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# High Abilities and Excellence: A Cultural Perspective

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**The Good Work Project**
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Since 1995, three teams of investigators, under the direction of Howard Gardner, of Harvard University, Mihaly Csikszentmihalyi of Claremont Graduate University, and William Damon of Stanford University, have been researching the ways in which leading professionals in a variety of domains carry out good work. "Good work" is used in a dual sense: 1) work that is deemed to be of high quality and 2) work that is socially responsible. Through intensive, face-to-face interviews, the researchers have investigated several domains, including journalism, genetics, business, jazz music, theater, philanthropy, and higher education. Pilot studies have been conducted of medicine and the rapidly emerging domain of "cyberlaw", with plans to explore these areas more fully in the future.

In addition to this central line of study, several other related lines of investigation have been launched:

1. The Origins of Good Work project is an examination of teenagers who excel in extracurricular activities.

2. The Dedicated Young Professionals Study focuses on those who have just begun (or will soon begin) promising professional careers.

3. Good Work in Interdisciplinary Contexts. Pilot studies of new arts/science media and of the Massachusetts Institute of Technology's Media Lab have been completed. Plans are underway to study interdisciplinary work at the pre-collegiate, college, and research institution level.

4. The Role of Contemplative Practices investigates the ways in which contemplation/meditation influence how professionals carry out work.

5. Encouraging Good Work in Journalism. This project, carried out in conjunction with the Committee of Concerned Journalists, is currently developing a "traveling curriculum" for use in newsrooms around the country.

6. Good Work as Transmitted through Lineages examines how the principle of doing good work is passed down through continuous generations of teachers to students or from mentors to less experienced professionals.

7. Good Work in Other Societies is a project spearheaded by colleagues at Denmark's Royal Danish School of Education that investigates good work in Denmark and Latvia. In the future, additional international components will be added.

The Project expects to issue a variety of books, reports, and related documentation. The present series, launched in early 2001, includes reports on several of the lines of research mentioned above. For further information on the Good Work Project, contact Professor Howard Gardner's office at 617-496-4929, via email at hgasst@harvard.edu, or through regular mail at 201 Larsen Hall, Harvard Graduate School of Education, Cambridge, MA, 02138.

**Papers On Good Work**
**February 2001**

1. The Project on Good Work: A Description (April, 2000), Howard Gardner, Mihaly Csikzentmihalyi, and William Damon.

2. The Ethical Responsibilities of Professionals (July, 1998), Howard Gardner

3. The Empirical Basis of Good Work: Methodological Considerations (June, 1997), Howard Gardner, Anne Gregory, Mihalyi Csikzentmihalyi, William Damon, and Mimi Michaelson.

4. Good Work in Business (August, 2000), Kim Barberich and Howard Gardner.

5. Good Work Among Dedicated Young Professionals (July, 2000), Becca Solomon, Greg Feldman, and Marcy LeLacheur.

6. Contemplation and Implications for Good Work in Teaching (August, 1998), Laurinda Morway, Jeff Solomon, Mimi Michaelson, and Howard Gardner.

7. Good Work in a Complex World: A Cross Cultural Comparison (November, 1998), Hans Henrik Knoop and Howard Gardner.

8. Opportunities and Obstacles for Good Work in Medicine (August, 2000), Jeff Solomon, Jennifer DiBara, Sara Simeone, and Dan Dillon.

9. New Media Art: A New Frontier or Continued Tradition? (January, 2001), Kaley Middlebrooks.

10. The Origins of Good Work (April, 2000), Wendy Fischman and Grace Lam.

11. Good Work among Albert Schweitzer Fellows (April, 1999), Wendy Fischman, Becca Solomon, and Deborah Shutte.

12. High Abilities and Excellence: A Cultural Perspective (2000), Jin Li

13. Interdisciplinary Research and Education: Preliminary Perspectives from the MIT Media Laboratory (January, 2001), Dan Dillon.

14. Good Work in Cyberlaw (August, 2000), Evan Zullow.

15. Getting Kids, Parents, and Coaches on the Same Page (2000), Becca Solomon and Howard Gardner.

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## I. Zhuge Liang--a Chinese Ideal of High Ability and Excellence

When Chinese people find themselves having to rack their brains to solve a challenging problem, they often say to each other "Remember, three cobblers with their wits combined equal one Zhuge Liang!", whereby they gather their strength and courage to embark on the task. By frequent usage of this saying, the Chinese subscribe to the idea that it takes several ordinary folks to replace a highly intelligent, able, wise person.

In a recent survey on who may be regarded as the most creative Chinese individual of the past and present by college students from mainland China, Taiwan, and Hong Kong (Yue, 2000), Zhuge Liang again ranked among the top nominees. Who is this Zhuge Liang that requires three ordinary people to be his equivalent and that also won the high regard of today's Chinese?

