibits fantasy which has shown strong ties to creative behavior (Hennessey & Amabile, 1987; Torrance, 1962, 1964; Vygotsky, 1992; Wade, 1971).

In summary, the Confucian categories that continuously show the strongest negative relationship to creativity are Obedience and Hierarchy, Gender Inequality, Conformity, Suppression of Expression, and Work-Play Dichotomy.

The Latent Structure of the TTCT

As a result of an Exploratory Factor Analysis on the TTCT scores, two factors were extracted, which are consistent with my other research on the TTCT (Kim, 2004; Kim & Cramond, 2004b; Kim, Cramond, and Bandalos, 2004). These studies examined the possibility of a two- factor model based on Kirton's (1976, 1978, 1987, 1989) Adaptor-Innovator (A-I) Theory. Kirton (1976, 1978, 1989) proposed that creativity was composed of a single dimension ranging from an "Innovative" to an "Adaptive" orientation, on which person's positions were representative of their approach to creativity, problem solving, and decision making (Puccio, Treffinger, & Talbot, 1995). However, Innovative and Adaptive may be separate dimensions rather than opposite ends of the same continuum. According to the model, as shown in Figure 1,

Factor Innovative was loaded by Fluency and Originality; Factor Adaptive was loaded by Elaboration and Abstractness of Titles; and both Factors were loaded by Resistance to Premature Closure. Creative Strengths was excluded because of the different procedures in scoring. The relationships between the factors and the five subscales based on Kirton' s descriptions (1987) of Innovative and Adaptive, with innovators preferring to create change by threatening the paradigm, and adaptors preferring to create change by working within the existing paradigm. Puccio and others '(1995) findings extend Kirton's theories, showing that the innovative style was highly related to product characteristics such as originality and expressiveness, while the adaptive orientation was linked to products that were described as logical and well-crafted. From years of scoring experiences of the TTCT, the TTCT scoring trainers and I have found similar typologies. One creative style of expression consisted of people who produced quick and novel responses and did better on Fluency and Originality; the other was made up of people who were detailed and deep thinkers and did better on Elaboration and Abstractness of Titles. In addition to that, the factor loadings of Innovative on Fluency and Originality were also based on Torrance and other researchers' findings (Torrance & Horng, 1980; Isaksen & Puccio, 1988) that innovators were significantly more fluent and more original. The logic for the double loading on Resistance to Premature Closure originated from Torrance's (1984, 1990, 1998) theoretical assumption that psychological openness is a prerequisite for creativity in general.

It can be assumed that the Adaptive type of creativity is more negatively related to Confucianism than the Innovative type of creativity because Factor Adaptive is comprised of Creative Strengths, Elaboration, and Abstractness of Titles, which have significantly negative relationships with Confucianism. This might indicate that the Adaptive type of creativity is more influenced by culture. Fluency (Ogawa, Kuehn-Ebert, & DeVito, 1991, cited in Saeki et al.,

2001; Saeki et al., 2001) and Resistance to Premature Closure (Saeki et al., 2001) scores were not affected by the cultural differences between America and Japanese samples. Scoring Originality among cultures requires culture-specific Originality Lists. With the present study, we cannot determine if the Originality scores were influenced by culture because Korean Originality Lists have not been developed.

Implications

Another study I was involved in (Seo, Lee, & Kim, in press) found that Korean science teachers' understanding of creativity appeared to emphasize only the cognitive components, while they ignored environmental components. Although a person needs cognitive ability to be creative, if the culture either does not value or discourages creative growth and expression, then the person's creativity cannot flourish. In order to encourage creativity, we should remove cultural blocks that inhibit creativity.

A quick review of the four principles of Confucianism and the ways they conflict with creativity is in order. The first principle of Confucianism is the Emphasis on Education, which inhibits creativity through rote learning, extreme competition, a work-play dichotomy, and a devaluation of play. The second principle of Confucianism is the Family System, which blocks creativity through strict gender role expectations, rigid parent-child relationships and an overemphasis on obedience, filial piety, and loyalty. The third principle of Confucianism is the Hierarchical Relationships, which decrease creativity through unequal relationships, rigid social structure, gender role expectations, and authoritarian relationship between teachers and students. The fourth principle of Confucianism is Benevolence, which stifles creativity through suppression of emotion, the silence ethic, an extreme value of humility, conformity, and stigmatized eccentricity.

This study indicates that some elements of Confucianism; mainly Obedience and Hierarchy, Gender Inequality, Conformity, Suppression of Expression, and Work-Play Dichotomy, may present cultural blocks to creativity in general. Furthermore, when creativity is divided into the two types of Innovative and Adaptive, Confucianism is found to be more negatively related to the Adaptive type than the Innovative type. This Adaptive type consists primarily of Creative Strengths, Abstractness of Titles, and Elaboration which have a significantly negative relationship.

In our search for ways to strengthen Korean student's education, we must not only find new techniques, but must change the parts of the system that are inhibiting creativity. The best creative techniques, or the strongest creative personality, cannot compensate for a culture that crushes creativity. Creative growth demands that we adapt our rigid boundaries of gender roles, conformity, and hierarchy into a creativity-friendly environment. Only through a self-evaluation of our culture, the elements that are blocking our populace, and the construction of more fertile creative soil can we lead our students to new levels of creative achievement.

Limitations

There are several limitations of the present study. One of them is that the Daegu group took the TTCT after they had a three-day creativity training which raised their average TTCT sores significantly when compared with the other three groups. Because of the training effect, the correlation between the EWPS scores and the Creativity Index of the TTCT within the Daegu group members was lower than that for the total sample. Without the training, the correlation between Confucianism and creativity might have been higher than the result of the present study. It also may have affected the difference between TTCT Figural-A and –B. All of the Daegu group took TTCT Figural-A; the average score for the TTCT Figural-A was significantly higher

than that for the TTCT Figural-B, even though they are proven to be parallel forms (Torrance, 1966, 1974, 1990, 1998; Torrance & Ball, 1984). However, for the Seoul group, 23 of whom took the TTCT Figural –A, and 20 of whom took the TTCT Figural-B, there were no significant differences between the two TTCT forms. Thus, for future studies, it would be better if we measure creativity both before and after a creativity training using the parallel forms A and B so that we can not only measure the relationship between creativity and Confucianism, but also measure the effects of the training.

Another limitation of this study is that the Originality Lists of the TTCT currently used was developed in 1984 by Torrance. It is reasonable to assume that the culture has changed enough over the last twenty years to justify updating the Originality Lists (Kim & Cramond, 2004a). Cultural concerns are also present for the Originality Lists. When the TTCT was scored, Originality was scored by the American Originality Lists. From my experience scoring the TTCTs of Americans and Koreans, I have noticed that some responses which are unusual among Americans are very common among Koreans, and vice versa, which means that the Originality Lists for Korean people should be different from the one in the American manual. Saeki et al. (2001) also noticed this difference among cultural groups when comparing Japanese and American responses and suggested the creation and use of independent criteria for each group. The statistical frequency of various responses will vary among people from different cultures, which makes it misleading to use TTCT-Figural in different cultures without adequate norm groups for their own populations and, subsequently, their own Originality Lists. One of Torrance's associates, Richard Johnson, found that Originality was culture-specific (Millar, 1995), which supports this concern.

