
Learning Considered Within a Cultural Context

Confucian and Socratic Approaches

Roger G. Tweed and Darrin R. Lehman
University of British Columbia

A Confucian–Socratic framework is used to analyze culture’s influence on academic learning. Socrates, a Western exemplar, valued private and public questioning of widely accepted knowledge and expected students to evaluate others’ beliefs and to generate and express their own hypotheses. Confucius, an Eastern exemplar, valued effortful, respectful, and pragmatic acquisition of essential knowledge as well as behavioral reform. Expressions of these approaches in modern postsecondary contexts are discussed, as are the effects these approaches may have for students who either fit or do not fit the cultural ideal.

Culture provides tools, habits, and assumptions that pervasively influence human thought and behavior, and the task of learning does not escape this influence (Brislin, Bochner, & Lonner, 1975; Bruner, 1996; Cole, 1996). Although students’ academic roles and behaviors are culturally influenced, students and educators alike may underappreciate such influences affecting any given student. Treatment of students of Asian descent in Western educational institutions has at times been far from exemplary (Samuelowicz, 1987; Wollenburg, 1978/1995), and this poor treatment may result in part from a lack of understanding of distinct conceptions of learning. Thus, increased understanding and appreciation of these conceptions can potentially lead to institutional changes that improve education for all.

An issue regarding cultural labels must first be addressed. The term *Western* is problematic as a cultural label (see Lillard, 1998) because literally it denotes the entire Western hemisphere—many more people than usually implied by the term. An alternative is *European American*, but this excludes Canadians, Australians, and all culturally Western people of non-European ethnicity. Thus, we use the shorthand term *culturally Western*, with the proviso that this references culturally Western English-speaking individuals (e.g., American, Australian, Canadian) of any ethnic group. The term *culturally Chinese* is used to reference culturally Chinese individuals of any ethnic group. For brevity, we treat cultural group membership as a simple either-or dichotomy, but by no means does this deny the reality of underlying continuities of cultural difference (see, e.g., Ryder, Alden, & Paulhus, 2000) or the important notion that bicultural people have more than one cultural lens available (Hong, Morris, Chiu, & Benet-Martinez, 2000). Any framework, such as our Confucian–Socratic

one, that describes cultural differences inevitably must oversimplify in some ways the rich cultural interplay.

In this article, we compare and contrast ideals for learning that are culturally more Chinese (Confucian) with those that are culturally more Western (Socratic), though admittedly examples of each can be seen in both cultural contexts. Confucian aspects of learning have been discussed by others (e.g., Biggs, 1996; Lee, 1996; Reagan, 1996), but the addition of a Socratic foil (Scollon, 1999) is useful. Using these ancient exemplars, we construct a framework for organizing previous findings and for generating hypotheses regarding culturally Chinese and culturally Western learners in the modern context. Although our discussion focuses primarily on learning in North American postsecondary institutions, the framework is more widely applicable.

Nisbett, Peng, Choi, and Norenzayan (2001; see also Peng & Nisbett, 1999) have presented their rather important “ancient Greek versus ancient Chinese” framework related to modern cultural differences, but they referenced Taoist rather than Confucian elements. Taoism has been described as a severe critic of Confucianism (Chan, 1963, p. 136). Whereas Confucius was humanistic and sought to achieve societal harmony by encouraging virtuous activity, Lao Tzu, a central figure in Taoism, was something of a mystic who praised nonconformity and inaction. Nisbett et al. emphasized the holistic orientation of Taoist thought and offered compelling evidence that this type of thinking occurs more frequently among people influenced by Chi-

Roger G. Tweed and Darrin R. Lehman, Department of Psychology, University of British Columbia, Vancouver, British Columbia, Canada.

Roger G. Tweed is now at the Department of Psychology, Douglas College, New Westminster, British Columbia, Canada.

Preparation of this article was supported by the Natural Sciences and Engineering Research Council of Canada and the Social Sciences and Humanities Research Council of Canada. We thank Heesoon Bai, Luke Conway, Mark Csikszentmihalyi, Steve Heine, Li-jun Ji, Joel Kupperman, Richard Nisbett, Ara Norenzayan, Kaiping Peng, Andrew Ryder, Mark Schaller, Bryan Sokol, Candace Tweed, and Paul Wong for their comments on an earlier version of this article. We are especially grateful to Anna Lehman for planting the seed that grew into this framework and to Del Paulhus for the valuable discussions that helped clarify and improve the framework.

Correspondence concerning this article should be addressed to Darrin R. Lehman, Department of Psychology, University of British Columbia, 2136 West Mall, Vancouver, British Columbia, Canada V6T 1Z4; or to Roger G. Tweed, Department of Psychology, Douglas College, P.O. Box 2503, 700 Royal Avenue, New Westminster, British Columbia, Canada V3L 5B2. E-mail: dlehman@psych.ubc.ca or r_tweed@douglas.bc.ca



Roger G. Tweed
Photo by Mikki Herbold

nese culture than among those influenced by Western culture. Our framework, in contrast, spotlights Confucius and focuses specifically on approaches to learning rather than on everyday patterns of (holistic) cognition.

Caveats

It is possible for misinterpretation and even offense to result from the current discussion. Hypotheses of culture-influenced learning styles attracted much controversy when the discussion focused on African American students (see, e.g., Frisby, 1993; Richardson, 1993). Controversy based on mutual understanding can lead to intellectual advances but, if based on misunderstanding, can produce severe negative consequences. To guard against this possibility, some general issues deserve comment.

First, we do not assert that culturally Chinese or culturally Western learners form homogeneous groups. Much heterogeneity exists within each of these populations, so there will be many individual exceptions to these patterns of learning. Recognizing diversity, however, need not preclude sensitivity to mean differences between cultural groups (Geertz, 1973; Miller, 1997)—differences that not only are intriguing but, when comprehended, can promote understanding and respect between individuals of different groups. Similarly, aspects of the framework may generalize to other East Asian cultures, but important exceptions exist. For example, some research suggests that much child education in Japan diverges from the Confucian approach (Lewis, 1995; Rohlen & LeTendre, 1995; White, 1987). Cultural psychologists face the difficult task of trying to advance understanding of cultural uniqueness while not forgetting that cultures in many ways are more similar than different. There is always the risk that cultural psychologists' findings will be abused. Does this mean that

they should abandon their efforts? We believe not because an understanding of culturally distinct values may promote learning from ways unlike one's own and also because differences between cultures may highlight important but previously unrecognized differences within cultures.

Second, genetic influences on learning approaches are neither assumed nor implied in this discussion. Others (e.g., Rushton, 1997) have tried to examine the relations between race and cognitive variables, but such examinations are politically explosive, extraordinarily difficult, and of questionable utility. Inevitably, culture and genetics are naturally confounded: For example, the people most influenced by Chinese culture tend to be of Chinese ancestry. The possibility of genetic contributions to cognitive differences is not explored here.

Third, we are not attempting to evaluate cultures. Our goal is description, not comparative judgment. There may be a time for such evaluation, but that is not the current objective. Our tentative assumption is that in some contexts, the Confucian approach to learning is more adaptive and, in other contexts, the Socratic approach is. If this assumption is correct, then, in this increasingly multicultural world, students ideally will be able to competently exhibit a range of both Confucian and Socratic learning behaviors. Such flexibility will allow students to function more effectively across different learning contexts.