Zhuge Liang (or Chukeh Liang) was a real person (A. D. 181-234) who lived during the period of the Three Warring States (A. D. 220-280). Despite his humble background, Zhuge Liang was said to be extremely bright; he pursued knowledge and learning on his own and became a highly esteemed scholar in politics and military studies in his time. His writing is among the permanent anthologies of Chinese literature, and his debates are studied and held in awe by his admirers. He also knew how to observe and forecast weather, invented new weapons, and built vehicles that could transport larger cargoes. Clearly, Zhuge Liang fitted the image of the encyclopedic man. But most

admirable of all was the ability and wisdom that enabled him to assist a royal offspring in establishing an equally powerful kingdom from scratch. Zhuge Liang accomplished this by persuading others to join his force and by using creative strategies (e.g., winning many battles without losing a single man). However, his long-lasting influence cannot be fully understood without considering the non-cognitive side: his moral character and virtue. Legend has it that, being a person of integrity with lifelong dedication to his cause, Zhuge Liang worked until the moment he stopped breathing, handled public affairs with fairness and prudence, appeased conflicts between different ethnic minorities, treated people with respect, sincerity, and humility, and served his country without regard for fame and personal gain. What Zhuge Liang did was so unimaginable that he became an eternal source of inspiration to the Chinese in virtually every area of life for nearly two millennia. Every Chinese adult and child knows who Zhuge Liang is and knows, to varying degrees, what he stands for because his stories are in the classics, in textbooks, and in contemporary media. His image may have been idealized and idolized, but when it comes to what Chinese people think high ability and excellence are, it is predictable that Zhuge Liang will emerge as the definition.

Is this image of high ability and excellence universally acclaimed? Or is it culturally based and therefore uniquely Chinese? These are complicated questions to which no straight answers can be found. In this chapter, I will present an argument that, while high ability and excellence assume universal foundations, culture also has a role to play in how these human qualities are conceptualized and developed. Culture's role is also indispensable in delineating the general realm of what these models might be (LeVine,

1999) and in making these models available to its members. To proceed with this argument, I will first discuss what aspects might be considered common across cultures. Then, I will use primarily Chinese notions and examples from recent empirical data against their well researched and described Western counterparts to discuss possible differences in conceptualization and development of high ability and excellence. I will conclude by suggesting some implications for future research in this area.

## II. Common View of High Ability and Excellence

Any discussion of high ability and excellence in any domain necessarily requires that one first examine the notion of ability and achievement in general. In the West, the most discussed and researched area pertaining to ability and achievement is the notion of intelligence, generally understood to be a person's general mental capacity. This capacity is typically determined by a measured IQ score (Hernstein & Murray, 1994; Spearman, 1927; Terman, 1925). For several decades, though, IQ as a singular concept has been challenged as being limited to logico-mathematical and verbal skills (leaving out other intelligences such as musical and spatial, Gardner, 1983), academic ability (leaving out the practical and the creative, Sternberg, 1985a), and measured individual level (leaving out the cultural, Vernon, 1969). However, despite these different delineations of intelligence, there is hardly any doubt that intelligence is understood as an innate property of the human mind, which enables humans to do many things that are impossible for other species to accomplish (Pinker, 1997).

But the scholarly debate pertaining to intelligence is, for the most part, not centered around differences between species, but among individuals and the often problematic comparisons among cultures and groups (Irvine & Berry, 1987, Neisser et al., 1996; Lynn, 1987; Rushton, 1989). Thus, the notion of high ability inevitably involves different levels of intelligence on a hierarchy, however it might be defined (e.g., a higher IQ score and a larger or faster memory). And the existence of giftedness, prodigies, talents, and extraordinary abilities that are recognized across cultures (Feldman, & Goldsmith, 1991; Gardner, 1983, 1993; Winner, 1996) makes it difficult to ignore individual differences in intelligence.

The concept of achievement, especially academic achievement, is also intimately related to the notion of intelligence because schooled knowledge both requires and further results in adept mental functioning as valued in the West (e.g., abstract reasoning, which underlies much of the decontextualized learning in school, Gardner, 1991; Olson, 1994; Perkins, 1981). It is no wonder why the idea of "ability" (used largely interchangeably with "intelligence") is so much an integral part of research on academic achievement (Bempechat & Drago-Severson, 1999; Covington, 1992; Dweck, 1999; Nicholls, 1976, 1984; Ogbu, 1981; Stigler & Stevenson, 1992, Stevenson, Hofer, & Randel, 2000; Stipek, 1988). Naturally, for some level of achievement to be regarded as excellent, it has to rank high on the achievement continuum of established measures such as various school achievement tests, aptitude tests, and other similar tools used to determine local or national honors.

To be sure, high ability and excellence in the West are not limited to the school context. In fact, there is a large body of research on individuals who have extraordinary achievements in various fields of expertise such as art, music, science, and technology as well as professions of practice such as business, education, and institutional leadership (Gardner, 1993; Csikszentmihalyi, 1988, 1994; Gruber, 1981; Simonton, 1984, 1988). Here, in addition to intelligence, we encounter a great deal of attention also to individuals' personality traits. Research on creativity, for example, is replete with analyses of personal characteristics such as risk-taking, iconoclasm, high motivation, perseverance, even one's need to be in solitude (Barron, 1969; Ghiselin, 1963; Guilford, 1959; Storr, 1989; Torrance, 1962).

The social environment in which high ability and excellence occur has also been examined. Here, scholars study the nature of social support (micro-level) that children receive from their homes, school, and other adults (Amabile, 1983; Arnold, 1995; Csikszentmihalyi & Rathunde, 1998; Gottfried, Fleming, & Gottfried, 1998; Wachs, 1992). For example, Csikszentmihalyi documents Nobel laureates in various fields reporting that as children they lived in intellectually stimulating homes where their parents encouraged them to explore the world (Csikszentmihalyi & Rathunde, 1998). A related approach is to the larger sociohistorical milieu (macro-level) that helps to shape environments such as scientific or other intellectual paradigms, political climate, and zeitgaist (Gardner, 1993; Holton, 1973; Kaplan, 1963; Kuhn, 1970; Li, 1997; Taylor & Barron, 1967). Scholars generally agree that the social environment does play an important role in providing the opportunity for high ability and excellence to flourish.