Another limitation was that the sample size of the present study was too small. The overall educational level was fairly homogenous. All of the participants were college graduates, which means that their responses might be different from responses from people with less education. Related to the education of participants, the geographic distribution was not diverse enough—all participants were either from cities or rural areas near those cities rather than from remote rural areas where respondents may show different trends. Age was not related to TTCT scores, but was related to EWPS scores. Females were younger than males, which may have accounted for differences in the EWPS scores. Therefore, having similar ages among male and female samples would be preferable.

Sampling is also one of the limitations. The subjects in this study consisted mostly of Korean educators which limits the generalization of results for the entire population of Korea. For future studies, it would be appropriate to conduct research for samples that can represent the whole population, which would address issues such as occupation, social status, and economic level.

The factor structure of the EWPS presented some limitations. Because the factor loadings did not cluster in the ways originally intended, the subscales were unusable. If the EWPS had distinctive subscales, the scores on the subscales could be compared with the Creative Index and subscale scores of the TTCT, which would have provided more specific information.

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Table 1

Factor Loadings for the Items of the EWPS

Factor	Item		Factor Loading	Double Loading (>|.25|)
	Number	Content		
1	Item 18	A woman's place is in the home.	.871	
	Item 14	An obedient woman is better than a willful woman.	.854	
	Item 5	The mother should be the primary caregiver for the children.	.702	
	Item 22	Kitchen work is a woman's job.	.649	
	Item 10	Discipline is the father's primary child care role.	.595	
	Item 9	A man should be the head of the household.	.550	.385/Factor 2
	Item 8	A man who talks to his wife about his life outside the home is not considered a real man.	.504	
	Item 15	I would worry if my daughter never married.	.402	
	Item 29	Work must be separate from play.	.335	
	Item 42	A healthy relationship is found between equals (-).	.329	
	Item 7	It is inappropriate to hug my spouse in front of my parents.	.251	
2	Item 30	Elderly parents should live with their children, who will take care of them.	.739	
	Item 23	Children should always obey their parents.	.675	

	Item 37	Teachers should be respected at all times.	.375	
	Item 49	When I make decisions, group opinions are more important than personal ones.	-.267	.386/Factor 1
	Item 28	It is better to be wary of eccentric people.	.253	.330/Factor 1
3	Item 3	The better you are, the more self-effacing you should be.	-.861	
	Item 2	A person with deepest thought speaks the least.	-.684	
	Item 17	Modesty comes with wisdom.	-.658	
	Item 1	Affection should be kept within the heart rather than expressed.	-.381	
	Item 16	A man should not be talkative.	-.348	
	Item 13	Modesty is more important than self-esteem.	-.336	.270/Factor 2
4	Item 33	I should be like everyone else.	-.510	
	Item 34	I would rather be normal than be creative and a little different.	-.358	
	Item 6	It is good that parents are friends with their children (-).	.232	
5	Item 41	A married man should put his parents' wishes above his wife's.	-.647	
	Item 4	It is okay if a husband stays at home and raises his children if his wife has a job (-).	.471	

	Item 36	Throughout a person's life his or her parents should always come first.	-.455	
6	Item 11	When my children want to get married to someone, they should have my permission.	.645	
	Item 47	Men should be masculine and women should be feminine.	.592	
	Item 46	Eccentricity has no positive components.	-.433	.434/Factor 1
	Item 45	It is good to stand out for your individual qualities (-).	-.408	-.367/Factor 10
	Item 38	Conflict should be avoided at all times.	.363	
	Item 48	Students should not speak until they are spoken to by their teacher.	.346	
	Item 26	A career as an educator is superior to that of a business professional.	.285	
7	Item 27	Working hard is more important than enjoying one's life.	.577	.349/Factor 1
	Item 12	It should not be easy to fall in love.	.516	
	Item 35	You must work hard and save money when you are young.	.497	
	Item 31	You should be loyal to your company until you retire.	.400	.266/Factor 2
8	Item 19	I will financially support my children's college	.717	

		education.		
	Item 40	I want my children to study hard rather than to play sports.	.658	
	Item 24	College graduation is more important than what my child may learn from a high school job.	.396	.386/Factor 4
	Item 39	A genius is abnormal.	.310	
9	Item 21	Talking about my children's talents to other people should be restrained.	.505	
	Item 20	Showing emotion is a sign of immaturity.	.498	
10	Item 32	People with greater seniority should have a much stronger voice in a company than those with less seniority.	-.463	.334/Factor 7
	Item 43	You should obey your boss and never voice disagreements.	-.451	
	Item 44	Students should not question what they are taught by their teachers.	-.381	.363/Factor 2
	Item 25	I expect my employees to follow my directions rather than suggesting new ideas.	-.345	.381/Factor 10

Note. Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

(-): Coded inversely.

Table 2

Sample Demographics

Group	N	Age		Occupation				Region			
		M	SD	T	P	G	E	North west	South west	South east	O
Total	184	38.67	8.52	114	16	42	12	43	53	59	29
Male	82	42.13	7.40	68	9	3	2	4	28	31	19
Female	102	35.89	8.37	46	7	39	10	39	25	28	10

Note. N= Sample Size; T = Teacher; P = Professor, G = Graduate Students; E = Employees of Educational Institutes; O = Other Areas

Table 3

Descriptive Statistics for the Items of the EWPS [N = 184 (Male = 82, Female = 102)]

Item Number	*M*	*SD*	*T* (ES *r*)	Skewness	Kurtosis	Corrected Item-Total Correlation
1	2.815	1.182	3.373* (.243)	.103	-1.164	.331
2	3.712	.974	3.054* (.221)	-.684	-.084	.333
3	3.978	.899	1.959	-.687	-.183	.342
4	2.582	1.021	-1.117	.228	-.709	.057
5	3.163	1.157	3.237* (.233)	-.131	-.989	.419
6	2.234	.949	1.226	.678	.107	.134
7	3.049	1.098	5.532* (.379)	.003	-.804	.407

8	2.288	1.034	6.198* (.418)	.806	.081	.497
9	3.489	.958	4.911* (.342)	-.553	-.151	.605
10	2.201	1.034	4.280* (.302)	.638	-.357	.544
11	3.859	.831	-.252	-1.232	2.288	-.007
12	3.413	1.004	1.954	-.609	-.507	.435
13	2.696	1.005	3.816* (.272)	.185	-.822	.487
14	2.397	1.061	8.023* (.511)	.482	-.420	.618
15	3.424	1.104	5.206* (.360)	-.631	-.333	.553
16	2.750	.993	3.459* (.248)	.148	-.578	.459
17	3.353	.986	1.667	-.413	-.483	.351
18	2.353	1.040	5.184* (.359)	.780	.138	.596
19	3.859	.876	3.787* (.270)	-.806	.635	.325
20	2.603	.953	2.127	.295	-.589	.530
21	2.870	.871	2.900* (.210)	.157	-.995	.452
22	2.337	1.006	5.826* (.397)	.390	-.640	.431
23	3.870	.839	1.363	-1.095	1.706	.256
24	3.190	1.031	.058	-.178	-.860	.303
25	2.217	.866	2.460	.838	.892	.547
26	3.315	1.120	1.080	-.271	-.799	.195
27	2.859	1.046	4.236* (.300)	.258	-.646	.529
28	2.489	.923	3.632* (.260)	.390	-.432	.597
29	3.277	1.152	4.655* (.326)	-.321	-1.003	.408
30	3.582	.908	1.694	-.666	.443	.210

