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Unforgiving Confucian culture: A breeding ground for high academic achievement, test anxiety and self-doubt?

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ABSTRACT

This paper reviews findings from several studies that contribute to our understanding of cross-cultural differences in academic achievement, anxiety and self-doubt. The focus is on comparisons between Confucian Asian and European regions. Recent studies indicate that high academic achievement of students from Confucian Asian countries is accompanied by higher levels of anxiety and self-doubt. After examining method, measurement, and context explanations of these findings, I argue that the culture of people living in contemporary Confucian Asian countries might be the driving force behind the combination of high achievement and negative psychological outcomes. Although forgiveness is a part of Confucian philosophy, people from modern Confucian Asian countries appear to be less forgiving than Europeans — i.e., they tend to disagree with statements that express toughness, maliciousness, and proviolence less strongly than Europeans. This relatively unforgiving attitude, coupled with the belief that effort rather than ability is the primary source of success, may be able to explain both high achievement and high anxiety and self-doubt among Confucian Asian students.

The aim of this paper is to bring together three related but hitherto somewhat separate areas of cross-cultural research, namely, studies of: a) educational achievement in cognitive domains; b) students' background variables that are non-cognitive in nature but have been found to be educationally important; and c) a broad range of non-cognitive and personality measures that are not part of a typical educational arsenal but are known to differ across cultures. International comparisons of academic achievement have been conducted for several decades now: the main findings from recent international assessments will be summarized briefly in the following section. Studies that link academic achievement to background variables are also not new, but in recent years there has been increased interest in this area of research. Finally, recent cross-cultural studies of personality, social attitudes, values and social norms seem to contain plausible clues as to the reasons for high anxiety and self-doubt in some high-achieving countries.

The focus of this paper will be on comparisons between Confucian Asian and European countries. House, Hanges, Javidan, Dorfman and Gupta (2004) provide justification for classifying all countries in the world into ten "societal clusters" or world regions on the basis of language, religion, geography, ethnicity and work-related values and attitudes. House et al. (2004) classification was based in part on Inglehart's (1997) use of World Value Survey data. In that work, a culture is defined with respect to the empirical evidence showing that a group of countries have a common worldview. Inglehart (1997) employed factor analysis to determine the dimensionality of the space and a clustering procedure to group countries into world regions. All European counties will be referred to as European even though both House et al (2004) and Inglehart (1997) provide further subdivision of this continent. For example, one of the groupings of countries by Inglehart (1997) is labeled as Catholic Europe. It is important to keep in mind that Confucian Asian countries represent a world region with unique cultural features relative to other societal clusters. Confucian teachings are a part of this culture in the same way as Catholicism is a part of Latin American societal cluster (see Inglehart & Carballo, 1997). In other words, as used in this paper the label Confucian Asian refers to a geographic region with common cultural ties (i.e., a common worldview) that is distinct from, say, the Southern Asian societal cluster. In fact, I point out later on in this paper that perhaps it is possible to argue that recent historical and economic pressures in the region have led to the emergence of beliefs and behavior that are opposed to the basic tenets of Confucian philosophy.

The main purpose of this paper is to seek an improved understanding of cognitive and non-cognitive variables that impact achievement among secondary school students in Confucian Asian countries. Recent cross-cultural studies of personality, social attitudes, values and social norms (see Stankov & Lee, 2008, 2009) and attempts to develop scales of militant extremist mindset (Stankov, Saucier & Knežević, 2010) show Confucian Asians' stronger endorsement of statements that express toughness, maliciousness, and proviolence. These (anti-)social attitudes may be related to both high achievement and students' well-being that is evident from the large-scale studies of educational attainment. Is

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students' pronounced anxiety and self-doubt too high price to pay for high achievement? If so, the clues for possible remedy may be within the culture itself.

1. Confucian Asians and Europeans: High achievement in Mathematics and Science

There has been an unprecedented surge of interest in the findings of recent international assessments such as the Trends in International Mathematics and Science Study (TIMSS) and the Programme for International Student Assessment (PISA). This increased interest could be attributed to a number of factors such as: the increased number of participant countries (e.g., 41 countries in PISA 2003), advanced techniques in large-scale assessments (e.g., spiral booklet design or computerized testing), ongoing year-to-year (trend) comparisons in the rankings of country performance, and increased public awareness via media and Internet.