Taken together, there seem to be three main foci of the Western view of high ability and excellence. The first and the foremost is the attention to the mental, the cognitive, where the mind assumes supremacy over other domains of the human existence such as the affective, the social / moral, or the purposive. Research concentrates on human mental capacities and their functions in human lives. The second focus is on personality traits. The superior mental capacity and its prowess coupled with unique personality profiles enable individuals to develop high ability and to achieve excellence in whatever domain they choose to pursue. The third, perhaps relatively less contemplated, is the sociohistorical setting necessary for fostering individuals' high ability and excellence (Csikszentmihalyi, 1988, 1994; Gardner, 1993). These three areas may turn out to be universally necessary for developing high ability and any genuine achievement across cultures. On the one hand, every human being, regardless of his or her culture, possesses a certain degree of intelligence, is a unique person with his or her personality profile, and lives in a web of social settings and contexts (Bronfenbrenner, 1979; Cooper & Denner, 1998). On the other hand, there are domains in which standards for determining high ability and excellence are also commonly shared across cultures, such as Nobel Prizes, international Olympic math achievement, and other international evaluations for human achievements. And these common aspects must be examined.

However, the mind, and personality traits, and the general sociohistorical context do not fully explain the phenomenon of Zhuge Liang, particularly his time-honored acclaim among and inspirational effect on the Chinese. Nor would he be likely to

qualify for an international prize of any sort. Throughout Chinese history, there have been numerous individuals that are regarded as equally if not more intelligent when viewed from the tradition of the West. These include recorded prodigies as well as accomplished individuals, not to mention the renowned contemporary of Zhuge Liang, the 6-year old Cao Pi, who proposed a remarkable solution to the problem of weighing an elephant without a giant scale (by having the beast stand on a boat in order to mark the water level first, then filling up the boat with pebbles to the same water level, and weighing the pebbles a sack at a time with a regular scale last!). Zhuge Liang's versatile talent was also matched by many others such as the poet Su Dongpo who not only stands on the pedestal of Chinese literature but who also invented new methods to produce ink and created new gourmet food, which is still widely popular today. Sociohistorical contexts provided opportunities for even more individuals to emerge as honored personages in countless fields. These other people with superior intelligence and accomplishments may be admired by many Chinese, but they do not represent cultural ideals of high ability and excellence as comprehensively and singly as Zhuge Liang does. To fully appreciate the phenomenon of Zhuge Liang, the specifics of the culture must be considered.

Thus, even though culture is related to sociohistorical aspects, it is not identical to them. It may offer a unique window for understanding the topic under discussion.

## III. The Cultural Lens

Research on cultural differences with regard to high ability and excellence is regrettably scarce. But within the research on the general notion of ability and achievement, one encounters predominately etic research perspectives, that is, theories and research methods based on Western subjects but applied directly to subjects in other cultures without consideration of their own views. Attempts have been made, for example, to identify among preliterate cultures indicators of children's formal cognitive ability from their daily activities (Munroe & Munroe, 1971; Nerlove, Roberts, Flein, Yarbrough, & Habright, 1976). Similarly, indigenous conceptions of intelligence have been scrutinized in order to advance the argument that non-Western cultures such as the Chinese can measure up to the West (Chan, 1996). Achievement motivation, another concept from the West, has been claimed to be less present in many non-Western cultures (e.g., the Latino, the Indian, and the Chinese). This has been attributed to their lack of the sense of individual independence, which was once regarded as the determinant of achievement motivation (McClelland, 1961, 1963; Suárez-Orozco & Suárez-Orozco, 1995).

Admittedly, the etic perspective is bound to occur because it is inevitable and perhaps also desirable when cross-cultural research is to be conducted (Munroe & Munroe, 1979, 1997; Romney, 1994). However, this research orientation alone, while possibly uncovering some universal trends, may be limited in that it neglects significant cultural differences (D'Andrade 1990, 1995; Harkness & Super 1996; Quinn & Holland,

1987; Shweder, 1997; Shweder & Sullivan, 1993). This widespread etic tendency has been challenged by anthropologists and cultural psychologists (D'Andrade, 1995, Goodnow 1976, 1998; Li, 2001, Serpell, 1993; Super, 1983). These scholars argue that in order to do full justice to cultural differences, it is equally important to include emic perspectives, that is, indigenous or folk views from the members of the culture under study (Sternberg, 1985b; Yang & Sternberg, 1997).

Research tapping emic understandings not only addresses validity problems that may be associated with many cross-cultural research findings, but it also shows how they tend to be inveterate, not easily subject to alteration despite extensive exposure and study of more scientific ways of thinking (Calderhead, 1996; Bruner, 1996; Gardner, 1991; Strauss, Ravid, Magen, & Berliner, 1998). Because of their deep-rooted nature, such beliefs have been shown to guide reliably and systematically people's behavior, including the very childrearing and socialization processes that foster competence and achievement (Brunner, 1996; Chao, 1996; Harkness & Super, 1996; Strauss et al., 1993).

But rather than viewing these emic models as inadequacies or impediments categorically, it may be important to distinguish two types of emic understandings. The first is the widely noted "naïve theories" of children about various domains (e.g., scientific phenomena, DiSessa, 1982; Gardner, 1991; Perkins, 1995), to which beliefs held by illiterate adults (e.g., classification of objects by people's daily activities instead of a scientific taxonomy, Luria, 1976) may arguably belong. These are labeled naïve because they run counter to tested scientific knowledge, which, as dictated by

educational aspirations, we would hope, will be altered as children are schooled further (Gardner, 1991, 1999).