Fourth, we do not directly address ability differences between cultural groups. Rather, our discussion focuses on mean differences between cultural groups in conceptions of and approaches to learning. Admittedly, habitual patterns of behavior eventually may lead to ability differences (Berry, 1976; Sinha, Mishra, & Berry, 1996), but our objective is to address cultural differences in beliefs and associated behavioral tendencies, not differences in ability.

Finally, our Confucian–Socratic framework serves a descriptive function and does not presume historical causation between Confucius or Socrates and modern students in the East or West. Historical patterns of causation are difficult to draw even over short periods of time but are nearly impossible to draw conclusively between Confucius, Socrates, and the modern world. We move next to brief descriptions of Socrates and Confucius.

Socrates

Socrates (469–399 B.C.E.), thought by many to be the father of Western philosophy, wrote nothing that survives today. The main records of Socratic dialogue come from Plato. In these dialogues, Socrates tended to question his own and others' beliefs, evaluated others' knowledge, esteemed self-generated knowledge, began teaching by implanting doubt, and sought knowledge for which he had good reasons.

Tendency to Question

Socrates frequently questioned others' beliefs and his own beliefs, and he was proud of this tendency. He claimed that no greater good had ever happened to the state than his service of questioning others and exhorting those proved



Darrin R. Lehman
Photo by Mark X Schaller

ignorant by his questioning (Plato, 399 B.C.E./1937, hereinafter cited by the common title *The Apology*). He recognized the limits of others' knowledge but also of his own knowledge; he asserted that he actually knew very little (see, e.g., Plato, 399 B.C.E./1956, hereinafter cited by the common title *Meno*). Socrates felt that his questioning of his own beliefs made him superior to others because he at least recognized his own ignorance (*The Apology*).

Tendency to Evaluate

Socrates, however, did not express simple, unthinking skepticism. Rather, he carefully evaluated knowledge. He evaluated others' knowledge by asking successively deeper and more probing questions, finding most people in these sessions to be foolish and ignorant, the most foolish being men of highest repute in society. He exposed the foolishness of these respected men by engaging in repeated questioning, which became known as the Socratic method. People sometimes followed Socrates to these displays and took pleasure in watching him humble these proud men. Socrates reported that some of the wealthy young people of Athens began to imitate him, using the Socratic questioning method to reveal the ignorance of other people claiming to be knowledgeable (*The Apology*). The elite, not surprisingly, resented Socrates, and he was sentenced to death after being accused of impiety and of corrupting the city's youth. Socrates refused to give up his tendency to evaluate others' knowledge even on threat of death or for an offer of mercy conditional on him changing his ways.

Esteem for Self-Generated Knowledge

Socrates held self-generated knowledge in great esteem. He had many students, but he told the court of Athens that he was not responsible for any of his students' beliefs because

he never taught them anything (*The Apology*). An extended example of Socrates' teaching technique is recorded in *Meno*: Socrates demonstrated his ability to guide even an uneducated slave boy to produce complex geometric principles. Socrates perceived himself to have taught the boy nothing but merely to have asked the right questions. This self-generated knowledge, even if in response to prodding, is the type of knowledge most valued by Socrates, in contrast to beliefs that have been accepted from others. The nature of this pursuit of truth is individualistic: Each person has to find truth in him- or herself. Socrates did not mean to imply that truth is different for each person but that, in the ideal learning context, truth is neither prescribed by authority figures nor socially negotiated. Rather, it is found by the self.

Focus on Error to Evoke Doubt

In the Platonic dialogues, Socrates tended to begin with a focus on error to evoke doubt (Jacobsen, 1999; Press, 1999; Scott-Kakures, Castagnetto, Benson, & Hurley, 1993). Socrates would pose a question (typically, a request for a definition of a term such as *beauty*, *courage*, or *virtue*) that was answered incorrectly by his dialogue partner. Socrates then focused on exposing the error in the person's answer. In *Meno*, after making the slave boy doubt his initial answers to a question of geometry, Socrates commented that the boy had moved toward realizing the answer because doubt is the first step in attaining knowledge.

Search for Knowledge, Not True Belief

Socrates believed that learning should lead to knowledge, not to merely true belief. According to Socrates, knowledge goes beyond mere accuracy in beliefs; knowledge includes possessing rational justification for those beliefs. True beliefs, in contrast, are right opinions held without knowing the rational justification for those opinions. Socrates said that poets and politicians often possess true belief but lack the more important possession: knowledge.

Confucius

Confucius (551–479 B.C.E.), like Socrates, left few if any writings, but his students recorded many of his ideas in the *Analects* (Confucius, 479 B.C.E./1979; hereinafter cited by book and chapter number only). The *Analects* provide insight into an approach to teaching and learning that markedly contrasts with that endorsed by Socrates. Confucius served as a teacher who educated men with an eye to putting them into civil service positions. He believed the role of civil administrator held importance for improving society. Confucius valued effortful learning, behavioral reform, pragmatic learning, acquisition of essential knowledge, and respectful learning.

Effortful Learning

For Confucius, learning is closely tied to hard work. He spoke of effort much more than of ability (see, e.g., 18:1). He expected nothing less than a student's best effort (7:25, 14:7, 15:6), and he willingly taught anyone who wanted to

learn, regardless of their ability (7:7). He looked down on those who pursued quick results and who wanted to avoid extended effort (14:44). He believed that practice and single-minded effort are instrumental to attaining success (15:6, 15:32, 17:2).

Behavioral Reform

For Confucius, a primary goal of learning is behavioral reform by means of a deep internal transformation of the student (2:18, 4:15, 7:3, 7:25, 7:28, 17:23). Confucius (4:15, 6:3, 7:25, 17:23) and his followers (see, e.g., "The Great Learning," 1893/1971) taught that behavioral reform is a central goal of education because virtuous behavior can ensure individual success and societal harmony. Socrates also discussed virtue, but his conception seemed at times to be less pragmatic and more focused on apprehension of truth than on direct behavioral reform.

Pragmatic Learning

Confucius had a pragmatic orientation to learning; the idea of learning merely for the sake of learning was foreign to him (Lee, 1996). An acceptable goal of learning, in addition to personal reform, is to competently conduct oneself within a civil service job (13:5), a role Confucius viewed as important for reforming society. Confucius believed that there are activities that go deeper into learning than merely storing up knowledge, but a parallelism in the text suggests that these activities relate not to higher thinking skills, as many educators might assume, but to self-improvement, including becoming more virtuous and more skilled (7:3). He also told his students that if they corrected themselves and avoided error, they would be able to procure a civil service career (2:18, 13:13, 15:32). The pragmatic orientation appears frequently in his writings even though, no doubt, Confucius hoped students would find pleasure in learning as well. Confucius summed up his practical orientation when he asked,

If a man who knows the three hundred Odes by heart fails when given administrative responsibilities and proves incapable of exercising his own initiative when sent to foreign states, then what use are the Odes to him, however many he may have learned? (13:5)

Acquisition of Essential Knowledge

Confucius urged his students to learn the essentials and assured them that if they did, they would rarely miss the mark (4:23). They were not merely to parrot the words of authorities (13:23) but truly to understand and be reformed by the knowledge contained in those words. Confucius also claimed not to be creating ideas. He said, "I transmit, but I don't innovate; I am truthful in what I say and devoted to antiquity" (7:1). Thus, even this great scholar viewed his role as one of acquiring and transferring knowledge rather than expressing personal hypotheses. Excessive focus on generating ideas goes against the Confucian ideal of the modest, slow-to-speak individual focused on learning from respected others (1:14, 12:3, 12:20, 14:44, 15:31). Innovation is accept-

able in certain contexts, but the tendency to innovate or criticize without extensive preparatory knowledge is a fault, according to Confucius (7:28, 16:2).

