Achievement Beliefs and Their Cultural Contexts: Voices from American, Chinese-American and Taiwanese College Students[1]

Tsui, Cheng-Fang

1. Introduction

Attribution theory, originated by Heider (1958) to explain how we ordinary people attempt to infer cause and effect of our own behavior as well as others', examines the cognitive explanations at which we arrive when observing our own or others' behavior and how these explanations are related to observable characteristics of the individual or the situation involved.

Weiner (1986) first applied the attribution theory to achievement motivation and proposed that causal attributions perceived by individuals can influence their future expectations and emotional reactions, which in turn influence the achievement outcome. Since causal perceptions are, to a large extent, subjective value judgments, which are themselves highly susceptible to cultural influences, examinations of students' causal beliefs in cross-cultural contexts may shed light on their achievement motivation, which may influence their school performance. In fact, Weiner's attribution model has been employed by researchers into various cross-cultural settings and revealed fruitful results (Chandler, Shama, Wolf, & Planchard, 1981; Bar-Tal, Goldberg, & Knaani, 1984; Crittenden & Lamug, 1988; Schuster, Forsterling, & Weiner, 1989).

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Previous attribution research in the cross-cultural settings typically employed quantitative methodologies to investigate how students' ethnic/social background would link to their attributional orientations. Generally, subjects' causal beliefs were surveyed based on a particular achievement-related incident that subjects recalled from their past. When subjects were responding to self-generated incidents, which may very likely have varying degrees of psychological impact, the resulting attributions may be less comparable than those induced by a commonly experienced achievement situation. Along the same line, by not equating students' achievement experiences on which their causal attributions were based, most of the previous studies have treated attributions as a psychological trait, which assumes stability across situations when in fact attributions could vary from situation to situation and can be treated as a psychological state, which reflects the individual's transitory emotional condition within a specific context. Thus, part of the purpose of the current study is to investigate students' causal beliefs based on a commonly provided achievement incident and how their causal ascriptions relate to their cultural/ethnic background.

The main purpose of the study, however, is to conduct ethnographic interviews to investigate the social and cultural background to which students' causal beliefs may be traced. It is believed that an ethnographic inquiry into the target cultures can provide another, perhaps broader, context for understanding students' socialization process that directly or indirectly shapes and reinforces their causal beliefs. The research question for the current study, therefore, is to explore the possible links between students' causal attributions and their educational/upbringing experiences since childhood in hopes of gaining a broader picture where students' causal beliefs can be viewed more holistically than any single experiment task alone would allow.

Specifically, three target groups are of particular interest: Caucasian-American, Chinese-American, and Taiwanese college students. Due to a limited access to the subject pool and a risk of having confounding factors, Caucasian-American students for their widest accessibility were chosen to represent the American sample. The same concern applied to the Chinese-American sample in light of the previous findings from Mizokawa & Ryckman (1990) who have documented the existence of differing patterns of attribution among different ethnic groups of Asian-Americans. The significance of the current study lies in its promise to reveal multi-faceted cultural forces that have reinforced one another in sustaining one's achievement orientation. It also carries potential to expand our understanding of the strengths and weaknesses of different socialization processes for the different cultures involved.

2. Literature Review

2.1 Quantitative studies – Parental involvement and children's perceptions

Chen & Uttal (1988), based on data from a large cross-national study of American and Chinese children's academic performance and adaptation to school, examined how cultural values may be manifested in parents' beliefs about and expectations for their children's level of achievement. The results showed that, at all grades, Chinese mothers were much less satisfied with their children's performance than were American parents. Another finding regarding parents' attempts to influence their children's performance was that Chinese mothers indicated spending substantially more time than their American counterparts working directly with their children on homework.