However, the second type of emic understandings, or folk models, concern accumulated cultural experiences, ways of thinking, feeling, and behaving, and wisdom (Sternberg, 1985b, this volume) into which children are, to varying degrees, enculturatred (LeVine, 1990). Folk models of this type are not well researched in general (with perhaps the exception of parental beliefs about childrearing, Chao, 1996; Harkness & Super, 1996; Hollos, in press). Unlike naïve views about scientific phenomena, folk models of many areas in child development are likely to have varied functions with some not so adaptive but with others highly advantageous within particular cultures (e.g., US and Chinese cultural conceptions of learning, Li, 2001, under review). High ability and excellence may be one such area where emic models may be crucial in illuminating how children develop and achieve these abilities and levels of excellence.

Thanks to anthropological research, folk models of intelligence have indeed been shown to differ from culture to culture. Rather than the more cognitive and mental notion and verbal skills typically emphasized in the West, African conceptions of intelligence, for example, emphasize wisdom, trustworthiness, social attentiveness and responsibility, (Dasen, 1984; Serpell, 1993; Super 1983; Wober, 1974). Differences also exist among various ethnic groups within the US. For instance, Sternberg (1985b) documented differences between “implicit theories” (a similar notion to folk models) of intelligence, creativity, and wisdom versus formal notions of these concepts. Moreover,

Okagaki and Sternberg (1993) further showed that Latinos emphasized more social-competence in viewing intelligence than their Anglo counterparts. These exemplary efforts have charted new territories in research on cultural models of high ability and excellence.

In what follows I will draw on existing literature and my own research on Chinese cultural conceptualization of high ability and excellence to show what these culture-specific meanings might be and how they may guide children in developing these skills.

## IV. Research on Chinese Conceptions of Intelligence and Excellence

Even though much research has recently been done to explain the phenomenon of higher academic achievement among Chinese school children than their Western peers (Biggs, 1996; Stigler & Stevenson, 1992; Stevenson et al., 2000), little research exists on Chinese high ability and excellence beyond school performance in math and science. An earlier attempt to explore the Chinese concept of intelligence reported (Keats, 1982) that Chinese view an intelligent person to be one who is "responsible, pragmatic, socially oriented … who gets things right. He observes and memorises but he is not an enquiring mind nor a critical faculty" (p. 73, cited in Berry, 1984). However, a more recent study (Zhang & Wu, 1994) collected a set of Chinese attributes of intelligence such as logical reasoning, accepting new things, creativity, independence, and even a sense of humor. Most recent research examining conceptions of intelligence among Taiwanese Chinese by Yang and Sternberg (1997) found additional notions: Chinese people think that an intelligent person seeks knowledge and learning while cultivating his or her moral character. These latter dimensions of intelligence have not been well tapped in previous research on any cultural groups.

In an attempt to examine emic perspectives on Chinese views of intelligence in the domain of learning (rather than in general) and its origin, as well as Chinese views of excellence of learning and its origin, I collected written descriptions of these respective ideas from 62 Chinese college seniors (Li, 1997, in press). By using established prototype research methods (Horowitz, Wright, Lowenstein, & Parad, 1981; Shaver,

Schwartz, Kirson, & O'Connor, 1987), I tallied frequencies higher than 20% across the subjects (see details of analysis in Li, 1997, in press). Out of all the possibilities, the following five attributes were named as the core ideas about intelligence in learning: personal effort (32%), inherent ability (23%), possession of knowledge (21%), thinking ability (21%, e. g., good mind, reasons well), and mental agility (20%, e. g., think and react fast). Subjects' conceptions of excellence in learning also converged on four ideas: application of knowledge to solving problems (42%), high academic achievement (37%), mastery of knowledge (32%), and creativity / breakthroughs (28%).

When asked to reveal their thoughts on where one's intelligence originates, subjects identified "factors after birth" (42%, e. g., home and other social environment) and a combination of inherent ability and factors after birth (28%). But 84% of subjects' responses with regard to origin of excellence referred to diligence, hard work, and perseverance on the one hand and use of effective learning methods (24%, e. g., read newspapers) on the other.

Recently, my colleague and I (Li & Yue, forthcoming) are conducting a follow-up study with a sample of 1806 Chinese children aged 10 through 17 ($5^{th}$-$10^{th}$ graders from six regions of China living both in the city and rural areas) on how they think about intelligence and excellence of learning. Based on analysis of 80 subjects' responses thus far, we found similar themes in general. For example, with respect to intelligence, the most frequently named conception was a well-functioning mind or mental agility (54% of all subjects, e.g., a clear or quick mind), followed by a high IQ level (18%), thinking ability (17%, e.g., being reflective), application of knowledge to solving problems (16%),

insight, wisdom, and originality (15%), and good learning attitudes (14%, e.g., diligence and conscientiousness). Moreover, these conceptions did not seem to show any developmental trend across the age range examined. The only exception was the "ability to understand things" (28%), where more children named this conception the older they were (i.e., while no 5th graders mentioned it, the number of children mentioning it increased with age: 18%, 21%, 31%, and 46% corresponding to 6th, 7th, 8th and 10th graders respectively).