31	2.897	1.006	2.930* (.212)	-.117	-.806	.441
32	2.614	.996	1.591	.200	-.493	.638
33	3.544	1.002	.656	-.665	-.137	.490
34	2.946	1.060	.483	.026	-1.009	.501
35	3.690	.885	2.098	-.783	.070	.404
36	2.891	.963	4.164* (.295)	.331	-.668	.484
37	3.755	.887	1.519	-.733	.343	.360
38	2.995	1.022	1.081	.011	-.940	.349
39	2.614	1.125	3.774* (.269)	.503	-.525	.391
40	3.332	.972	1.194	-.491	-.510	.297
41	2.652	.802	6.193* (.417)	.328	-.125	.465
42	1.832	.923	2.751* (.200)	1.228	1.439	.279
43	2.511	.969	2.340	.497	-.219	.495
44	2.929	1.056	1.664	-.083	-.862	.536
45	2.120	.794	.783	.975	1.636	.369
46	1.940	.900	1.807	1.208	1.831	.494
47	2.940	1.146	3.451* (.248)	-.146	-.973	.378
48	2.484	1.045	.472	.581	-.458	.339
49	3.065	.990	2.849* (.207)	-.269	-.532	.479

Note. N= Sample size; ES *r* = Effect Size *r* from the independent samples *t*-test between males and females

*$p < .01$, one-tailed.

Table 4

Descriptive Statistics for EWPS Total Scores [N = 184 (Male = 82, Female = 102)]

	Group	*M*	*SD*	*T* (ES *r*)	Skewness	Kurtosis
EWPS	Total	143.973	21.791	6.730*	-.056	.165
Score				(.446)		
	Male	154.793	19.437		-.031	1.334
	Female	135.275	19.646		-.133	-.479

Note. Score range of EWPS is 49 – 245.

N = Sample size; ES *r* = Effect Size *r* from the independent samples *t*-test.

*$p < .01$, one-tailed.

Table 5

Descriptive Statistics for the Creativity Index of the TTCT [N = 184 (Male = 82, Female = 102)]

	Group	*M*	*SD*	*T* (ES *r*)	Skewness	Kurtosis
Creativity	Total	125.011	17.913	-2.967*	-.334	-.492
Index				(.215)		
	Male	120.732	18.629		-.084	-.849
	Female	128.451	16.621		-.506	.136

Note. Score range of the Creativity Index is 41 – 160.

N = Sample size; ES *r* = Effect Size *r* from the independent samples *t*-test.

*$p < .01$, one-tailed.

Table 6

Descriptive Statistics for the Scores of the Subscales of the TTCT [N = 184 (Male = 82, Female = 102)]

TTCT Subscale	Group	*M*	*SD*	*T* (ES *r*)	Skewness	Kurtosis
Fluency	Total	110.250	22.474	.947	-.911	.356
	Male	112.000	22.551		-.229	-.949
	Female	108.843	22.424		.050	-.809
Originality	Total	120.957	19.611	-.154	-.628	.356
	Male	120.707	21.045		-.086	-.608
	Female	121.157	18.482		-.185	-.708
Elaboration	Total	126.783	27.137	-3.206*	-.556	.356
	Male	119.805	29.292		-.402	-1.000
	Female	132.392	23.977	(.231)	-.844	-.089
Titles	Total	96.995	27.214	-2.726*	.165	.356
	Male	91.000	27.872		.050	.624
	Female	101.814	25.812	(.198)	-.087	-.147
Closure	Total	114.451	19.712	-.616	-.043	.356
	Male	113.451	19.022		.115	-.156
	Female	115.255	20.306		-.250	.111
Strengths	Total	11.141	4.550	-5.094*	-.687	.356
	Male	9.354	4.059		.788	.411
	Female	12.578	4.429	(.353)	-.027	-.713

Note. Titles = Abstractness of Titles; Closure = Resistance to Premature Closure; Strengths = Creative Strengths.

Variable ranges are as follows: Fluency: 40-154; Originality: 40-160; Elaboration: 40-160; Abstractness of Titles: 40-160; Resistance to Premature Closure: 40-160; Creative Strengths: 0-26.

ES *r* = Effect Size *r* from the independent samples *t*-test.

*$p < .01$, one-tailed.

Table 7

Intercorrelations Between the EWPS Total Scores and the Creativity Index and Age [N = 184 (Male = 82, Female = 102)]

	Group	EWPS	Creativity Index
Creativity Index	Total	-.439*	
	Male	-.442*	
	Female	-.351*	
Age	Total	.382*	-.167
	Male	.426*	-.017
	Female	.148	-.163

Note. *$p < .01$, one-tailed

Table 8

Intercorrelation Between EWPS Total Scores and TTCT Subscales [N = 184 (Male = 82, Female = 102)]

TTCT Subscale	Group	EWPS
Fluency	Total	-.045
	Male	-.057
	Female	-.108
Originality	Total	-.212*
	Male	-.282*
	Female	-.187
Elaboration	Total	-.357*
	Male	-.259*
	Female	-.328*
Abstractness of Titles	Total	-.276*
	Male	-.399*
	Female	-.057
Resistance to Premature Closure	Total	-.106
	Male	-.098
	Female	-.093
Creative Strengths	Total	-.650*
	Male	-.650*
	Female	-.543*

Note. *$p < .01$, one-tailed.

Table 9

Item Examples that had the Strongest Correlations (r > .300) with the Creativity Index [N = 184 (Male = 82, Female = 102)]

Item Number	Item Content	Creativity Index	
		Male	Female
Item 28	It is better to be wary of eccentric people.	-.346*	
		-.301*	-.314*
Item 9	A man should be the head of the household.	-.332*	
		-.332*	-.245*
Item 12	It should not be easy to fall in love.	-.319*	
		-.376*	-.225
Item 14	An obedient woman is better than a willful woman.	-.304*	
		-.250	-.210
Item 32	People with greater seniority should have a much stronger	-.303*	
	voice in a company than those with less seniority.	-.366*	-.214

Note. *$p < .01$, one-tailed.

Table 10

Item Example that had the Strongest Correlation (r > .250) with Originality [N = 184 (Male = 82, Female = 102)]

Item Number	Item Content	Originality	
		Male	Female
Item 12	It should not be easy to fall in love.	-.255*	
		-.332*	-.184

Note. *$p < .01$, one-tailed.

Table 11

Item Examples that had the Strongest Correlations (r > .300) with Elaboration [N = 184 (Male = 82, Female = 102)]

Item Number	Item Content	Elaboration	
		Male	Female
Item 44	Students should not question what they are taught by their	-.334*	
	teachers.	-.351*	-.278*
Item 28	It is better to be wary of eccentric people.	-.303*	
		-.200	-.322*

Note. *$p < .01$, one-tailed.

Table 12

Item Examples that had the Strongest Correlations (r > .250) with Abstractness of Titles [N = 184 (Male = 82, Female = 102)]

Item Number	Item Content	Abstractness of Titles	
		Male	Female
Item 45	It is good to stand out for your individual qualities (-).	-.259*	
		-.355*	-.145
Item 9	A man should be the head of the household.	-.252*	
		-.306*	-.119

Note. $*p < .01$, one-tailed.

(-): Coded inversely.