Confucius asserted that he desired his students to sift his teachings and criticize his statements (2:9, 11:4), but more frequently, he seemed to value an acquisition-focused approach to learning. The priority he gave to acquisition of essentials expressed itself in his comparison of the value of thinking and learning. He said,

I once spent all day thinking without taking food and all night thinking without going to bed, but I found that I gained nothing from it. It would have been better for me to have spent the time in learning. (15:31; see also 2:11)

This acquisition of essentials is central to Confucius' conception of learning. Interestingly, Socrates likewise had taken the time to acquire the essentials of his cultural context (e.g., he could quote Homer's poetry verbatim, and he knew well the positions of his opponents), yet he promoted a completely different approach to learning in the earlier dialogues, those thought to be most representative of the true Socrates.

Respectful Learning

Confucius expected learners to respect and obey authority figures (1:6, 3:19, 4:18; 14:43-44), and this contrasts with Socrates' habit of publicly humiliating authority figures. Confucius (479 B.C.E./1947) is reported to have said that "to honor those higher than ourselves is the highest expression of the sense of justice" (p. 332). Confucius believed that virtue is achieved primarily by observing and learning from people who provide models of virtue (5:3), so students were encouraged to find someone better than themselves and imitate that person (4:17). Confucius' own respectfulness was frequently expressed in his emphasis on learning from the past. He often cited concrete historical cases from which his students could learn. He praised the virtues of the Zhou dynasty, and in a sense, the records of the Zhou time period provided the textbooks on which he relied.

For Confucius, unlike Socrates, learning is not focused mainly on questioning, evaluating, and generating knowledge because truth is not found primarily in the self. Instead, truth and the associated good character traits are learned mainly from the collective, in particular, learned from individuals whom the collective recognizes as exemplars and from the ancients whom the collective recognizes as even greater exemplars (4:17, 7:1). The epistemology underlying this approach presumes that most of the important truths are already known and available to those who submit to a worthy master; thus, one needs to engage in the task of attending to recognized masters to progress (5:3, 14:44). Confucius to some extent expected his students to sift his teachings and find things out for themselves, but unlike Socrates, Confucius did not encourage an educative task focused mainly on searching individualistically for truth.

Deep and Surface Approaches to Learning

Most research comparing culturally Chinese and culturally Western learners has examined surface and deep approaches to learning, the distinction having roots in Marton and Saljo's (1976) qualitative research conducted in the West. These researchers had students read written passages and then asked them to describe what they did while reading the passages. From these descriptions, Marton and Saljo distinguished two broad types of responses that indicated either a surface or a deep approach to the task. In the former, students reported trying to memorize the phrases or words used by the author. In the latter, students reported trying to understand the main points or trying to infer the main meaning of the argument. Deep-oriented students tended to outperform surface-oriented students on recall of the main argument from the passage.

Some Western instructors believe that culturally Chinese students tend to take a shallow approach to learning. For example, over 30% of Australian instructors surveyed by Samuelowicz (1987) felt that Asian students wanted to rote learn and did not want to think. Other observers have characterized Asian learning as passive (see Barker, Child, Gallois, Jones, & Callan, 1991). Pratt and Wong (1999) reported that Western instructors in Hong Kong sometimes disparaged Chinese approaches to learning as overly instrumental and accused culturally Chinese learners of being unwilling to think deeply. Biggs (1996) suggested that negative evaluations of Asian approaches to learning are typical for Western instructors.

However, Westerners frequently misperceive culturally Chinese study methods. Although many Western educators assume that students engaged in memorization are not interested in deep understanding (Pratt & Wong, 1999), Marton, Dall'Alba, and Kun (1996) argued that culturally Chinese students often use memorization not as an end in itself but as a path to understanding. Likewise, Kember (1996) argued that culturally Chinese students often combine strategies for memorization with strategies for understanding. In an interview study of conceptions of learning, the majority of Chinese educators spontaneously described memorization and understanding as related (Marton et al., 1996). They saw memorization as a path to understanding and vice versa. One of the Chinese teachers said, "In the process of repetition, it is not a simple repetition. Because each time I repeat, I would have some new idea of understanding, that is to say I can understand better" (Marton et al., 1996, p. 81). Culturally Chinese students, then, may engage in strategies that appear to be surface oriented but actually are deep oriented according to the Marton and Saljo (1976) definition of deep processing.

Some of the deep versus surface studies have used Biggs's (1987) Study Process Questionnaire (SPQ). Biggs, an expert in Chinese learning styles, translated the SPQ into Cantonese and expected to find Chinese students high on the surface subscale and low on the deep subscale. He found the opposite (Biggs, 1987). Others (Kember & Gow, 1991) also have detected SPQ patterns suggesting that

culturally Chinese students take a deeper approach to learning than culturally Western students. Some problems, however, make the SPQ data difficult to interpret. For example, most of the studies have compared groups using different translations of the SPQ, thus raising comparability issues. Furthermore, Hong Kong universities are more selective than Australian universities, which makes comparison of the student populations problematic (Biggs, 1992). One study (Volet, Renshaw, & Tietzel, 1994), which compared students in the same context using the same form of the SPQ, produced results opposite to those of Biggs (1987).

Another problem is that SPQ data may underestimate the extent to which culturally Chinese students take a deep approach to learning. This is owing to Western cultural assumptions injected into the SPQ scale. The belief that education should be its own end and that education loses meaning if pursued for an external purpose is a Western notion promoted by John Dewey (1916). This notion is represented in the deep items of the SPQ: Four of its items ask whether the respondent finds pleasure in the act of studying or feels a need to know truth (e.g., "I find that studying gives me a feeling of deep personal satisfaction"). The scale construction assumes that deep learning is intrinsically motivated. A more instrumental conception of learning, viewing learning as a means to an end, which we argue is part of the Confucian conception of learning, is represented in the surface items of the SPQ (e.g., "I chose my present courses largely with a view to the job situation when I graduate rather than because of how much they interest me"). Yet these intrinsic versus instrumental conceptions are not part of Marton and Saljo's (1976) original conceptualization of deep- versus surface-level processing. The processing orientation paradigm of Marton and Saljo has produced important findings but was not originally intended for cross-cultural research. In contrast, our Confucian-Socratic framework, which we turn to next, was constructed with cross-cultural research in mind.