When explaining where one's intelligence originates (causal attribution), children also gave responses similar to adults. Again "one's personal effort" (e.g., everyday hard work) ranked as the top cause (71%) followed by a "combination of inherited potential and influence after birth" (43%) and "social engagement in learning (19%, e.g., interaction with people and observing social activities). Very few children named inherited ability alone as a cause (4%). Developmentally, while "personal effort" seemed to be a shared understanding across the ages, the number of children expressing the combination view (of inherited potential and influence after birth) increased with age (18%, 30%, 45% 29%, and 64% in the above grades respectively). In addition, whereas children below 7th grade did not mention "social engagement" at all, their peers above this grade level recognized it similarly in frequency across the remaining ages.

With regard to excellence of learning, three similar (to adult notions) main conceptions again emerged: High academic achievement (90%), mastery (in breadth and depth, and good judgment) and application (including creative application) of

knowledge (23%), and high moral and virtuous character (21%). Moreover, neither "high academic achievement" nor "high moral and virtuous character" showed any developmental trend, indicating that these conceptions of excellence may be well understood among these children of different ages. But "mastery and application of knowledge" while not mentioned by 5th and 6th graders at all, showed a steady increase starting with the 7th grade (20%, 31%, and 76% in 7th, 8th, and 10th grade respectively).

In terms of origin of excellence, we also saw the repeated nomination of a set of eight related ideas termed "essentials of learning attitude" by 90% of subjects: (1) self-resolve, (2) love for learning, (3) diligence, (4) endurance of hardship, (5) practice, (6) perseverance, (7) conscientiousness, and (8) humility. Among these component ideas, diligence and endurance of hardship were most frequently named (48% of all entries). These ideas did not seem to differ across the age groups.

The above research findings indicate that Chinese adults and children see intelligence for the most part as a domain of mental functioning, with some also viewing the ability to apply knowledge and to solve problems as a component of it. In addition, older children endorse the idea of the ability to understand things. However, the vast majority name high academic achievement as the definition of excellence of learning, while a number of them also included mastery of knowledge and insight / wisdom / creativity on the one hand and high moral character on the other. Furthermore, these same people also attribute the origin of intelligence and excellence mostly to one's personal effort with the elaborated essentials of learning attitude and behavioral implications. Finally, inherited potential, albeit not singularly but in

combination with environmental influences after birth, is also viewed as a part of intelligence, but rarely a part of excellence.

Interestingly, these findings do not seem to correspond well to the descriptions by Keats (1982), especially his assertion that the intelligent Chinese person "observes and memorizes but he is not an enquiring mind nor a critical faculty". One then wonders about the notions of the "ability to understand", "application of knowledge", and "insight, judgment, and wisdom" found in the present study and remains puzzled as to how these abilities and their manifestations in real life are possible without an inquiring mind and a critical faculty. Additionally, while some of our findings do seem to overlap with a few attributes of intelligence derived by Zhang and Wu (1994) more recently (e.g., logical reasoning, and accepting new things,), "a sense of humor" was never present in our data.

However, juxtaposing these findings on intelligence with Western implicit views such as those documented by Sternberg (1985b), one can actually see more overlap (than the results from the above research designed to investigate Chinese conceptions of intelligence). For instance, both Americans and Chinese share the mental dimension (e.g., thinking, IQ level, understanding), "practical problem solving", and "contextual intelligence" (Chinese ideas in the dimension of "insight/judgment/wisdom" and of "social engagement" are similar to this US category). It is therefore warranted to conclude that these conceptions may be the ones likely to be regarded by people from at least these two cultures as the essential dimensions of intelligence.

Despite these similarities, there are dimensions on both cultures' lists that do not seem to resemble each other. For example, the US "verbal ability" rarely, if at all, came up in the Chinese conceptions. Likewise, the Chinese "essentials of learning attitude", a largely self-as-agent and affective dimension as a cause for both intelligence and excellence, and the peculiar emphasis on factors after birth being the off-setting force (for inherited potential) in the formation of one's intelligence are absent from Sternberg's comprehensive list. The most striking difference of all is perhaps the presence of the Chinese "high moral and virtuous character" as one of the three core conceptions of excellence. Even though these dimensions were not part of Sternberg's (1985b) US implicit theories of intelligence, our latter finding did confirm one key result in the most recent research by Yang and Sterngberg (1997): Chinese people think that an intelligent person seeks knowledge and learning to cultivate his or her moral character.

These differences may be the more culturally specific dimensions that are also a constituent part of each culture's core conceptions without which our understanding of intelligence would be incomplete. These undoubtedly need further analysis. For the purposes of this chapter, I will focus on aspects of the Chinese understanding of intelligence in the next section, instead of delving into that of the US in order to illustrate how we might continue the examination of culture regarding the topic under discussion.

## V. Why Zhuge Liang Matters to the Chinese

As stated above, the mental dimension may be shared widely across culture, but in the ethos of this volume, culture-specific aspects of high ability and excellence may be best characterized as factors of "extracogntion" that are interwoven with the mental. In the case of Zhuge Liang, it is perhaps these Chinese "extracognitive" values and processes that nurtured Zhuge Liang in the first place as well as ensured his impact throughout Chinese history.