Table 13

Item Examples that had the Strongest Correlations (r > .380) with Creative Strengths [N = 184 (Male = 82, Female = 102)]

Item Number	Item Content	Creative Strengths	
		Male	Female
Item 9	A man should be the head of the household.	-.516*	
		-.490*	-.423*
Item 28	It is better to be wary of eccentric people.	-.447*	
		-.428*	-.368*
Item 14	An obedient woman is better than a willful woman.	-.418*	

		-.398*	-.207
Item 32	People with greater seniority should have a much stronger	-.418*	
	voice in a company than those with less seniority.	-.468*	-.360*
Item 44	Students should not question what they are taught by their	-.418*	
	teachers.	-.443*	-.375*
Item 27	Working hard is more important than enjoying one's life.	-.416*	
		-.410*	-.298*
Item 15	I would worry if my daughter never married.	-.410*	
		-.263*	-.363*
Item 34	I would rather be normal than be creative and a little	-.388*	
	different.	-.341*	-.446*
Item 12	It should not be easy to fall in love.	-.386*	
		-.426*	-.315*

Note. *$p < .01$, one-tailed.

Table 14

Pattern Matrix for the Subscales of the TTCT

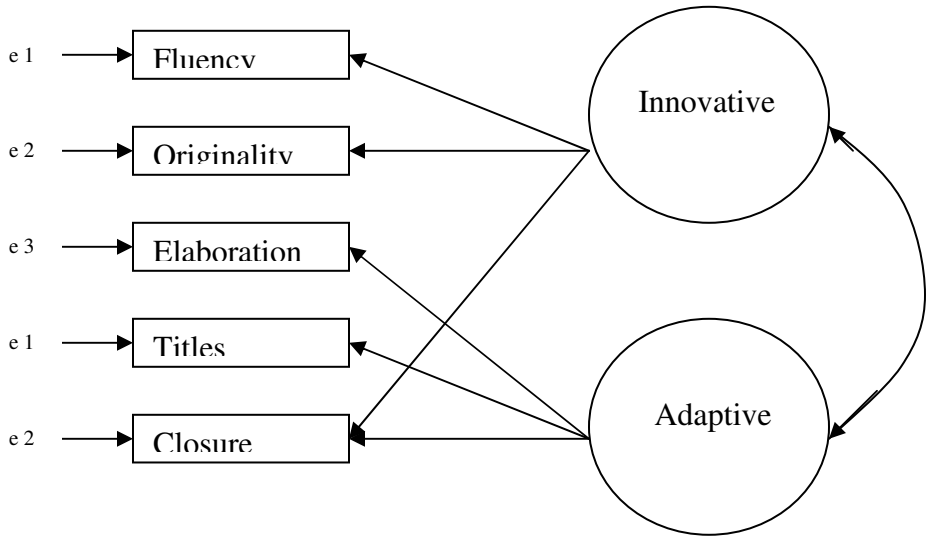
	Factor	
TTCT Subscale	1	2
Creative Strengths	1.013	-.189
Elaboration	.647	-.004
Abstractness of Titles	.645	-.050
Resistance to Premature Closure	.218	.181
Fluency	-.273	.922
Originality	.155	.716

Note. Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

Figure 1

Hypothesized Model in Kim (2004), Kim and Cramond (2004b), and Kim, Cramond, and Bandalos (2004)'s Study



Note. Titles = Abstractness of Titles; Closure = Resistance to Premature Closure.

APPENDICES

동·서양의 관점 비교 연구를 위한 질문지
(EASTERN - WESTERN PERSPECTIVE SCALE: EWPS)

★ 다음에 제시된 문항을 읽고 자신의 생각과 가장 가까운 문항에 O 표를 해 주십시오.
옳고 그른 답은 없습니다.

번호	내 용	전적으로 반대한다	반대한다	그저 그렇다	동의한다	전적으로 동의한다
1	사랑은 가슴 속 깊이 간직하는 것이 표현을 다 하는 것 보다 낫다.	1	2	3	4	5
2	깊이 생각하는 사람일수록 말은 적게 한다.	1	2	3	4	5
3	벼는 익을수록 고개를 숙인다.	1	2	3	4	5
4	아내가 직업이 있을 경우 남편이 집에서 자녀를 양육하는 것도 좋다.	1	2	3	4	5
5	자녀 양육의 경우 어머니가 주된 역할을 하는 것이 좋다.	1	2	3	4	5
6	부모와 자식간에는 친구처럼 지내는 것이 좋다.	1	2	3	4	5
7	부모님 앞에서 배우자를 포옹하는 것은 다소 부적절하다.	1	2	3	4	5
8	남자가 밖에서 있었던 일을 모두 아내에게 말하는 것은 남자답지 못하다.	1	2	3	4	5
9	남자가 가장이 되는 것이 바람직하다.	1	2	3	4	5
10	자녀의 양육에 있어 아버지의 주된 역할은 훈계하는 것이다.	1	2	3	4	5
11	결혼을 할 때 부모에게 결혼 허락을 받는 것이 바람직하다.	1	2	3	4	5
12	쉽게 사랑에 빠져서는 안된다.	1	2	3	4	5
13	겸손이 자기존중보다 더 중요하다.	1	2	3	4	5
14	순종적인 아내가 의지가 굳은 아내보다 더 바람직하다.	1	2	3	4	5
15	내 자녀가 독신으로 살려 한다면 걱정스러울 것이다.	1	2	3	4	5
16	남자는 과묵한 것이 좋다.	1	2	3	4	5
17	아는 것이 많은 사람일수록 겸손하다.	1	2	3	4	5
18	아내는 집에서 가정을 지키는 것이 바람직하다.	1	2	3	4	5
19	나는 나의 자녀의 대학 학비를 댈 것이다.	1	2	3	4	5
20	감정을 남에게 드러내 보이는 것은 미성숙한 표시이다.	1	2	3	4	5
21	자식에 대해 자랑하는 것은 삼가는 것이 좋다.	1	2	3	4	5
22	부엌일은 여자가 하는 것이 더 좋다.	1	2	3	4	5