Confucian Versus Socratic Learning Today

The Confucian versus Socratic framework provides a conceptual home for consideration of Chinese-influenced and Western-influenced approaches to learning. In the modern context, Confucian-oriented learning as defined within our framework involves effort-focused conceptions of learning, pragmatic orientations to learning, and acceptance of behavioral reform as an academic goal. Socratic-oriented learning as defined within our framework involves overt and private questioning, expression of personal hypotheses, and a desire for self-directed tasks. In the ancient world, examples of Socratic and Confucian learning could be seen in both the East and the West. For example, Aristotle preached the value of acquiring the fundamentals. Likewise, in the modern world, Socratic and Confucian ideals for learning can be seen in both the East and the West. Nonetheless, the framework highlights differences in general tendency between some cultural (but not necessarily ethnic) groups.

Effort-Focused Conception of Learning

The Confucian–Socratic framework suggests that culturally Chinese students tend to view effort as more central to the learning process than do culturally Western students. This difference has been explored and supported in some contexts. In one study, Chinese students in Australia reported putting greater effort into academic pursuits than did Anglo Australians or other Westerners (Rosenthal & Feldman, 1991; see also Sue & Zane, 1985). Heine et al. (2001) developed a six-item Utility of Effort Scale that asks students to report the extent to which success in a variety of domains depends on effort as opposed to inherent ability. They found that both Asian American and Japanese postsecondary students reported stronger beliefs in the utility of effort than did Western postsecondary students. Similarly, Chinese grade-school students in China tend to attribute academic success to effort (Hau & Salili, 1991), whereas American children tend to attribute academic success to less controllable factors such as possessing inherent ability or having a good teacher (Stevenson, Chen, & Lee, 1993; Stevenson & Stigler, 1992).

Some evidence suggests that people who believe that effort leads to success also tend to hold an implicit incremental (as opposed to entity) theory (see, e.g., Dweck, Chiu, & Hong, 1995; Levy & Dweck, 1998). According to Dweck's model, incremental theorists assume that one can change important aspects of the self such as one's ability to perform intellectual tasks. Because of the assumption that ability level can change, incremental theorists conclude that achievement is determined more by effort and strategy than by inherent ability. This belief in the malleability of fundamental abilities coheres with Confucius's doctrine that humans are by nature similar (17:2) and that success is within reach of all who work to learn certain fundamentals (4:23).

In contrast, entity theorists, in Dweck's model, perceive the self as unchangeable. They assume that fixed, stable, and global traits provide the best explanations for behavior. In the intellectual domain, entity theorists attribute performance largely to inherent ability rather than to effort and strategy. Advantages of holding an implicit incremental rather than an entity theory become evident when students encounter the inevitable academic experience of disappointment with their performance. Entity theorists tend to believe that poor performance reflects unchangeably low ability (Levy & Dweck, 1998), a form of characterological self-blame (Janoff-Bulman, 1979, 1992). Characterological self-blame, which predicts poor outcomes in different domains (Janoff-Bulman, 1979), in this context predicts increased anxiety, reduced task pleasure, reduced perseverance, and reduced performance (Levy & Dweck 1998).

Incremental theorists, in contrast, tend to attribute disappointing performance to insufficient effort or a badly chosen strategy (Levy & Dweck, 1998), a form of behavioral self-blame (Janoff-Bulman, 1979). As both effort and strategy can be controlled, this attribution gives the incremental theorist hope of improved performance. In keeping

with this hopeful attribution pattern, incremental theorists persevere longer and perform better after failure than do entity theorists (Levy & Dweck, 1998). These implicit theories seem to have causal power (i.e., not simply correlated third variables) as suggested by studies in which the theories were manipulated and then behavior of participants was assessed (Chiu, Hong, & Dweck, 1997; Levy, Stroessner, & Dweck, 1999).

The utility of effort and incremental dimensions, though empirically associated in the West (see, e.g., Dweck et al., 1995; Levy & Dweck, 1998), can be logically separated. Beliefs about the mutability of ability are different from, though positively associated in the West with, beliefs about whether effort determines success in the academic environment. People can believe that effort will lead to success even if intellectual ability is not changeable. Effort could have its effect not by leading to improved ability but by overpowering the effects of ability deficits. Alternatively, ability could be presumed to be similar across persons and, for that reason, relatively unimportant in determining success.

It is not clear why these dimensions have produced positive associations. We conjecture that Westerners (being especially likely to make trait attributions; see Choi, Nisbett, & Norenzayan, 1999, for a review), who believe that effort leads to success, assume that the effects are mediated by improvements in ability. In other words, effortful practice leads to improved ability, which in turn leads to success. Belief in this sequence, which preserves the Western assumption of the potency of traits but allows for utility of effort, can occur only if ability is subject to change, and thus, people believing in the utility of effort score in the incremental direction.

Cultural differences also may distinguish the dimensions of incremental orientation and belief in the utility of effort. Null findings between East and West have been observed on the incremental dimension (Chiu et al., 1997; Heine et al., 2001) despite the evidence that cultures differ on beliefs in the utility of effort. It is interesting to note that research in the West has focused more on beliefs about a trait (e.g., beliefs about intelligence) than on beliefs about a strategy (e.g., beliefs in the utility of effort), yet some of the significant causal effects may be more closely tied to beliefs about the strategy, beliefs that seem to differ across East and West.

Pragmatic Outcome Versus Truth as End Goal

The Confucian–Socratic framework predicts that culturally Chinese learners are more likely to focus on practical outcomes of education than are culturally Western learners. Several researchers (e.g., Salili, 1996; Sue & Okazaki, 1990; Winter, 1996) have suggested that culturally Chinese students are more likely than culturally Western students to view education as a means to an end. This practical orientation toward education may intensify when ethnic Chinese immigrate to Western countries because education can provide a path to higher status jobs when discrimination and other barriers block certain routes (Sue & Okazaki, 1990). Historical precedent laid the groundwork for this

practical view of education in China; as early as 2,500 years ago, education was a path to a secure job in Chinese government (Lee, 1996). A practical orientation to education accords with the tendency toward practicality evidenced in other aspects of Chinese culture (Wink, Gao, Jones, & Chao, 1997) and contrasts with the Western philosophical orientation derived from Dewey (1916) that learning should be its own end and that education loses meaning if focused on an extrinsic goal.

Some research suggests that in the West, students striving for external goals such as high marks or pleasing others often report less intrinsic motivation toward learning and mastery. Yet, in Chinese contexts, extrinsic motivation tends to co-occur with intrinsic motivation (Salili, Chiu, & Lai, 2001; Volet & Renshaw, 1996). That is, among culturally Chinese students, external goals such as performance or social recognition are positively correlated with mastery goals. These findings are important because they suggest that a concern for pragmatic outcomes of education need not preclude striving for learning-related goals. Students concerned with getting high marks, getting a job, and acquiring status may seem to Westerners to be uninterested in learning, but these findings cast doubt on that interpretation for a substantial portion of students.

Behavioral Reform

The Confucian versus Socratic framework suggests that culturally Chinese students are more likely than culturally Western students to believe that behavioral reform deserves a significant role in educational discourse. This concurs with Triandis's (1996) statements that individuals in collectivist cultures tend to give "more weight to norms than to attitudes as determinants of behavior" (p. 409; see also Domino & Hannah, 1987; Heine, Lehman, Okugawa, & Campbell, 1992). In contrast, people in individualistic cultures prefer for behavior to be guided by attitudes (Triandis, 1996) and tend to be less comfortable with prolonged written or spoken discourse regarding morality (Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985; Li, 1996). Even Triandis's phrasing, avoiding the use of the term morality, may reflect his sensitivity to a Western academic audience uncomfortable with discussion of moral constraints on behavior. Collectivist cultures, on the other hand, promote salience of moral rules, and Chinese culture in particular encourages moral exhortations not only by teachers and students (Li, 1996) but by political leaders, judges, and others in society (see, e.g., Coates, 1968).