Hess, Chang, & McDevitt (1987) examined beliefs about children's performance in mathematics through interviews with mothers and their sixth-grade children in

China and in Chinese-American and Caucasian-American groups in the United States. Results showed that, in general, although all three groups tended to give more weight to lack of effort than to other reasons for poor performance, Chinese families placed the greatest weight on lack of effort and Caucasian-American group distributed blame more evenly across all five causes. While the Chinese-American group demonstrated a similar pattern with their Chinese counterparts, the weight to effort was somewhat less.

Lee, Ichikawa, & Stevenson (1987) and Stevenson, Lee, Chen, Stigler, Hsu & Kitamura (1990) conducted a series of large cross-national studies during a ten-year period from 1980 to 1990 with 1,440 first and fifth graders in the Minneapolis metropolitan area, Taipei (Taiwan), and Sendai (Japan). With respect to children's beliefs about the role of effort and ability, children in all three cultures tended to agree that something could be done to help remedy poor performance. However, while the American children showed the least agreement with the statements that children have the same ability in reading and mathematics, Chinese (Taiwanese)[2] children showed the greatest degree of agreement. Also, American fifth graders showed the least agreement with the statement that "the best student always works harder" whereas the Chinese (Taiwanese) counterparts showed the greatest agreement.

Lin & Fu (1990) also contrasted the Taiwanese, Chinese-Americans, and Caucasian-Americans but focused on the differences in child-rearing practices. Results showed that, while mothers in Taiwan had higher parental-control than immigrant Chinese mothers in the U.S., immigrant Chinese mothers showed higher parental control and emphasis on achievement than Caucasian-American mothers.

[2] Lee et al. (1987) and Stevenson et al. (1990) referred to participants from Taiwan as “Chinese” at a time when the debate regarding Taiwan’s national/ethnic identity was yet to come to a conclusion. The term “Taiwanese” would be more appropriate and preferable these days when referring to residents of the island nation.

2.2 Qualitative studies – Attitudes toward schooling

Two ethnographic studies provide a perspective involving some of the cultural and social forces operating invisibly yet forcefully behind the educational orientation of Asian-Americans. The sample in Lee's study (Lee, 1994) is composed of Asian American students from Cambodia, Laos, Korea, Taiwan, Vietnam, Hong Kong, and China in a public, co-educational high school in Philadelphia. Three subgroups appeared to emerge according to their perceptions of future opportunities and attitudes toward schooling. The first subgroup—mainly Korean-Americans—who tended to hold positive attitudes toward schooling and would experience anxiety as a result of their efforts to live up to the standards of the model-minority stereotype. The second subgroup, mostly Southeast Asian refugees from working-class and poor families, did not see education as the key to success in the United States and believed that the Asian stereotype (high achievers in academics) placed by non-Asians was the obstacle that had prevented Asians from gaining social acceptance among non-Asians. Still the third subgroup was composed of students who identified themselves as Asian-Americans. Although hard-working and generally high achievers in school, these Asian descendants did not believe education would guarantee them equal opportunity. Rather, they considered school success a necessary part to resist racism, instead of a springboard to the future advancement. Findings revealed variations within a given minority group; that is, the so-called “Asian Americans” did not see themselves as being the same, and they did not share a common attitude toward schooling.

The other study, conducted by Mordkowitz & Ginsburg (1986), was based on a sample of fifteen Asian-Americans (roughly equal numbers of Chinese, Japanese, and

Korean youth, all being immigrants' children, some born in the U.S. and others not). Findings suggested a constellation of factors labeled "academic socialization" revealed through the interview data. These factors included authoritative families, high expectancies, effort emphasis in attributions, oversight of children's time utilization, priority allocation of tutorial or other resources for acceleration or remediation, and reinforcement of beliefs and behaviors conducive to instruction. The emphasis on educational study as the principal obligation of the child was pervasive in that academic study took priority over other daily activities including sports, the share of household chores, etc. Parents' high expectations for achievement was manifested by insistent demands for better performance but sparing praise for good grades. The belief that effort can assure the fulfillment of parental expectations was ubiquitous.