23	자녀들은 부모에게 효도해야 한다.	1	2	3	4	5
24	대학을 졸업하는 것이 다른 직업 경험을 일찍 쌓는 것 보다 낫다.	1	2	3	4	5
25	부하직원이 다른 의견을 제시하기 보다는 상사의 지시를 따르는 것이 좋다.	1	2	3	4	5
26	가르치는 직업이 장사를 하는 것보다 낫다.	1	2	3	4	5
27	열심히 일하는 것이 삶을 즐기는 것 보다 더 중요하다.	1	2	3	4	5
28	남과 다른 행동을 하는 사람은 경계하는 것이 좋다.	1	2	3	4	5
29	일하는 것은 노는 것과 구분되는 것이 좋다.	1	2	3	4	5
30	연로하신 부모는 자식이 모시는 것이 바람직하다.	1	2	3	4	5
31	퇴직할 때까지 회사에 충성하는 것이 좋다.	1	2	3	4	5
32	연장자들이 더 강한 발언권을 갖는 것이 바람직하다.	1	2	3	4	5
33	모가 나지 않게 사는 것이 좋다.	1	2	3	4	5
34	창의적이면서 남과 다르게 살기 보다는 남과 더불어 묻혀서 살고 싶다.	1	2	3	4	5
35	젊었을 때 부지런히 일해서 저축하는 것이 좋다.	1	2	3	4	5
36	전 생애를 통하여 부모님이 항상 우선순위인 것이 바람직하다.	1	2	3	4	5
37	선생님은 존경의 대상이어야 한다.	1	2	3	4	5
38	갈등은 피하는 것이 좋다.	1	2	3	4	5
39	천재는 비정상적이다.	1	2	3	4	5
40	나의 자녀가 운동을 하기 보다는 공부를 하기를 바란다.	1	2	3	4	5
41	부모가 부인보다 우선인 것이 바람직하다.	1	2	3	4	5
42	부부 사이는 평등한 것이 좋다.	1	2	3	4	5
43	의견 불일치보다는 상사에게 순종하는 것이 낫다.	1	2	3	4	5
44	학생들은 교사에게 순종하는 것이 바람직하다.	1	2	3	4	5
45	개인의 독특한 성격을 표현하는 것이 좋다.	1	2	3	4	5
46	독특한 것의 긍정적인 면은 없다.	1	2	3	4	5
47	남자는 남자답고 여자는 여자 다운 것이 더 좋다.	1	2	3	4	5
48	교사가 질문을 할 때까지 학생은 열심히 듣는 것이 좋다.	1	2	3	4	5
49	단체적인 결정이 개인행동보다 중요하다.	1	2	3	4	5

Appendix B

EASTERN - WESTERN PERSPECTIVE SCALE (EWPS)

★ Please read following sentences and circle one that is the closest to what you think. There is no right or wrong answer.

Item	**Content**	Strongly Disagree	Disa gree	Unde cided	Agree	Strongly Agree
1	Affection should be kept within the heart rat her than expressed.	1	2	3	4	5
2	A person with deepest thought speaks the le ast.	1	2	3	4	5
3	The better you are, the more self-effacing yo u should be.	1	2	3	4	5
4	It is okay if a husband stays at home and rai ses his children if his wife has a job.	1	2	3	4	5
5	The mother should be the primary caregiver for the children.	1	2	3	4	5
6	It is good that Parents are friends with their children.	1	2	3	4	5
7	It is inappropriate to hug my spouse in front of my parents.	1	2	3	4	5
8	A man who talks to his wife about his life o utside the home is not considered a real ma n.	1	2	3	4	5
9	A man should be the head of the household.	1	2	3	4	5
10	Discipline is the father's primary child care role.	1	2	3	4	5
11	When my children want to get married to so meone, they should have my permission.	1	2	3	4	5
12	It should not be easy to fall in love.	1	2	3	4	5
13	Modesty is more important than self-esteem.	1	2	3	4	5
14	An obedient woman is better than a willful woman.	1	2	3	4	5
15	I would worry if my daughter never marrie d.	1	2	3	4	5
16	A man should not be talkative.	1	2	3	4	5
17	Modesty comes with wisdom.	1	2	3	4	5
18	A woman's place is in the home.	1	2	3	4	5
19	I will financially support my children's college ed ucation.					
20	Showing emotion is a sign of immaturity.	1	2	3	4	5
21	Talking about my children's talents to other peopl e should be restrained.	1	2	3	4	5
22	Kitchen work is a woman's job.	1	2	3	4	5

23	Children should always obey their parents.	1	2	3	4	5
24	College graduation is more important than what my child may learn from a high school job.	1	2	3	4	5
25	I expect my employees to follow my directions rather than suggesting new ideas.	1	2	3	4	5
26	A career as an educator is superior to that of a busi ness professional.	1	2	3	4	5
27	Working hard is more important than enjoying one's life.	1	2	3	4	5
28	It is better to be wary of eccentric people	1	2	3	4	5
29	Work must be separate from play.	1	2	3	4	5
30	Elderly parents should live with their children, wh o will take care of them.	1	2	3	4	5
31	You should be loyal to your company until you retire.	1	2	3	4	5
32	People with greater seniority should have a much s tronger voice in a company than those with less se niority.	1	2	3	4	5
33	I should be like everyone else.	1	2	3	4	5
34	I would rather be normal than be creative and a litt le different.	1	2	3	4	5
35	You must work hard and save money when you ar e young.	1	2	3	4	5
36	Throughout a person's life his or her parents shoul d always come first.	1	2	3	4	5
37	Teachers should be respected at all times.	1	2	3	4	5
38	Conflict should be avoided at all times.	1	2	3	4	5
39	A genius is abnormal.	1	2	3	4	5
40	I want my children to study hard rather than to pla y sports.	1	2	3	4	5
41	A married man should put his parents' wishes abo ve his wife's.	1	2	3	4	5
42	A healthy relationship is found between equals.	1	2	3	4	5
43	You should obey your boss and never voice disagr eements.	1	2	3	4	5
44	Students should not question what they are taught by their teachers.	1	2	3	4	5
45	It is good to stand out for your individual qualities.	1	2	3	4	5
46	Eccentricity has no positive components.	1	2	3	4	5
47	Men should be masculine and women should be feminine.	1	2	3	4	5
48	Students should not speak until they are spoken to by their teacher.	1	2	3	4	5
49	When I make decisions, group opinions are more i mportant than personal ones.	1	2	3	4	5

Note. This is the final EWPS

Appendix C

THE FIRST EWPS

Listed below are statements based on Eastern and Western perspectives. Please read each statement carefully. Then circle the numbers that show how much you agree or disagree with the statement. Use the following:

Strongly Agree = 5, Agree = 4, Undecided = 3, Disagree = 2, and Strongly Disagree = 1

1) Success comes from hard work, not from inborn talent. 5 4 3 2 1
2) Affection should be kept within the heart rather than expressed. 5 4 3 2 1
3) A person with deepest thought speaks the least. 5 4 3 2 1
4) The better you are, the more self-effacing you should be. 5 4 3 2 1
5) It is okay if a husband stays at home and raises his children if his wife has a professional job. 5 4 3 2 1
6) The mother should be the primary caregiver for the children. 5 4 3 2 1
7) Parents can not be friends with their children. 5 4 3 2 1
8) Ideas are more important than objects. 5 4 3 2 1
9) It is inappropriate to hug my wife in front of my parents. 5 4 3 2 1
10) A man who talks to his wife about his life outside the home is not considered a real man. 5 4 3 2 1
11) You have to "blow your own horn" in order to advance. 5 4 3 2 1
12) A man should be the head of the household. 5 4 3 2 1
13) The father's primary role is to discipline. 5 4 3 2 1
14) When my children want to get married to someone, they must have my permission. 5 4 3 2 1
15) Mental development is more important than physical accumulation or technical development. 5 4 3 2 1
16) It should not be easy to fall in love. 5 4 3 2 1
17) A person who is talkative is entertaining. 5 4 3 2 1
18) Modesty is more important than self-esteem. 5 4 3 2 1
19) An obedient woman is better than a willful woman. 5 4 3 2 1
20) I would worry if my daughter was alone and never married. 5 4 3 2 1
21) Young adults should base all of their decisions on their parents' wishes. 5 4 3 2 1
22) I will support my children's college education. 5 4 3 2 1
23) People should not hide their feelings. 5 4 3 2 1
24) A man must not be talkative. 5 4 3 2 1
25) Modesty comes with wisdom. 5 4 3 2 1
26) A woman's place is in the home. 5 4 3 2 1
27) I would never teach my son how to cook and wash dishes. 5 4 3 2 1
28) The goal of the family is to raise children into autonomous adults. 5 4 3 2 1
29) What my high-school child will learn from a job can be more valuable than what he or she may learn from school. 5 4 3 2 1
30) Showing emotion is a sign of immaturity. 5 4 3 2 1
31) Silence is golden. A man should think before he speaks. 5 4 3 2 1
32) Talking about my children's talents to other people should be