The findings on "seeking knowledge"," cultivating one's moral character", and the "essentials of learning attitude" from our research (Li, 2001; in press, Li & Yue, forthcoming) as well as those of Yang & Sternberg (1997) reflect interrelated aspects of both life purposes and developmental processes of Chinese lives. And these are core notions that Confucius and his admirers used to guide their lives (Tu, 1979, Wu & Lai, 1992). Accordingly, the highest purpose of life is self-perfection (therefore "cultivating one's moral/virtuous character"). Human perfectability is envisioned as obtainable by everyone so long as one seeks it through the process of self-cultivation. Learning or "seeking knowledge", broadly construed, is of paramount importance in the process of self-perfection because it is seen as the only way self-perfection is possible (Lee, 1996, Tu, 1979, Wu & Lai, 1992). However, since there is no end to self-perfection, learning becomes a lifelong dedication and is to be pursued with all effort humanly possible, thus the "essentials of attitude toward learning" (Li, 2001; in press).

This particular construal of life and its developmental processes are understood in common folk parlance as "zuoren", literally, becoming a person. Based on the analysis

by Tu (1979), an esteemed scholar on Confucian thought, the "person" here is not merely a human in the biological sense but a fully encultured and cultivated existence. In the Confucian aspiration, this person is one who is always in the process of becoming the most genuine, sincere, and humane ("junzi") as he or she can be. Instead of reaching an endpoint of maturity, this person is, at any point of life, capable of further maturing and ideally strives to do so. In short, seeking zuoren (engaging oneself in the process of self-perfection) is in fact tantamount to junzi. Even though this Confucian ideal of a person is an ancient idea, research attests to its unfailing appeal to today's Chinese (Li, in press, Li & Yue, forthcoming).

In order to provide a sense of what zuoren means to today's Chinese children, we performed a preliminary analysis on the responses to our probing in the same study being conducted by Li and Yue (forthcoming). We have identified seven categories of meanings of zuoren: (1) Pursuing fulfillment of life, (2) self-strengthening without ever stopping, (3) developing high moral / virtuous character, (4) seeking knowledge, (5) maintaining harmonious social relations, (6) striving for a successful career, and (7) contributing to society.

Under the umbrella of "pursuing fulfillment of life" (1st category), our subjects also expressed ideas such as searching for happiness, finding meaning, and doing things one enjoys. Traditionally, this category is understood as going beyond the satisfaction with meeting one's basic survival needs, to taking an interest in the larger world. This outlook includes all areas that the world has to offer such as the arts, science, social

sciences, philosophy, current affairs, traveling to places, and so forth whereby one finds a niche to connect one's life to the larger universe (Liu, 1973).

"Self-strengthening without ever stopping" (ziqiang buxi, 2nd category) is a phrase that Chinese people take from I Ching (The Book of Changes, one of the Five Classics[1], all scholars were traditionally required to study) to draw inspirations for lifelong self-cultivation. The meaning of this phrase charts the course of life a junzi (the most genuine, sincere, and humane person one can be) shall take. Chinese have long sought to draw strength from the natural universe and to regard one's existence similarly to the unceasing process of renewal of nature. As the Book of Changes (Wang, Li, & Zhang, 1998) states: "The universe is strong, renewing itself ceaselessly; a junzi shall follow it, self-strengthening without ever stopping". The Chinese embrace of this self-strengthening process is quite sensible considering that the ultimate purpose of one's life is to self-perfect.

The next category (3rd category), "developing high moral / virtuous character", pertains to the Confucian emphasis on character building. To be sure, what constitutes a person's moral / virtuous character in this context is not the same as any free-standing set of universal moral rules such as those proposed by Kohlberg (1976), but a set of values specific to Chinese culture. A person with moral / virtuous character, accordingly, possesses not only the fundamental ability to discriminate right from wrong; but also a broad set of virtues. The cardinal virtues--sense of propriety, justice, integrity, sense of honor and shame, loyalty, filial piety, love and respect for one's siblings, and trust for friends--address the basic elements of moral conduct (Mencius,

1970; Tu, 1979; Wu & Lai, 1992). The notion of virtue is also extended to include prudence, frugality, diligence, a heart and mind for wanting to learn, and one's daily words and deeds, such as not holding an old grudge, going out of one's way to help others, and so on. Self-perfection is defined in these terms and dimensions (Tu, 1979; Wu & Lai, 1992).

As stated above, "seeking knowledge" (4th category) is part and parcel of Confucian life purpose and process (Lee, 1996, Li, 2001; in press; Wu & Lai, 1992). My recent study on Chinese and US learning models reveals large differences in how members of these two cultures view learning (Li, under review). Briefly, while the US model seems to stress a "mind" orientation, the Chinese model favors a "person" orientation. Because seeking knowledge is so central to the lifelong personal endeavor toward self-perfection for the Chinese, there is little wonder why Chinese adults and children time and again nominate this aspect as an essential part of their lives (Li, 2001; in press; Li & Yue, forthcoming; Yang & Sternberg, 1997).

As can be seen in the discussion of "developing high moral/virtuous character", much of the Confucian value system stresses "maintaining harmonious social relations" (5th category) as a major life task. Inevitably, to pursue self-perfection also means to develop the understanding and skill required for harmonious social interactions within one's family as well as one's larger social world. Individuals who succeed in cultivating themselves in this regard respect their parents (filial piety), admit their weaknesses and the need to further self-improve instead of pretending to be more than what they are (humility), are sincere in their dealings with others, hold high standards of bringing

honor to the collective (gratitude for their nurturance) while possessing the heightened sense of correcting their wrong doings (shame), and reciprocate (have empathy) with others. These and many other areas of social relations are areas for self-improvement in daily life (Tu, 1979; Yu & Yang, 1994).