Studies examining family characteristics and parents' beliefs related to children's school achievement reveal that cross-national differences in children's attributions may be associated with culturally transmitted values and behavior. The major contrasts emerge between American families and those of Asian origins. In general, Asian parents' greater emphasis on effort than ability for children's poor performance parallels the attributional pattern shown by their children. The belief held by most Asian parents that effort contributes more than any other factor to the level of children’s achievement is reflected by their insistent demand for better improvement and, in some cases, emotional outbursts in reaction to low performance. Unlike their Asian counterparts, American parents do not attribute their children's school performance to an overriding factor but tend to assign responsibility across various factors with slightly more emphasis on ability. Also, American parents generally tend to react to their children's low performance with a more diagnostic approach.

3. Method

3.1 Experimental stage

The current study contains two phases. The first phase involves an experiment in which a total of 285 college students (American = 62; Chinese-American = 53; Taiwanese = 170) were engaged in a persistence task embedded with unsolvable items. Students were instructed to take as much time as they wished for the task while their time spent on task was carefully observed and recorded. Upon finishing the persistence task, participants were asked to complete the Attribution Questionnaire—adapted from the Revised Causal Dimension Scale (CDSII) (Russell, 1982; McAuley, Duncan, & Russell, 1992). The scale measures causal perceptions in four attributional dimensions: locus of causality, stability, personal control, and external control. “Locus of causality” subscale assesses the individual’s internal or external orientation while the “stability” subscale measures the perceived durability of the cause. The remaining two subscales – personal control and external control – together constitute Weiner’s controllability dimension. The higher the score on the “personal control” subscale, the more volitional power the person perceives over the cause. The higher the score on the “external control” dimension means more environmental influence perceived by the individual. The coefficient alphas for the four subscales ranged from .60 to .92 across four different studies (McAuley et al., 1992).

Analyses of the persistence task showed that, while holding constant for the effects of age and gender, the three cultural groups still differed significantly on how long they would persist through the designated task ($F_{(2, 273)} = 10.43$, $p < .001$). In particular, the Chinese-American students, who achieved the highest group mean (M = 23.23 minutes), were significantly different from their American counterparts (M =

15.75 min.; $t_{(282)} = -5.01$, $p < .001$) but not from their Taiwanese counterparts (M = 21.39 min.; $t_{(282)} = 1.87$, $p = .067$). Among the four attributional measures, Personal Control was the one that distinguished the three cultural groups the most. The Taiwanese group obtained the highest group mean (M = 21.3), significantly different from the Chinese-Americans (M = 19.2; $t_{(282)} = -2.04$, $p = .04$), as well as from their American counterparts (M = 17.6; $t_{(282)} = -4.13$, $p < .01$). Results of the experimental stage served as the benchmark criteria on which the second phase of the study—Interview Stage—was operated.

3.2 Interview Stage

Following the experiment came the ethnographic interviews in which 15 of the 285 experimental subjects were recruited.

3.2.1 Interview Participants

Fifteen participants (5 per cultural group) were selected for the ethnographic interviews. The selection process was completed separately for each cultural group in accordance with the following criteria: (1) that they had indicated a willingness for the interview during the experiment stage, (2) that both genders be represented, (3) that the five students chosen for each group reflect a spectrum of academic majors and of the Personal Control scores—a key measure that differentiated the three cultural groups during the experimental stage. Distribution of the interview participants by culture, age, gender, academic major, and Personal Control score is included in Table 1.