Overtly Questioning Versus Postponing Questioning

The Confucian versus Socratic framework suggests that culturally Western learners attach greater importance early in the learning process to questioning and evaluating material presented by an instructor. Questioning the ideas of others, whether in school or elsewhere, asserts one's independence and thereby fulfills the cultural ideal of individualism. Doubt shows that one is independent from others not only in the domains of values and relationships, domains for which individualism often has been discussed

(Kagitcibasi, 1997), but even in the domain of cognition. From this individualistic perspective, the ideal type of thinking is that which doubts and evaluates others' thinking and generates new ideas. Chomsky, an example of this individualism, has called for all people, students or not, to be skeptical and to question authorities (see, e.g., Chomsky, 1997), and he has juxtaposed questioning of authorities to what he called "irrational attitudes of submission to authority" (Achbar, Wintonick, & Symansky, 1992). According to Chomsky (1968), exposing lies promoted by government and other authorities is a major responsibility of intellectuals. Chomsky (1992) seemed to imply that students engaged in absorptive learning are not really learning at all (p. 171). Interestingly, Chomsky (1997) has reported that students from Asian backgrounds find his classes particularly difficult.

On the other hand, the late George P. Grant (1995/1998) lamented the fact that people feel a need to express their will as fully as possible, not only in their behavior but also in their thinking, and thus have difficulty showing reverence for others' important ideas. More in line with Grant than Chomsky, Chinese students in Australia who watched videotapes of a student interacting with an instructor perceived submissive behavior as more respectful than assertive behavior, a response in line with our framework. Australian students and instructors did not make this differentiation, and in fact, instructors rated submissive, polite behavior as unlikely to help the student succeed (Gallois, Barker, Jones, & Callan, 1992). Overt doubt has the potential to disrupt social harmony by challenging the power distance some students expect between themselves and their instructor. Hofstede's (1984) cross-cultural analysis indicated that a number of East Asian cultures encourage acceptance of power distance, defined as "the extent to which the less powerful person in a society accepts inequality in power and considers it as normal" (p. 390; see also Triandis & Gelfand, 1998). Students who are sensitized to perceive and accept power distance are more likely to withhold questions that threaten such power distance. Tutorial leaders sometimes expect questions and challenges from students, and this may set particularly difficult demands for students holding high power distance value systems. In keeping with this aspect of tutorials, in an Australian study, serious difficulty with tutorial participation was four times as likely to be self-reported among a predominantly Asian group of international students as among local students (Mullins, Quintrell, & Hancock, 1995; see also Barker et al., 1991). In an observational study, Duncan and Paulhus (1999) found that Asian Canadian students were much less likely to speak out during class in a variety of faculties than were European Canadian students. Some of these effects could be due to language difficulty rather than culture, but Duncan and Paulhus (1998) found that 96% of Asian Canadian students reported shyness in class, compared with only 38% of European Canadian students, an effect size hard to attribute solely to language difficulty when considering the fact that many of the students of Asian descent were born and raised in Canada and thus have spoken English their entire lives.

Pratt and Wong (1999) interviewed students and instructors in Hong Kong and reported that Chinese respondents more so than Western respondents tended to treat texts and instructors as highly authoritative sources of knowledge and to assume that the first steps of learning consist of understanding the knowledge presented by these sources. Often, the Western instructors assumed instead that the basics are self-evident or transitory and, as a result, that acquisition of the basics is less important. Pratt and Wong suggested that culturally Chinese learners tend to perceive learning as a sequential four-stage process: (a) memorizing, (b) understanding, (c) applying, and (d) questioning or modifying. The location of criticism at the end of the learning process contrasts with Western encouragements of learners' questioning and evaluating throughout the learning process.

Expressing Personal Hypotheses Versus Acquiring Essential Knowledge

The Confucian versus Socratic framework also suggests that culturally Western students tend to attach higher importance in the academic context to expressing personal hypotheses than do culturally Chinese learners. As with doubting and evaluating the ideas of others, considering personal hypotheses asserts one's independence in the cognitive domain and thus fulfills an individualistic cultural ideal. This ideal concurs with an increasing Western educational expectation that students should value their personal hypotheses (see, e.g., Bruffee, 1993). Students taking a Confucian approach are more likely to strive to demonstrate that they have acquired, have been changed by, and can work with essential knowledge (see Cai, 1999; Pratt & Wong, 1999).

Confucian acquisition of essentials should not be confused with passive learning or mere absorption. The belief that acquisition is somehow passive has a long history and can be traced at least as far back as Descartes (Gilbert, 1991). Both Socratic and Confucian learners, however, can be construed as active. The Socratic learner must actively work to find knowledge within the self; the Confucian learner must actively work to acquire, understand, and apply essential concepts coming mainly from outside the self. In this sense, Confucian acquisition of essentials occurs not through passive absorption but through constructing within the self the knowledge that the collective considers essential.

Desire for Self-Directed Versus Structured Tasks

The framework also suggests that culturally Western students tend to feel a greater need for self-direction in academic tasks. Socrates' doctrine that knowledge already resides within students suggests that able learners can progress even without a guide. Confucius, on the other hand, assumed that students need a competent teacher to guide them (5:3) and believed students would better spend their time by acquiring ideas from authorities than by seeking ideas individualistically (15:31).

Many educators in the West have praised freedom of choice for students, believing that it leads to higher intrinsic motivation and better learning (see, e.g., Dewey, 1916). Research in the West has supported the notion that free choice leads to higher intrinsic motivation in the form of greater perseverance following free choice and, conversely, that a sense of feeling controlled reduces intrinsic motivation (Deci & Ryan, 1985). Recent research, however, suggests that these findings do not always generalize across cultures. Iyengar and Lepper (1999) found that, as expected, personal choice enhanced motivation for Anglo American children, but for Asian American children, peak motivation was observed not when they freely chose their activities but when their activities were chosen for them by trusted peers or trusted authority figures. Also, in Pratt and Wong's (1999) study in Hong Kong, Chinese faculty and students expected instructors to provide more structure than did Western instructors teaching at the same location.

Impact of Confucian Approaches in a Culturally Western Context

In the West, in some educational contexts, the Confucian approach may provide advantages, for example, if grades are based on an ability to acquire, reexpress, and apply foundational knowledge to familiar and new situations. In other contexts, however, a Confucian approach may be a disadvantage, for example, if a task requires willingness to question authorities or if faculty conclude that students adhering to a Confucian approach are less capable because they do not speak up in class or because they ask for greater structure from instructors. In these particular contexts, a Socratic orientation would probably be more adaptive. Yet Western instructors may underestimate the extent to which their own academic tasks are Confucian oriented. Ability to solve unfamiliar problems in most sciences requires thorough acquisition of fundamentals and a practiced ability to apply those fundamentals. One cannot develop, for example, a new biomedical technique unless one understands the fundamentals of the science.