restrained.	5 4 3 2 1
33) Cooking and washing dishes are a woman's job.	5 4 3 2 1
34) It is okay if my daughter becomes a soldier or police officer.	5 4 3 2 1
35) Children should always obey their parents without question.	5 4 3 2 1
36) Adults should obey their parents, especially after they get married.	5 4 3 2 1
37) Older siblings should take care of their younger siblings.	5 4 3 2 1
38) I expect my employees to always follow my directions.	5 4 3 2 1
39) A career as an educator is far superior to that of a business professional.	5 4 3 2 1
40) I am valued for my uniqueness.	5 4 3 2 1
41) A person with odd behavior is to be feared.	5 4 3 2 1
42) Work must be separate from play.	5 4 3 2 1
43) Elderly parents should live with their children, who will take care of them.	5 4 3 2 1
44) Even between friends there is always one with greater wisdom.	5 4 3 2 1
45) People with seniority should have a much stronger voice in a company than those with less seniority.	5 4 3 2 1
46) When the teacher says something that the student does not understand, the student can ask the question at any time, even during a lecture.	5 4 3 2 1
47) I should be just like everyone else.	5 4 3 2 1
48) I would rather be normal than be creative and a little abnormal.	5 4 3 2 1
49) You must work hard and save money when you are young.	5 4 3 2 1
50) Throughout a person's life his or her parents should always come first.	5 4 3 2 1
51) If my friend is smarter than I am I will listen to him or her.	5 4 3 2 1
52) Young employees bring fresh ideas which are good for their company.	5 4 3 2 1
53) Teachers are to be highly respected at all times.	5 4 3 2 1
54) Conflict should be avoided at all times.	5 4 3 2 1
55) A genius is abnormal and lonely.	5 4 3 2 1
56) I want my children to study hard rather than to play sports.	5 4 3 2 1
57) A married man should put his parents' wishes above his wife's.	5 4 3 2 1
58) A healthy relationship is found between equals.	5 4 3 2 1
59) You should obey your boss completely and never voice disagreements.	5 4 3 2 1
60) Students should never question what they are taught by their teachers.	5 4 3 2 1
61) It is good to stand out for your individual qualities.	5 4 3 2 1
62) Eccentricity has no positive components.	5 4 3 2 1
63) Children's play helps their cognitive development.	5 4 3 2 1
64) Parents should teach their children how to think critically and make their own decisions.	5 4 3 2 1
65) Younger siblings should obey their older siblings.	5 4 3 2 1
66) We should always respect and listen to our boss.	5 4 3 2 1
67) Students should not speak until they are spoken to by their teacher.	5 4 3 2 1

68) When I make decisions, group opinions are more important than personal own. 5 4 3 2 1
69) A person who sees things differently has a lot to offer a group. 5 4 3 2 1
70) It is okay not to enjoy your present life for the sake of future success. 5 4 3 2 1

THE FIRST ITEM ANALYSIS

1. Deleted Items from the Initial (11 Items)

1) Success comes from hard work, not from inborn talent.

This item was developed to measure "hard work ethic." However, this is an "either, or" situation which people might hesitate to answer. Thus, it might not be a good measure for Confucianism.

8) Ideas are more important than objects.

This item is too vague and broad so that many people might be indecisive.

21) Young adults should base all of their decisions on their parents' wishes.

Among those adults, some of them might think about their parents who are too old to make important decisions. Thus, this might not be a good item.

28) The goal of the family is to raise children into autonomous adults.

The word, "autonomous," is a western concept so that the response to this item might be related to the respondents' education level.

34) It is okay if my daughter becomes a soldier or police officer.

The item was about gender roles, but the term 'okay' was too neutral for a diverse response. The item was deleted instead of changed because 'I like it' or 'it would please me' would be too strong a statement, again resulting in a limited response range.

36) Adults should obey their parents, especially after they get married.

This item was intended to see whether people place their parents over their wife. However, this might cause people to ask about the word "especially." Why "especially"?

37) Older siblings should take care of their younger siblings.

Most people tend to agree with this item. People might say, “Of course.”

44) Even between friends there is always one with greater wisdom.

This is a Korean proverb so that most people might tend to agree with this.

51) If my friend is smarter than I am I will listen to him or her.

The intention of this item was to see hierarchical relationships among friends. However, Korean culture has changed and many people do not see the hierarchy among casual friends to be as powerful, if existent, as it once was.

63) Children’s play helps their cognitive development.

The word, “cognitive,” is an educational term in Korea so that the response to this item might be related to the respondents’ education level.

65) Younger siblings should obey their older siblings.

The response to this item might depend on who the respondents think of. This means that if they think of siblings with large age differences, they might agree with this item. However, if people think of instances where siblings are very close in age, then they might answer differently.

2. Changed Items from the Initial

5) It is okay if a husband stays at home and raises his children if his wife has a professional job.

It is okay if a husband stays at home and raises his children if his wife has a job.

9) It is inappropriate to hug my wife in front of my parents.

It is inappropriate to hug my spouse in front of my parents.

11) You have to “blow your own horn” in order to advance.

You have to brag on yourself in order to advance.

14) When my children want to get married to someone, they must have my permission.

When my children want to get married to someone, they should have my permission.

15) Mental development is more important than physical accumulation or technical development.

Mental development is more important than physical development.

20) I would worry if my daughter was alone and never married.

I would worry if my child does not want to get married.

27) I would never teach my son how to cook and wash dishes.

Men should be masculine and women should be feminine.

29) What my high-school child will learn from a job can be more valuable than what he or she may learn from school.

College graduation is more important than having a high school job.

33) Cooking and washing dishes are a woman's job.

Kitchen work is a woman's job.

53) Teachers are to be highly respected at all times.

Teachers should be highly respected at all times.

55) A genius is abnormal and lonely.

A genius is abnormal.

66) We should always respect and listen to our boss.

You should be loyal to your company until you retire.

68) When I make decisions, group opinions are more important than personal own.

When I make decisions, group opinions are more important than personal ones.

70) It is okay not to enjoy your present life for the sake of future success.

Working hard is more important than enjoying one's life.