Table 1

Distribution of Interview Participants by Culture, Age, Gender, Major, and Personal Control

Culture	Name	Age	Sex	Major	Personal Control	
					Score	Category
American	Ben	18	male	Exercise Science	4	10 and below
	Matt	27	male	Communications	15	11 - 15
	Jane	19	female	Anthropology	17	16 - 20
	Kara	22	female	Pharmacy	24	21 - 25
	Kurt	27	male	Physical Therapy	27	26 and above
Chinese-American	Nina	18	female	Int'l Studies	9	10 and below
	Tonya	19	female	Speech & Hearing	13	11 - 15
	Jim	20	male	Biochemistry	20	16 - 20
	Kenny	17	male	Biochemistry	24	21 - 25
	Wayne	21	male	Psychology	26	26 and above
Taiwanese	Chen	19	male	Geology	6	10 and below
	Hsu	19	female	Geology	15	11 - 15
	Liu	18	male	Civil Engineering	19	16 - 20
	Chang	18	female	Business Math	21	21 - 25
	Ko	21	male	Business Math	26	26 and above

* All names have been changed to pseudonyms to protect the confidentiality of the participants.

3.2.2 Instruments

Fifteen semi-structured interview questions (Rist, 1982a, 1982b; Bogdan and Biklen, 1982; and Spradley, 1979) concerning the individual's upbringing and educational experiences were prepared for each interview (see Appendix A). These questions, however, only served to elicit relevant information and had in no way limited the conversations into a question-answer format. I attempted to get the participants to converse about their educational and family backgrounds and supplied additional questions when necessary. Interviews ranged from 2 hours to two and a half hours. All interviews were audio-recorded with permission of the participants and later transcribed.

The interviews with the participants in Taiwan were conducted in Mandarin

Chinese. The participants' responses were first translated from Chinese to English by me and later proofread by a bilingual Chinese-American. Discrepancies in translation were resolved by mutual agreement.

3.2.3 Procedure

All interviews were conducted within two weeks after the experiment. Before beginning each interview, all participants signed a consent form that ensured their anonymity and confidentiality in the study. This form was presented in a bilingual, English-Mandarin format.

I began each interview by having the participants talk about their feelings or impressions towards the experiment. This usually served as an ice-breaker. Once I sensed a more relaxing atmosphere between me and my respondent, I attempted to interject as few comments as possible and allowed them to pursue any aspect of my topics in any direction they pleased. I did, however, try to cover all the pre-specified questions while generating follow-up questions spontaneously.

3.2.4 Data Analysis

Unlike a full-blown case study based on a series of interviews and observation sessions, the current ethnographic undertaking was based on a single interview per participant and may only reveal aspects of the wholeness (Seidman, 1991). The sensible objective then is to look for recurring themes congruent with the experimental findings, to allow discrepant data that would render a more comprehensive and dynamic “sense-making” process and finally, to discover ambiguities that would provide incentives for the much-needed future research.

With this awareness in mind, I began the data analysis. First, I read through the

interview transcripts over and over again to develop a sense for the recurring topics. The next step involved domain analysis (Spradley, 1980). The interview transcripts were broken down into segments that represented minimum units of thought and were each coded into a tentative category. The coded passages were then cut out from the duplicate copies of the transcripts and placed in various folders according to their assigned categories. When a passage could be coded by more than one category, additional duplicate copies of the text were made and the passage re-coded and sorted into the appropriate folder. The original transcripts, however, remained intact so as to serve as a contextual reference to the excerpted passages. These tentative categories formed the basic domains under which distinct ideas were grouped.

As categories emerge through the ongoing reading and re-reading of interview transcripts, caution was also taken to allow categories to wax and wane during the course of data analysis. Also, the writing up of research data may also contribute to the merging and grouping of categories initially construed. In other words, the recursive process of thinking and writing involved in the data analysis requires total immersion in the data at all times. It is this very nature, however, that allows the emergence of interconnections within or among themes that would be less possible by a linear analytical fashion.

4. Results and Discussion

To comply with the editorial requirement of word limit, only one theme—Ability vs. Effort—was chosen to be fully addressed, among those that emerged from the data analysis, without compromising the richness of the data (see Appendix B for more details of the interview data).