Impact of Socratic Approaches in a Culturally Chinese Context

We have focused on the Western educational context, yet the consequences of these approaches to learning in the East deserve mention. Anecdotal evidence suggests that some Confucian approaches have ongoing relevance to modern education in the People's Republic of China (PRC). Some published reports of Confucian educational practices dominating education in the PRC can be found in guidebooks, such as Hu and Grove's (1999) *Encountering the Chinese: A Guide for Americans*, and in more popular narratives, such as Mark Salzman's (1988) *Iron and Silk*, a narrative of his experience teaching in the PRC. Clearly, Confucian approaches to learning that persist in Chinese cultural contexts do so because they are adaptive in those contexts. The Socratic approach has potential downsides that may be especially salient in the Chinese context. These include insensitivity to the social consequences of public criticism possibly resulting in disruption of the learning

environment, an adversarial orientation that can distract from the pursuit of truth, and a lack of appreciation for others' ideas leading to difficulty understanding and benefiting from those ideas. Yang (1986), in a publication by the Central Institute of Educational Research in Beijing, China, argued that the Socratic method leads to confusion because students fail to read widely or observe before they engage in argument. According to this Eastern perspective, the Socratic method can lead to argument by the uninformed, to a pooling of ignorance, and to poor rather than good thinking. Of course, situations vary widely within every culture, so there are also times in culturally Chinese contexts when a Socratic orientation provides advantages, such as when instructors want to be questioned (even Confucius wanted his students to doubt his word at times; see, e.g., 2:9).

Development of a Flexible Approach to Learning

Evidence suggests that bicultural people can switch the cultural frame within which they operate depending on cues in the situation (Hong et al., 2000). Students who can likewise flex their learning approach in response to cues in the academic environment may hold an advantage. These students would be in a sense academically bicultural and could operate adaptively within environments requiring Confucian or Socratic approaches. The value of both the Confucian and Socratic orientations in learning was nicely articulated by Perkins (1992) even though he was not talking about university education and did not use these same labels for the orientations. Educators in line with Perkins would encourage both thoughtful acquisition (Confucian) and inquiry (Socratic) such that students acquire knowledge and thinking skills that become fully understood, active, and elicited in many domains beyond the academic context.

An inflexible Confucian approach to learning clearly could have some disadvantages, but with respect to some Western contexts, we also have concerns about teaching based on a caricature of the Socratic orientation. We support teaching that inspires inquiry and sound thinking. We believe, however, that some of what passes for instruction in critical thinking is not in fact modeling a superior or even Socratic approach to thinking. Rather, it is modeling an extreme Western and somewhat distorted Socratic value system in which criticism receives more emphasis than thinking, doubt is seen as morally superior to belief, and efforts to understand are at risk owing to premature criticism and rejection of others' ideas. We believe there is a place for teaching students how to criticize, but we also feel that many students in university lack the ability to argue competently in support of rather than against intellectual positions or the ability to appreciate great thoughts and great thinkers. The study of developmental phases in the ability to argue has received some attention (see, e.g., Kitchener & King, 1981), but the study of appreciative thinking may also prove valuable in future research. Our ideas about appreciative thinking are still in early develop-

ment, but we believe that a useful definition of appreciative thinking will include a feeling of respect and possibly even awe or reverence for great ideas. Appreciative thinking, like critical thinking, may be associated with academic success.

Several additional avenues for future research seem worthy of pursuit. First, the nature and feasibility of academic biculturalism could profitably be explored. What distinguishes students who can display both Socratic and Confucian approaches to learning? Second, researchers could examine the utility of the present framework as an educational tool in both cross-cultural and unicultural environments. In informal discussions, our students have expressed appreciation that learning about the dimensions has helped them understand why they have struggled with certain academic tasks in the past and has helped them see how they could do better in the future. Teaching the framework to students may help even those in unicultural environments realize their own approach to learning and thus assist them in becoming more flexible learners. Third, researchers could explore the interaction between Taoist (see, e.g., Nisbett et al., 2001; Peng & Nisbett, 1999) and Confucian influences in Chinese culture. What situational factors, for example, moderate which of these two at times contradictory influences is evident in cognition and behavior? Possibly, social contexts such as being in a classroom or writing a paper to be read by an instructor increase the potency of harmony-oriented Confucian tendencies and diminish otherwise potent Taoist influences. Possibly, Taoist influences are more potent when questions regarding epistemology, truth, and knowledge are addressed in less socially constrained contexts, as suggested by the work of Peng and Nisbett (1999). Finally, researchers with a cross-cultural psychology orientation may seek to unpack the cultural variables underlying differences in learning orientations. Here, unpacking culture could involve separating the effects of cultural variables such as collectivism, power distance (Hofstede, 1983), moral discipline, and Confucian work dynamism (Chinese Culture Connection, 1987) on student approaches to learning.

REFERENCES

- Achbar, M. (Producer/Director), Wintonick, P. (Producer/Director), & Symansky, A. (Producer). (1992). *Manufacturing consent—Noam Chomsky and the media: Part one. Thought control in a democratic society* [Motion picture]. Montreal, Quebec, Canada: Necessary Illusions Productions.
- Barker, M., Child, C., Gallois, C., Jones, E., & Callan, V. J. (1991). Difficulties of overseas students in social and academic situations. *Australian Journal of Psychology, 43*, 79–84.
- Bellah, R. N., Madsen, R., Sullivan, W. M., Swidler, A., & Tipton, S. M. (1985). *Habits of the heart: Individualism and commitment in American life*. New York: Harper & Row.
- Berry, J. W. (1976). *Human ecology and cognitive style: Comparative studies in cultural and psychological adaptation*. New York: Wiley.
- Biggs, J. B. (1987). *Student approaches to learning and studying*. Melbourne: Australian Council for Educational Research.
- Biggs, J. B. (1992). *Why and how do Hong Kong students learn? Using the learning and study process questionnaires (Education Paper 14)*. Hong Kong: Faculty of Education, University of Hong Kong.
- Biggs, J. B. (1996). Western misperceptions of the Confucian-heritage learning culture. In D. A. Watkins & J. B. Biggs (Eds.), *The Chinese*