Appendix E

THE SECOND EWPS

Listed below are statements based on Eastern and Western perspectives. Please read each statement carefully. Then circle the numbers that show how much you agree or disagree with the statement. Use the following:

Strongly Agree = 5, Agree = 4, Undecided = 3, Disagree = 2, and Strongly Disagree = 1

1. Affection should be kept within the heart rather than expressed. 1. 2. 3. 4. 5
2. A person with deepest thought speaks the least. 1. 2. 3. 4. 5
3. The better you are, the more self-effacing you should be. 1. 2. 3. 4. 5
4. It is okay if a husband stays at home and raises his children if his wife has a job.1. 2. 3. 4. 5
5. The mother should be the primary caregiver for the children. 1. 2. 3. 4. 5
6. Parents can not be friends with their children. 1. 2. 3. 4. 5
7. It is inappropriate to hug my spouse in front of my parents. 1. 2. 3. 4. 5
8. A man who talks to his wife about his life outside the home is not considered a real man. 1. 2. 3. 4. 5
9. You have to brag on yourself in order to advance. 1. 2. 3. 4. 5
10. A man should be the head of the household. 1. 2. 3. 4. 5
11. The father's primary role in child care is to discipline. 1. 2. 3. 4. 5
12. I am valued for my uniqueness. 1. 2. 3. 4. 5
13. Mental development is more important than physical development. 1. 2. 3. 4. 5
14. It should not be easy to fall in love. 1. 2. 3. 4. 5
15. A person who is talkative is entertaining. 1. 2. 3. 4. 5
16. Modesty is more important than self-esteem. 1. 2. 3. 4. 5
17. An obedient woman is better than a willful woman. 1. 2. 3. 4. 5
18. I would worry if my child does not want to get married. 1. 2. 3. 4. 5
19. People should not hide their feelings. 1. 2. 3. 4. 5
20. A man must not be talkative. 1. 2. 3. 4. 5
21. Modesty comes with wisdom. 1. 2. 3. 4. 5
22. A woman's place is in the home. 1. 2. 3. 4. 5
23. Parents should teach their children how to think critically and make their own decisions.. 1. 2. 3. 4. 5
24. Showing emotion is a sign of immaturity. 1. 2. 3. 4. 5
25. Silence is golden. A man should think before he speaks. 1. 2. 3. 4. 5
26. Talking about my children's talents to other people should be restrained. 1. 2. 3. 4. 5
27. Kitchen work is a woman's job. 1. 2. 3. 4. 5
28. Children should always obey their parents without question. 1. 2. 3. 4. 5
29. You should be loyal to your company until you retire. 1. 2. 3. 4. 5
30. I expect my employees to always follow my directions1. 2. 3. 4. 5
31. A career as an educator is far superior to that of a business professional. 1. 2. 3. 4. 5
32. When my children want to get married to someone, they should have my permission. 1. 2. 3. 4. 5
33. A person with odd behavior is to be feared. 1. 2. 3. 4. 5
34. Work must be separate from play. 1. 2. 3. 4. 5

35. Elderly parents should live with their children, who will take care of them.
    1. 2. 3. 4. 5
36. Working hard is more important than enjoying one's life.1. 2. 3. 4. 5
37. People with more seniority should have a much stronger voice in a company than those with less seniority. 1. 2. 3. 4. 5
38. When the teacher says something that the student does not understand, the student can ask the question at any time, even during a lecture. 1. 2. 3. 4. 5
39. I should be just like everyone else. 1. 2. 3. 4. 5
40. I would rather be normal than be creative and a little abnormal. 1. 2. 3. 4. 5
41. You must work hard and save money when you are young1. 2. 3. 4. 5
42. Throughout a person's life his or her parents should always come first. 1. 2. 3. 4. 5
43. Young employees bring fresh ideas which are good for their company. 1. 2. 3. 4. 5
44. Teachers should be highly respected at all times. 1. 2. 3. 4. 5
45. Conflict should be avoided at all times. 1. 2. 3. 4. 5
46. A genius is abnormal. 1. 2. 3. 4. 5
47. I want my children to study hard rather than to play sports. 1. 2. 3. 4. 5
48. A married man should put his parents' wishes above his wife's. 1. 2. 3. 4. 5
49. A healthy relationship is found between equals. 1. 2. 3. 4. 5
50. You should obey your boss completely and never voice disagreements.
    1. 2. 3. 4. 5
51. Students should never question what they are taught by their teachers.
    1. 2. 3. 4. 5
52. It is good to stand out for your individual qualities. 1. 2. 3. 4. 5
53. Eccentricity has no positive components. 1. 2. 3. 4. 5
54. College graduation is more important than having a high school job. 1. 2. 3. 4. 5
55. I will support my children's college education. 1. 2. 3. 4. 5
56. Men should be masculine and women should be feminine.1. 2. 3. 4. 5
57. Students should not speak until they are spoken to by their teacher. 1. 2. 3. 4. 5
58. When I make decisions, group opinions are more important than personal ones.
    1. 2. 3. 4. 5
59. A person who sees things differently has a lot to offer a group. 1. 2. 3. 4. 5

THE SECOND ITEM ANALYSIS

1. Deleted Items from the Second (10 Items)

Reliability Coefficients of the 59 items = .8416

Item9) You have to brag on yourself in order to advance.

Scale-item correlation = -.187

Alpha if item deleted = .849

Factor Analysis: Factor12 loaded on Item9 (.465) and Item15 (.516) (A person who is talkative is entertaining), but, these two are theoretically not related. Item15 is another problematic one.

Interpretation: This item was developed in order to measure "modesty." However, the wording is not appealing to even less Confucian respondents so that 35.8 % of the respondents were undecided and 31.9% of them were disagreed.

Item12) I am valued for my uniqueness.

Scale-item correlation = .104

Alpha if item deleted = .843

Both Factor 1 (-.281) and Factor 2 (.273) loaded on Item12. Although these two factors are related, this Factor 1 loaded on this item negatively.

Interpretation: Item 12 was developed to rate how much a person valued individual qualities over conformist values, but the wording of the item speaks of the individual's personal uniqueness and so, instead of thinking of the value of people's uniqueness, each person considered his or her own unique characteristics of value and answered whether that person was different from other people. Only 12.2% of the respondents agreed or strongly agreed.

Item13) Mental development is more important than physical development.

Scale-item correlation = .028

Alpha if item deleted = .845

Factor Analysis: Factor 6 loaded on Item13 (.536), Item16 (.516), Item41 (.371), Item14 (.344), and Item25 (.262), but, Item13 is theoretically not related to those items. In addition, Factor 1 loaded on this item negatively (-.244), which cannot be explained theoretically, either.

This item was developed to measure relative values of education compared to athletics, manual labor, and other options, but the item is too vague or broad and so all respondents would answer that mental development is more important than physical development.

Only 13.4 % of the respondents disagreed or strongly disagreed.

Item15) A person who is talkative is entertaining.

Scale-item correlation = .021

Alpha if item deleted = .844

Factor Analysis: Factor12 loaded on Item9 (.465) and Item15 (.516), but, these two are theoretically not related. Item9 is another problematic one.

The intent of this item was to measure inhibition of talking, but many respondents were undecided because if a person is funny or has something insightful to say, then the talking will be entertaining, but if the person is speaking for the sake of talking, then it is annoying.

43.3% of the respondents were undecided.

Item19) People should not hide their feelings.

Scale-item correlation = -.004

Alpha if item deleted = .845

Factor14 loaded on Item19 (.552) and Item38 (.348) (When the teacher says something that the student does not understand, the student can ask the question at any time, even during a lecture), but, Item38 is another problematic one.

The intent of this item was to measure suppression of emotion. As soon as the respondents saw the word 'hide', they might have thought that it was bad to hide anything. Only 13.4 % of the respondents disagreed or strongly disagreed.

Item23) Parents should teach their children how to think critically and make their own decisions.

Scale-item correlation = .134

Alpha if item deleted = .842

Factor Analysis: Factors 3 (.222), 5 (.247), and 7 (.260) loaded on this item, which shows that this item does not really belong anywhere.