Despite exceptions in all three cultural groups, as anticipated, there seemed to

emerge a pattern for each group to explain the overall responses. Three American students (Ben, Matt, and Kurt) clearly expressed that natural ability served as an overarching force behind their academic achievement.

> Ben: *I've always been very interested in science ever since I was in grades school. It always came naturally. I never really had to do much work in it. Like all the tests were easy. All the kids were failing and studying for days, I'd walk in and just pick up the stuff easily 'cuz that's what I liked. It was just interesting, and not even studying for it and get an A on the test.*
>
> Matt: *Anything involving math word problems, those drive me insane. I barely made it through calculus. My dad started to follow after me. He teaches math like calc and pre-calc. He sucked up all the math genes and I got none of them (chuckles). I did the effort thing. I tried so hard on this (calculus course) after being up for hours after hours cranking up these problems.*
>
> Kurt: *As far as biology, I don't know, I know I've been blessed with good memory, I know it's a family thing. So that's helped with biology, it's just a lot of memorizing type of stuff. Yeah, definitely in those areas.*

Kara, on the other hand, was the only American respondent who gave full credit to effort, either of her own or her parents', regarding her academic success.

> Kara: *My parents were home at night with me, so they kinda pushed me along, made sure I did my homework. I know that I worked hard, it wasn't just the natural ability. I always work hard to get where I am now even. So probably the repetition, actual studying and practice.*

Matt and Jane both mentioned an extremely frustrating experience where they received unsatisfactory results after making their best effort. Matt had demonstrated a relatively high persistence level for the math course despite other circumstantial difficulties. This provided a cross-reference for his performance on the persistence task (29.25 minutes/30 minutes maximum) in the experiment. However, his belief in favor of natural endowments seemed to shadow him as he attempted to extend his given stamina over his math anxiety, which had its own history. In the case of Jane, although she did not express a strong belief in natural ability, her intolerance of frustration appeared to be the key issue, thus validating her lack of endurance over the

persistence task (11.35 minutes/30 minutes maximum) in the experiment.

The Chinese-American group seemed to be the eclectic group that viewed ability and effort as equally important contributors to one's achievement. Nina, Tonya, and Wayne expressed a strikingly similar view about the reciprocal determinism between ability and effort and their indispensability for someone's ultimate success.

> Nina: *I guess everyone is born with a certain amount of ability, but it can be improved. I think they (*ability and effort*) are equally important, it's like 50-50. I don't think it can ever be completely effort or completely ability. Even if I do my best, I still won't be able to reach like certain people, like Einstein (chuckles) or something,*
>
> Tonya: *I think in most things you have to do in life, it's a combination of both. If you don't have any ability to do anything, of course no matter how much effort you put in it, you're not gonna get anywhere. But without putting effort in, usually your ability doesn't get you far enough. They are almost intertwined, I think.*
>
> Wayne: *If someone has a talent, then if they don't get experience, then that talent wouldn't get realized, then it doesn't matter if they have that talent. But if someone has the experience, but doesn't have enough talent, (s/he) could only go, reach certain point, certain level of achievement, and then they won't be able to go on. Ability is basically what people have naturally, but also what they acquire, of how much of that natural talent has been realized.*

Although they acknowledged the existence of personal ceiling limited by the natural abilities, this did not seem to discourage them from striving for their best performance, as cross-validated by their highest group mean for the persistence task. An additional quote from Nina illustrates this point.

> Nina: *I guess I was speaking of satisfaction in terms of self-satisfaction, on the individual level. If you compare a whole group of people, there are always gonna be certain people who are more capable than others, that's just a fact; but there could be people who aren't as capable but are more successful than the people who are capable because they work harder. For a person to be happy with themselves, to think that they are successful, you'd have to know that, that you gave a 110% effort. But sometimes I think, we're getting philosophical now (chuckles), I think it's not possible to ever be content with yourself 'cuz it's natural for human beings to always want more. So even though you achieve a certain goal, you'll set a new goal for yourself, and you'd want to be better and better. I don't think you'll ever be content. You can be happy, you won't be content.*

Jim and Kenny, on the other hand, seemed to emphasize effort more, if not exclusively, or the nurturing aspects of the environment.