- learner: Cultural, psychological, and contextual influences (pp. 45–67). Hong Kong: Comparative Education Research Centre.
- Brislin, R. W., Bochner, S., & Lonner, W. J. (1975). *Cross-cultural perspectives on learning*. Beverly Hills, CA: Sage.
- Bruffee, K. A. (1993). *Collaborative learning: Higher education, interdependence, and the authority of knowledge*. Baltimore: Johns Hopkins University Press.
- Bruner, J. (1996). *The culture of education*. Cambridge, MA: Harvard University Press.
- Cai, G. (1999). Texts in contexts: Understanding Chinese students' English compositions. In C. R. Cooper & L. Odell (Eds.), *Evaluating writing: The role of teachers' knowledge about text, learning, and culture* (pp. 279–297). Urbana, IL: National Council of Teachers of English.
- Chan, W.-T. (1963). *A source book in Chinese philosophy*. Princeton, NJ: Princeton University Press.
- Chinese Culture Connection. (1987). Chinese values and the search for culture-free dimensions of culture. *Journal of Cross-Cultural Psychology, 18*, 143–164.
- Chiu, C., Hong, Y., & Dweck, C. S. (1997). Lay dispositionism and implicit theories of personality. *Journal of Personality and Social Psychology, 73*, 19–30.
- Choi, I., Nisbett, R. E., & Norenzayan, A. (1999). Causal attribution across cultures: Variation and universality. *Psychological Bulletin, 125*, 47–63.
- Chomsky, N. (1968). The responsibility of intellectuals. In T. Roszak (Ed.), *The dissenting academy* (pp. 254–298). New York: Vintage Books.
- Chomsky, N. (1992). *Chronicles of dissent: Noam Chomsky interviewed by David Barsamian*. Vancouver, British Columbia, Canada: New Star Books.
- Chomsky, N. (1997). *Class warfare: Noam Chomsky interviewed by David Barsamian*. Vancouver, British Columbia, Canada: New Star Books.
- Coates, A. (1968). *Myself a mandarin*. London: Muller.
- Cole, M. (1996). *Cultural psychology: A once and future discipline*. Cambridge, MA: Belknap Press of Harvard University Press.
- Confucius. (1947). The wisdom of Confucius. In S. Commins & R. N. Linscott (Eds.), *Man and man: The social philosophers* (pp. 323–358). New York: Random House. (Original work published ca. 479 B.C.E.)
- Confucius. (1979). *The Analects* (D. C. Lau, Trans.). New York: Penguin Books. (Original work published ca. 479 B.C.E.)
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*. New York: Macmillan.
- Domino, G., & Hannah, M. T. (1987). A comparative analysis of social values of Chinese and American children. *Journal of Cross-Cultural Psychology, 18*, 58–77.
- Duncan, J., & Paulhus, D. L. (1998, August). *Varieties of shyness in Asian- and European-Canadians*. Paper presented at the 106th Annual Convention of the American Psychological Association, San Francisco, CA.
- Duncan, J., & Paulhus, D. L. (1999). [Observational study of students in undergraduate university classes]. Unpublished raw data.
- Dweck, C. S., Chiu, C., & Hong, Y. (1995). Implicit theories and their role in judgments and reactions: A world from two perspectives. *Psychological Inquiry, 6*, 267–285.
- Frisby, C. L. (1993). One giant step backward: Myths of Black cultural learning styles. *School Psychology Review, 22*, 535–557.
- Gallois, C., Barker, M., Jones, E., & Callan, V. J. (1992). Intercultural communication: Evaluations of lecturers and Australian and Chinese students. In S. Iwawaki, Y. Kashima, & K. Leung (Eds.), *Innovations in cross-cultural psychology* (pp. 86–102). Amsterdam: Swets & Zeitlinger.
- Geertz, C. (1973). *The interpretation of cultures*. New York: Basic Books.
- Gilbert, D. T. (1991). How mental systems believe. *American Psychologist, 46*, 107–119.
- Grant, G. P. (1998). Time as history. In W. Christian & S. Grant (Eds.), *The George Grant reader* (pp. 280–290). Toronto, Ontario, Canada: University of Toronto Press. (Original work published in 1995)
- The great learning. (1971). In J. Legge (Trans.), *Confucian analects, the great learning, and the doctrine of the mean*. New York: Dover. (Translation originally published 1893)
- Hau, K. T., & Salili, F. (1991). Structure and semantic differential placement of specific causes: Academic causal attributions by Chinese students in Hong Kong. *International Journal of Psychology, 26*, 175–193.
- Heine, S. J., Kitayama, S., Lehman, D. R., Takata, T., Ide, E., Leung, C., & Matsumoto, M. (2001). Divergent consequences of success and failure in Japan and North America: An investigation of self-improving motivations and malleable selves. *Journal of Personality and Social Psychology, 81*, 599–615.
- Heine, S. J., Lehman, D. R., Okugawa, O., & Campbell, J. D. (1992). The effects of culture on self-implicated processes: A comparison of Canadians and Japanese. *Ritsumeikan Review of Social Sciences, 28*, 29–38.
- Hofstede, G. (1983). Dimensions of national cultures in fifty countries and three regions. In J. B. Deregowski, S. Dziurawiec, & R. C. Annis (Eds.), *Explications in cross-cultural psychology* (pp. 335–355). Lisse, the Netherlands: Swets & Zeitlinger.
- Hofstede, G. (1984). The cultural relativity of the quality of life concept. *Academy of Management Review, 9*, 389–398.
- Hong, Y. Y., Morris, M. W., Chiu, C. Y., & Benet-Martinez, V. (2000). Multicultural minds: A dynamic constructivist approach to culture and cognition. *American Psychologist, 55*, 709–720.
- Hu, W., & Grove, C. L. (1999). *Encountering the Chinese: A guide for Americans*. Yarmouth, ME: Intercultural Press.
- Iyengar, S. S., & Lepper, M. R. (1999). Rethinking the value of choice: A cultural perspective on intrinsic motivation. *Journal of Personality and Social Psychology, 76*, 349–366.
- Jacobsen, D. A. (1999). *Philosophy in classroom teaching: Bridging the gap*. Upper Saddle River, NJ: Merrill.
- Janoff-Bulman, R. (1979). Characterological versus behavioral self-blame: Inquiries into depression and rape. *Journal of Personality and Social Psychology, 37*, 1798–1809.
- Janoff-Bulman, R. (1992). *Shattered assumptions: Towards a new psychology of trauma*. New York: Free Press.
- Kagitcibasi, C. (1997). Individualism and collectivism. In J. W. Berry, M. H. Segall, & C. Kagitcibasi (Eds.), *Handbook of cross-cultural psychology: Vol. 3. Social behavior and applications* (2nd ed., pp. 1–50). Boston: Allyn & Bacon.
- Kember, D. (1996). The intention to both memorize and understand: Another approach to learning? *Higher Education, 31*, 341–355.
- Kember, D., & Gow, L. (1991). A challenge to the anecdotal stereotype of the Asian student. *Studies in Higher Education, 16*, 117–128.
- Kitchener, K. S., & King, P. M. (1981). Reflective judgment: Concepts of justification and their relationship to age and education. *Journal of Applied Developmental Psychology, 2*, 89–116.
- Lee, W. O. (1996). The cultural context for Chinese learners: Conceptions of learning in the Confucian tradition. In D. A. Watkins & J. B. Biggs (Eds.), *The Chinese learner: Cultural, psychological, and contextual influences* (pp. 25–42). Hong Kong: Comparative Education Research Centre.
- Levy, S. R., & Dweck, C. S. (1998). Trait- versus process-focused social judgment. *Social Cognition, 16*, 151–172.
- Levy, S. R., Stoessner, S. J., & Dweck, C. S. (1999). Stereotype formation and endorsement: The role of implicit theories. *Journal of Personality and Social Psychology, 74*, 1421–1436.
- Lewis, C. C. (1995). *Educating hearts and minds: Reflections on Japanese preschool and elementary education*. Cambridge, England: Cambridge University Press.
- Li, X.-M. (1996). *Good writing in cross-cultural context*. Albany: State University of New York Press.
- Lillard, A. (1998). Ethnopsychologies: Cultural variations in theories of mind. *Psychological Bulletin, 123*, 3–32.
- Marton, F., Dall'Alba, G., & Kun, T. L. (1996). Memorizing and understanding: The keys to the paradox? In D. A. Watkins & J. B. Biggs (Eds.), *The Chinese learner: Cultural, psychological, and contextual influences* (pp. 69–84). Hong Kong: Comparative Education Research Centre.
- Marton, F., & Saljo, R. (1976). On qualitative differences in learning: 1. Outcome and process. *British Journal of Educational Psychology, 46*, 4–11.
- Miller, J. G. (1997). Theoretical issues in cultural psychology. In J. W.