The emphasis in TIMSS and PISA has been on student performance in mathematics, science, and reading literacy. PISA rotates its focus of main cognitive areas: in 2000 it was reading, in 2003 mathematics, and in 2006 science. According to Lee (2009) the top ten countries in terms of PISA 2003 mathematics scores easily divide into three groups: a) Four Confucian Asian countries (Hong Kong-China, South Korea, Japan and Macau-China); b) Five West European countries (Finland, The Netherlands, Liechtenstein, Belgium and Switzerland) and c) Canada. If we disregard the only North American country, we are left with two main groupings within the ten highest achieving countries — Confucian Asian and European countries. In terms of mathematics performance as it was assessed by TIMSS 1995 (Wilkins, 2004), the same two world regions top the list of the ten most successful countries: a) Confucian Asian (Singapore, Japan, South Korea, and Hong Kong); and b) East and West Europe (Belgium [Flemish], Czech Republic, The Netherlands, Slovak Republic, Switzerland, and Austria). Overall, in large-scale studies of educational attainment, Confucians tend to score somewhat higher than Europeans. This outcome is not restricted to mathematics; similar findings have been reported for science performance (Wilkins, 2004). More recent international studies (i.e., PISA 2006 and TIMSS 2007) are also in general agreement with this grouping of high-achieving countries. For example, the ten highest scoring countries in PISA 2006 assessment in Science are Finland, Canada, Japan, New Zealand, Hong Kong, Chinese Taipei, Estonia, Australia, The Netherlands and Korea. Similarly, TIMSS 2007 results for 8th graders' Mathematics scores provide the following order of the participating countries: Chinese Taipei, Korea, Singapore, Hong Kong, Japan, Hungary, England, Russian Federation, the United States and Lithuania.

1.1. Pedagogical and psychological issues that arose from the findings of Confucian–European comparisons

The above findings led to a lively debate in educational circles in the East Asian region and beyond. However, there was no comparable debate among psychologists.

1.1.1. East Asia learner paradox?

Traditionally, educationists interested in cross-country comparisons have focused on East–West differences and perhaps not so much on more refined regional differences such as Confucian Asia versus Continental Europe. What became known as the East Asian Learner paradox (see Huang & Leung, 2005; Mok, 2006; Watkins & Biggs, 2001) is that some Westerners are puzzled by the fact that East Asian students do so well in international assessments despite having pedagogical practices that emphasize strategies of memorization and drill. This is in part because Western pedagogy tends to regard teacher-oriented classrooms as less conducive to deep learning. Watkins and Biggs (2001) argue that students from Confucian heritage countries are, in fact, deep learners despite the emphasis on repetitive effort. The existence of a paradox has also been challenged. For example, Hogan (2008) argues that no one has done the kind of cognitive and educational research that would allow the hypothesis to be tested properly. He also points out that East Asian pedagogy is well attuned to the aims of tasks set by TIMSS (i.e., the achieved curriculum, or what has been learned in school) and to a lesser extent to tasks that are more common in PISA (i.e., tasks that are designed to assess mathematical literacy, or what you can do in real life after you leave school)[1]. In general, the country differences on TIMSS assessments tend to be somewhat larger than on PISA assessments. The difference in the PISA 2003 mathematics scores between the five top-scoring European countries (mean = 531) and four Confucian Asian countries (mean = 538) is only 0.07 of the standard deviation (see first row in Table 1). This is not a substantial difference.

Table 1
PISA 2003 mean mathematics achievement scores and self-concept, self-efficacy and anxiety scores for Confucian Asian and European countries.

	Europeans	Confucian Asians	
	Finland, Holland, Belgium, Switzerland, Lichtenstein	Hong Kong, Korea, Japan, Macau-China	Difference in Cohen's *d*
Math scores	531	538	0.07
Self-concept	−0.03	−0.41	0.38
Self-efficacy	0.21	−0.31	0.52
Anxiety	−0.40	0.10	0.50

*For the achievement in math, mean = 500; standard deviation = 100. Self-concept, self-efficacy and anxiety scores are all in standard score units (e.g., mean = 0; standard deviation = 1).

An unfortunate outcome of the debate regarding the East Asian Learner's Paradox may be reluctance to change a system that has consistently produced excellent results on international assessments of educational achievement i.e., an emphasis on repetition and memorization in schools in Confucian Asia. This could manifest in resistance to suggestions that it may be useful to introduce pedagogical practices emphasizing problem solving and critical and creative thinking. These skills are also covered under the broad umbrella term "21st Century skills", and it has been argued that these skills are critical in an increasingly complex and technologically sophisticated world.

Training students in thinking and problem solving is not new. Stankov (1986) described the dramatic effects achieved in the 1960s and 1970s in former Yugoslavia. In that part of Europe, just like in Confucian Asia today, the emphasis was on memorization. A series of experiments was carried out in two secondary schools, both of which shared the same facilities. Each experiment started with an incoming cohort of secondary school students (year nine, age 15). All students in both schools were administered a battery of cognitive measures of intelligence. The experimental group was then exposed to intensive (usually two to three times per week) classes involving training in creative or critical thinking and problem solving. Teachers in content areas were also taught how to incorporate principles of creative and critical thinking in their lessons. This same cohort was exposed to that type of instruction over a period of three years. Stankov (1986) reports gains in cognitive test scores in the experimental group compared with the control group after three years of training. The effects were an increase in scores on tests of intelligence, particularly fluid intelligence, that were 5 to 8 IQ points above those in the control group. This is important because, debates about intelligence aside (see Horn, 2008), tests of fluid intelligence measure problem solving skills and abilities that involve novel tasks and are independent of prior knowledge. Thus, training in critical and creative thinking and problem solving can produce superior outcomes in comparison to more

[1] Comparisons between TIMSS, PISA (and NAEP) assessments can be found on the following site: http://nces.ed.gov/timss/pdf/naep_timss_pisa_comp.pdf.