This item was developed to measure whether they value children's dependence and obedience. However, 63.7% of the respondents agreed, which is the highest percentage for one of the five scales. This item might have made the respondents answer according to their knowledge about parenting instead of their doing.

Item25) Silence is golden. A man should think before he speaks.

Scale-item correlation = .018

Alpha if item deleted = .845

Factor Analysis: Factors 1 (-.192), 6 (.262), and 7 (-.182) loaded on this item, which shows inconsistent relationships of negative and positive, and this also does not really belong to any category.

Because the part “Silence is golden” is a proverb, people tend to agree at the first sight without even looking at the other sentence. Only 8.7% of the respondents disagree or strongly disagreed.

Item38) When the teacher says something that the student does not understand, the student can ask the question at any time, even during a lecture.

Scale-item correlation = .058

Alpha if item deleted = .844

Factor14 loaded on Item38 (.348) and Item19 (.552) (People should not hide their feelings), but, Item19 is another problematic one.

Item43) Young employees bring fresh ideas which are good for their company.

Scale-item correlation = .110

Alpha if item deleted = .843

Only 14.8% of the respondents disagree or strongly disagreed.

Item59) A person who sees things differently has a lot to offer a group.

Scale-item correlation = .188

Alpha if item deleted = .842

The intent of this item was to measure conformity, but many respondents were undecided because they might have not been sure whether the person sees things differently in a way that is useful, or merely unusual. 40.1% of the respondents were undecided.

Note:

Not all of the items that had no relationship between the total score have deleted. For example, Item3 and Item44.

Item3) The better you are, the more self-effacing you should be.

Scale-item correlation = .148

Alpha if item deleted = .842

According to the factor analysis, Factor 8 loaded on Item3 (.808), Item2 (.488), and Item21 (.400), which are supposed to measure "modesty."

Item44) Teachers should be highly respected at all times.

Scale-item correlation = .166

Alpha if item deleted = .842

According to the factor analysis, Factor 4 loaded on Item47 (.595), Item31(.432), Item45 (.361), and Item 44 (.335), which are supposed to measure "importance of education." Although the sentence includes "highly" and "at all times", still 57.4% of the respondents agreed, and 17.5% of them strongly agreed. This might show the difference in importance of education and respecting teachers between Confucian and Western societies.

Most responses were normally distributed. None of the responses had both of the values of skewness and kurtosis of greater than |2|. Only Item55 (I will support my children's college education) had the kurtosis value of 2.706, while it had the skewness value of -1.284. Only 3.6% of the respondents disagreed or strongly disagreed. This might be because it might be natural for most parents to support their child's education. Thus, "financially" was added.

Item 54 (College graduation is more important than having a high school job) also had the similar problem. Only 2.6% of them disagreed or strongly disagreed. Thus, "having a high school job" was changed into "my child may learn from a high school job."

2. Changed Items from the Second

6) Parents can not be friends with their children.

It is good that Parents are friends with their children.

11) The father's primary role in child care is to discipline.

Discipline is the father's primary child care role.

18) I would worry if my child does not want to get married.

I would worry if my daughter never married.

20) A man must not be talkative.

A man should not be talkative.

28) Children should always obey their parents without question.

Children should always obey their parents.

30) I expect my employees to always follow my directions.

I expect my employees to follow my directions rather than suggesting new ideas.

31) A career as an educator is far superior to that of a business professional.

A career as an educator is superior to that of a business professional.

33) A person with odd behavior is to be feared.

It is better to be wary of eccentric people.

40) I would rather be normal than be creative and a little abnormal.

I would rather be normal than be creative and a little different.

44) Teachers should be highly respected at all times.

Teachers should be respected at all times.

54) College graduation is more important than having a high school job.

College graduation is more important than what my child may learn from a high school job

55) I will support my children's college education.

I will financially support my children's college education.

DESCRIPTIVE STATISTICS FOR THE ITEMS OF THE SECOND EWPS (N = 411)

Item Number	*M*	*SD*	Skewness	Kurtosis	Corrected Item-Total Correlation	Alpha if Item Deleted
1	2.715	1.135	.344	-.949	.209	.841
2	3.530	.991	-.629	-.216	.210	.840
3	3.820	.935	-.623	.070	.114	.842
4	2.820	1.112	.328	-.822	.154	.842
5	2.995	1.048	-.041	-.866	.377	.837
6	2.891	1.057	.033	-1.037	.169	.841
7	2.813	1.015	.031	-.763	.219	.840
8	2.475	1.083	.443	-.715	.483	.835
9	3.153	.952	-.089	-.561	-.236	.849
10	3.358	1.029	-.530	-.393	.470	.835
11	2.231	.912	.534	-.091	.485	.835
12	3.674	.892	-.782	.423	.060	.843
13	3.693	.926	-.596	-.152	-.035	.845
14	3.662	.932	-.733	.346	.184	.841
15	3.321	.875	-.036	-.221	-.026	.844
16	3.005	1.015	.145	-.721	.309	.838
17	2.372	1.007	.626	-.123	.550	.833
18	3.346	1.092	-.402	-.688	.293	.839
19	2.492	.848	.558	-.003	-.063	.845

20	2.696	.928	.309	-.451	.510	.835
21	3.027	1.099	-.031	-.794	.280	.840
22	2.241	1.018	.715	-.005	.564	.833
23	2.178	.733	.757	.765	.089	.842
24	2.506	.920	.606	-.008	.400	.837
25	3.779	.885	-.826	.821	-.032	.845
26	3.090	.957	-.248	-.591	.175	.841
27	1.939	.921	1.176	1.528	.504	.835
28	2.567	.949	.306	-.499	.519	.834
29	2.915	.998	-.110	-.848	.349	.838
30	2.686	.933	.246	-.402	.313	.838
31	3.105	1.037	-.303	-.643	.168	.841
32	2.139	.780	.654	.693	.281	.839
33	2.628	.942	.295	-.509	.461	.836
34	3.545	1.024	-.615	-.319	.210	.841
35	3.698	.884	-.668	.330	.143	.842
36	2.540	.993	.227	-.713	.259	.839
37	2.635	.912	.360	-.397	.347	.838
38	2.331	.865	.599	-.074	.005	.844
39	3.574	.930	-.648	.209	.249	.840
40	3.041	1.089	.066	-1.023	.387	.837
41	3.766	.886	-.965	.961	.153	.841
42	3.246	.864	-.109	-.275	.301	.839

43	2.506	.922	.366	-.266	.843	.843
44	3.832	.843	-.950	1.335	.842	.842
45	3.173	.928	-.221	-1.005	.838	.838
46	2.608	1.017	.396	-.426	.840	.840
47	3.175	.957	-.256	-.404	.838	.838
48	2.487	.930	.240	-.365	.837	.837
49	1.903	.875	1.133	1.536	.839	.839
50	2.652	.920	.216	-.474	.836	.836
51	2.462	.973	.402	-.393	.833	.833
52	2.384	.801	.453	.192	.840	.840
53	2.085	.905	.763	.404	.836	.836
54	4.273	.708	-1.024	1.864	.841	.841
55	4.209	.790	-1.284	2.706	.841	.841
56	3.243	.942	-.432	-.100	.837	.837
57	2.565	.996	.349	-.551	.838	.837
58	3.280	.898	-.215	-.329	.841	.841
59	2.793	.894	.150	-.335	.842	.842