Related to the junzi ideal is "striving for a successful career" (6th category). Here also lies a deep Chinese sense of personal agency and personal accomplishment. Unfortunately, previous research has produced the widespread claim that Chinese individuals lack the notion of self as an individual and a sense of agency, due to the so-called collectivist orientation of Chinese culture (Hui, 1988; Hui & Triandis, 1986). This one-sided emphasis on collectivism may make Chinese "striving for a successful career" appear to be antithetical to Chinese social orientation of selves. But our current (Li, Yue, & Yuan, 2001) as well as previous research (Li, 1997) tapping emic views has enabled us to discover many indigenously Chinese conceptions of self that unequivocally point to oneself striving for a successful career (e.g., individual effort). Junzis do not only own their independent inner voices of morality and virtue ("shendu"), but they also exert their utmost effort to be self-sufficient socioeconomically. Even though as a principle junzis seek to maintain their deep roots in their social world, their sense of honor, respect, and gratitude for the social support (that nurtured their development) prevent them from becoming a burden to family, friends, community, and society. This self-sufficient emphasis is also reflected in the notion of "self-strengthening without ever stopping" where giving up on oneself is not a real option.

Finally, "contributing to society" is an unambiguously resounding goal throughout the history of Chinese people. Contributing one's knowledge and skill back to society has been a consistent call of the Confucian junzi, which is the ultimate purpose of self-perfection. A person is not regarded as a true junzi without understanding his or her need to contribute to society what his or her people gave him or her in the first place. In light of this purpose, individual efforts towards self-perfection are not just recycled within the individual but are tied to the commonwealth for all (Lee, 1996; Li, 2001; in press; Tu, 1979; Wu & Lai, 1992; Yu & Yang, 1994).

It is surprising how similar these purposes and processes are to the age-old articulation of a junzi's life course as stated clearly in the Book of Great Learning[2]: "cultivate oneself, organize one's family, order the affairs of the state, and bring stability and peace to the world" (Wu & Lai, 1992). Accordingly, the Confucian ideal image of a person starts out with him or her developing aspirations, learning, working hard, doing all he or she needs to do in order to self-cultivate. The next task is to understand and obtain the most fundamental human relationships, those found in each individual's family, between husband and wife, between parents and children, between siblings, and between the core members of the family and their extended relatives. Having accomplished these two tasks, one is to be entrusted to serve one's community. As a final goal, the person is to take on the greatest task of serving humanity as a whole. It is believed in Confucian persuasion that those who lack self-cultivation may have great difficulties in developing satisfying relationships within their families. Those who fail to maintain harmonious social relationships are also unlikely to have the moral

strength and dedication to serve people in the larger community. In the end, those who are deficient in all of these major life areas cannot stand up to the task of serving humanity as a whole despite their superior mental skills and charming personalities. Even though the specific wordings differ, the essential gist of the Confucian zuoren resonates in the beliefs of today's Chinese children, suggesting that these goals are very much alive and are likely to be actively pursued by them.

The Confucian junzi has been an inspirational guidepost for Chinese people throughout history, perhaps because it offers something profound in the face of the limitations of human existence. Since it encourages them to search for meanings beyond their individual and small social worlds (family) into the larger world via the process of lifelong self-perfection, individual lives may be fulfilled, thus allowing people to experience a sense of psychological and spiritual extension. Therefore, it is not too far-fetched to suggest that the ultimate appeal of the Confucian junzi and zuoren may reside in the delicate symbiosis between a sense of self as an agent and a deep social connection; together they may serve to prolong one's physical and psychological existence (Tu, 1979; Wu & Lai, 1992).

Although these are deeply held aspirations of Chinese people, their attainment is by no means automatic. In fact, as Chinese history shows, very few individuals have been deemed to have reached all of these goals. And those few individuals, including Confucius himself, are undoubtedly esteemed as displaying excellence of the highest order and are thus upheld as models called "sages" for younger generations to learn about and to emulate.

It is against this background that Zhuge Liang, or the idealized image of him, must be seen. His image is one that first and foremost represents the full realization and embodiment of these Chinese life goals and processes. He was indeed an exemplar in every life task as envisioned by Chinese sages. To highlight the particular balance between his superior intelligence and creativity and his exemplary moral courage, one of Zhuge Liang's feats is worth retelling: Upon learning that a general from his enemy kingdom known for his indecisiveness was approaching a town which Zhuge Liang was guarding with only a few men, Zhuge Liang suddenly came up with a strategy for repulsing the enemy. He ordered to have the town deserted, leaving the town gate widely open with only a few old men pretending to clean the streets. He himself sat atop the town wall playing a calm tune on his harp. When the general with his army arrived, he indeed became suspicious of the tranquillity of the town. Instead of charging into the town, he retreated. This "strategy for repulsing one's enemy" became known as the "empty town strategy" and became a legend because Zhuge Liang used his brilliant mind to find a creative solution to an impossible situation. He succeeded in saving the town without losing a single man. But there was no doubt that he also put the lives of his people and men above his own life and displayed moral courage as well as a high sense of duty.

Zhuge Liang represents the best possible combination of the cognitive and the "extracognitive", turning the once imagined Chinese ideal into a reality. This reality, once born, not only reaffirms the value of self-perfection, but it also sets a specific model for what the actual process of self-perfection looks like. This existence

undoubtedly illuminates what the Confucian junzi and zuoren together with one's mental power can be. Perhaps, this is how Chinese culture retains its vitality as a whole and how its people continue to strive forward despite frequent social, political, economical, and other incomprehensible challenges throughout its history.