- Berry, Y. H. Poortinga, & J. Pandey (Eds.), *Handbook of cross-cultural psychology: Vol. 1. Theory and method* (2nd ed., pp. 85–128). Boston: Allyn & Bacon.
- Mullins, G., Quintrell, N., & Hancock, L. (1995). The experiences of international and local students at three Australian universities. *Higher Education Research and Development, 14*, 201–31.
- Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic vs. analytic cognition. *Psychological Review, 108*, 291–310.
- Peng, K., & Nisbett, R. E. (1999). Culture, dialectics, and reasoning about contradiction. *American Psychologist, 54*, 741–754.
- Perkins, D. (1992). *Smart schools: Better thinking and learning for every child*. New York: Free Press.
- Plato. (1937). The apology (B. Jowett, Trans.). In C. W. Eliot (Ed.), *The Harvard classics* (pp. 5–30). New York: Collier. (Original work published ca. 399 B.C.E.)
- Plato. (1956). Meno. In E. H. Warmington & P. G. Rouse (Eds.), W. H. D. Rouse (Trans.), *Great dialogues of Plato* (pp. 28–68). New York: New American Library. (Original work published ca. 399 B.C.E.)
- Pratt, D. D., & Wong, K. M. (1999). Chinese conceptions of “effective teaching” in Hong Kong: Towards culturally sensitive evaluation of teaching. *International Journal of Lifelong Education, 18*, 241–258.
- Press, G. A. (1999). Plato. In R. H. Popkin (Ed.), *The Columbia history of Western philosophy* (pp. 32–51). New York: Columbia University Press.
- Reagan, T. (1996). *Non-Western educational traditions: Alternative approaches to educational thought and practice*. Mahwah, NJ: Erlbaum.
- Richardson, T. Q. (1993). Black cultural learning styles: Is it really a myth? *School Psychology Review, 22*, 562–567.
- Rohlen, T. P., & LeTendre, G. (1995). Introduction: Japanese theories of learning. In T. Rohlen & G. LeTendre (Eds.), *Teaching and learning in Japan* (pp. 1–16). Cambridge, England: Cambridge University Press.
- Rosenthal, D. A., & Feldman, S. S. (1991). The influence of perceived family and personal factors on self reported school performance of Chinese and Western high school students. *Journal of Research on Adolescence, 1*, 135–154.
- Rushton, J. P. (1997). Race, IQ, and the APA report on *The Bell Curve*. *American Psychologist, 52*, 69–70.
- Ryder, A. G., Alden, L. E., & Paulhus, D. L. (2000). Is acculturation unidimensional or bidimensional? A head-to-head comparison in the prediction of personality, self-identity, and adjustment. *Journal of Personality and Social Psychology, 79*, 49–65.
- Salili, F. (1996). Accepting personal responsibility for learning. In D. A. Watkins & J. B. Biggs (Eds.), *The Chinese learner: Cultural, psychological, and contextual influences* (pp. 85–106). Hong Kong: Comparative Education Research Centre.
- Salili, F., Chiu, C. Y., & Lai, S. (2001). The influence of culture and context on students’ achievement orientations. In F. Salili, C. Y. Chiu, & Y. Y. Hong (Eds.), *Student motivation: The culture and context of learning* (pp. 221–247). New York: Plenum.
- Salzman, M. (1988). *Iron and silk*. London: Methuen.
- Samuelowicz, K. (1987). Learning problems of overseas students: Two sides of a story. *Higher Education Research and Development, 6*, 121–134.
- Scollon, S. (1999). Not to waste words or students. In E. Hinkel (Ed.), *Culture in second language teaching and learning* (pp. 13–27). Cambridge, England: Cambridge University Press.
- Scott-Kakures, D., Castagnetto, S., Benson, H., & Hurley, P. (1993). *History of philosophy*. New York: HarperCollins.
- Sinha, D., Mishra, R. C., & Berry, J. W. (1996). Some eco-cultural and acculturational factors in intermodal perception. In J. Pandey, D. Sinha, & D. P. S. Bhawuk (Eds.), *Asian contributions to cross-cultural psychology* (pp. 151–164). Thousand Oaks, CA: Sage.
- Stevenson, H. W., Chen, C., & Lee, S.-Y. (1993, January 1). Mathematics achievement of Chinese, Japanese, and American children: Ten years later. *Science, 259*, 53–58.
- Stevenson, H. W., & Stigler, J. W. (1992). *The learning gap: Why our schools are failing and what we can learn from Japanese and Chinese education*. New York: Simon & Schuster.
- Sue, S., & Okazaki, S. (1990). Asian-American educational achievements: A phenomenon in search of an explanation. *American Psychologist, 45*, 913–920.
- Sue, S., & Zane, N. W. S. (1985). Academic achievement and socioemotional adjustment among Chinese university students. *Journal of Counseling Psychology, 32*, 570–579.
- Triandis, H. C. (1996). The measurement of cultural syndromes. *American Psychologist, 51*, 407–415.
- Triandis, H. C., & Gelfand, M. J. (1998). Converging measurement of horizontal and vertical individualism and collectivism. *Journal of Personality and Social Psychology, 74*, 118–128.
- Volet, S. E., & Renshaw, P. D. (1996). Chinese students at an Australian university: Adaptability and continuity. In D. A. Watkins & J. B. Biggs (Eds.), *The Chinese learner: Cultural, psychological, and contextual influences* (pp. 205–220). Hong Kong: Comparative Education Research Centre.
- Volet, S. E., Renshaw, P. D., & Tietzel, K. (1994). A short-term longitudinal investigation of cross-cultural differences in study approaches using Biggs’ SPQ questionnaire. *British Journal of Educational Psychology, 64*, 301–318.
- White, M. (1987). *The Japanese educational challenge: A commitment to children*. New York: Free Press.
- Wink, P., Gao, B., Jones, S., & Chao, F. (1997). Social values and relationships with parents among American college women of Chinese and European descent. *International Journal of Psychology, 32*, 169–179.
- Winter, S. (1996). Peer tutoring and learning outcomes. In D. A. Watkins & J. B. Biggs (Eds.), *The Chinese learner: Cultural, psychological, and contextual influences* (pp. 221–242). Hong Kong: Comparative Education Research Centre.
- Wollenburg, C. M. (1995). “Yellow peril” in the schools (I and II). In D. T. Nakanishi & T. Y. Nishida (Eds.), *The Asian American educational experience: A source book for teachers and students* (pp. 3–27). New York: Routledge. (Original work published in 1978)
- Yang, H.-Y. (1986). A study on the educational thoughts of Confucius. In Central Institute of Educational Research (Ed.), *Chinese educational sciences* (pp. 192–201). Beijing, China: Educational Sciences Publishing House.