## VI. Conclusion

In this chapter I have reviewed literature on intelligence and excellence and argued, as have many cultural psychologists, that the etic perspectives alone may fall short of explaining the nature of human high ability and excellence. Emic perspectives are equally important for any empirical research and theory on this topic. Without a doubt, the universal factors such as the biological existence of the brain, the basic functions of the human mind, personality traits, and the general social context need to be examined. But culture also has an indispensable role to play in shaping the conceptions and the development of high ability and excellence, and therefore its role must be investigated as well. To illustrate how we may be better informed about the role of culture, I presented some new data from my own research as well as drew on related findings from other studies on indigenously Chinese conceptions about intelligence, ability, and excellence. I concluded that, in the case of Chinese culture, the existence of high ability and excellence cannot be sufficiently understood without considering the fundamental life purposes and processes of the culture (Lee, 1996; Li, in press; Yu & Yang, 1994).

As a general implication from the above analysis, I hope to suggest that individuals in particular cultures who develop high ability and achieve excellence are, far from

popular belief, not isolated phenomena or results of mere individual brilliance and processes. Like the magical Zhuge Liang, these great individuals do not arise above their culture but are deeply embedded in the cultural values and processes that nurtured them and allowed them to flourish in the first place. Their accomplishments, if deemed essential to their culture, will continue to nurture and shape younger generations.

Despite a growing consensus regarding emic perspectives, there is, regrettably, still a dearth of empirical investigations on cultural differences in this area. To begin thinking about how we might fill this gap, I will venture to discuss a few directions. First, I would argue that emic meanings shall remain essential in any research on cultural differences. As research in anthropology, cultural psychology, and in some circles of mainstream psychology has shown, members of different cultures not only think differently about intelligence and excellence, their conceptions are often intricate and complex (Azuma & Kashiwagi, 1987; Okagaki & Sternberg, 1993; Serpell, 1993; Super, 1983; Yang & Sternberg, 1997; Wober, 1974). Moreover, these folk models have also been shown to influence people's actual behavior (Strauss et al., 1998). Our own studies also confirm this general finding (Li, 2001; in press; under review; Li & Yue, forthcoming). If our goal is to explain intelligent behavior and excellence and to foster such optimal outcomes of development (Csikszentmihalyi & Rathunde; 1998), we also need to include the actual context in which such behaviors occur. Unequivocally, culture is an essential part of the context.

Second, while investigating a single culture has unquestionable value, comparative perspectives are also needed. Many researchers (e.g., Markus & Kitayama, 1991; Shweder, Mahapatra, & Miller, 1990; Yang & Sternberg, 1997) have demonstrated the advantage of these perspectives in that they generate more informative research results. My own research examined Chinese conceptions first, but without analyzing the data against Western findings. Under comparative scrutiny, many more ideas and processes have emerged, better illuminating the similarities and differences between the two cultures.

Third, intelligence and excellence have traditionally been studied more as domain-general phenomena that can be applied to all human activities and areas of human endeavor. Research of this orientation has produced and will continue to produce important knowledge. However, recent advancement in research also points to the importance of domain-specific high ability and excellence (Li, 1997, Gardner, 1993; Csikszentmihalyi, 1994; Feldman & Goldsmith, 1991; Gruber, 1981; Winner, 1996). A balance of the two somewhat opposing research orientations may be more beneficial. It is difficult to maintain, for example, that general, integrated mental capacity and functioning are not worthy of research. Moreover, our own as well as others' research on cultural views has shown that people do share beliefs and ideas about the general notion of intelligence and excellence (Li & Yue, forthcoming, Sternberg, 1985b). Consider the notions of "versatility" of talent and the "encyclopedic" mind that exist in both the West and other cultures such as China. These shared notions are indicative of the wide recognition and appreciation of an integrative view of intelligence and

excellence by people from different cultures. Still, the above notwithstanding, there is no reason why specific values and processes associated with common domains (science, art, literature) as well as culturally specific domains (e.g., Guatemalan weaving, Greenfield, 1984, and martial arts in the East) should not also yield unique insight into human high ability and excellence.

Finally, the area that is probably most uncharted is the development of high ability and excellence. From existing research, it appears that cultures the world over recognize and value individuals with these qualities however they may be defined in their own cultural contexts. It also appears to be the case that cultures make an effort to foster these qualities in their young. Therefore, it is crucial to examine how such abilities and qualities are developed from childhood to adulthood or from the novice-state to expertise within various domains regardless of age. In light of this volume's focal theoretical frame, research has indeed much to gain from investigating the "extracognitive" aspects in terms of development.

With these and other possible directions, we can better hope to narrow the gap of knowledge in this area, to foster deeper understanding and appreciation among cultures, and ultimately to help our young to realize their potential in full, perhaps becoming the Zhuge Liang of their own culture.

## *Notes*

1. The other four are The Book of Song, The Book of History, The Book of Rites, and The Spring and Autumn Annals. The authors of these books have been subject to historical debates for centuries. Many scholars agree that these ancient classics were not written by single but numerous authors throughout Chinese history. See Wu & Lai, 1992 for an introduction and complete translation of these books into modern Chinese.
2. This is one of four books that are also part of the traditionally required readings for Chinese scholars: The Great Learning, The Doctrine of the Mean, The Analects of Confucius, and Mencius. Like the Five Classics, the authors of the books were most likely not single individuals but many who participated in writing, editing, and compiling them throughout Chinese history (Wu & Lai, 1992).

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