> Jim: *I spent like a whole year and a half for that test, and I did very well, better than I thought I did, and incidentally, I think, better than a lot of my peer schoolers smarter than me going into that same high school. That incident pointed to me that ability helps, but it's not the number one reason, that effort, if you put in enough over a long period of time, it works. I'm a junior, so far I've realized it's all effort, forget ability, at least in this school.*
>
> Kenny: *I don't think I'm especially talented in math, no, not especially (laughter). Maybe instinctively I think it's purely hard work and stuff, just the environment and be working hard. It just seemed that math was the class I would always get the A if I just did the work.*

Interestingly, the comment from Jim regarding his sustained effort over a long period of time for a distant goal seemed to contrast Matt's attempt to tackle his math problem. Furthermore, without additional probes, Jim incidentally revealed his perception of the attributions Asian-Americans generally have regarding their academic performance.

> Jim: *I've seen a surprising number of Asians (*Asian-Americans*) who don't work hard, but I never hear them say, "why fail me?" It's like, it's not to say we don't fail; we fail, but it's different, we know why. Asians may not all get A's but they most likely won't fail. And if they do, they really wouldn't complain because they know they didn't work at it. I'm almost positive. So if you fail, either change subject, admit that you were wrong or something, but don't say that it was because teacher made it too hard or something. (*This*) line of thinking is not really productive because (*it is*) something you can't control.*

This strongly internal, control-oriented attribution may have stemmed from their parents' immigrant status as well. Almost all five respondents expressed at some point during the interviews that they had seen their parents work hard to make a better living in the United States and the rewarding results of their work. However, as Tonya and Kenny commented below, this work ethic could also apply, beyond the cultural boundary, to immigrants in general.

Tonya: *Just traditionally, The Chinese culture always stresses hard work, you know, no sweat whatever (chuckles), you work hard and you'd be rewarded. It's kind of, it's kind of over-stereotype, I mean, everyone in other culture could do it, too.*

Kenny: *Maybe not so much like Asians in general have a better ethic than Caucasians or something, but maybe 'cuz a lot of Asians here are either first generation born in the America, so their parents are immigrants. And in general immigrants work harder. You could also say, like recent immigrants from Russia, they are all doing well, too. But they are less noticeable 'cuz they are a smaller group, and physically also Caucasians, so they look the same and you can't see the difference.*

As for the Taiwanese group, unsurprisingly, three of the five respondents (Chen, Liu, and Chang) indicated a strong position in favor of effort over ability.

Chen: *As for school work, I think it varies from person to person on how much effort we choose to put in. Someone may do well because he puts in more effort, not because he's more talented, so I believe effort is more important in academic work.*

Liu: *Back then (*in junior high school*), I thought it was mostly my talent that initiated my interest in math and kept me going. When I got into senior high school, I still had this belief that I was good in math, but there wasn't someone like my aunt to watch over me anymore. So I didn't practice as much and my grades began to suffer. That's when I realized that effort does make a difference.*

Chang: *In those years, I probably spent two-thirds of my entire study time on math. And because I did well, I'd spend more time on it, which only made me do better. I've always thought it was ability, but now that you asked, I think that effort probably has a lot to do with it, too.*

Chen's additional comment that "talents would weigh less as you advance into higher levels of performance" even took the stand one step further proposing an argument that effort would be the ultimate determinant of one's achievement. This strong orientation, clearly opposing the view held by either the American or the Chinese-American students that "ability" sets the limit, may have explained Taiwanese students' highest group mean of the perceived personal volitional power over an externally manipulated "impossible" task. Another respondent, Ko, initially

expressed his preference for effort but later on strongly affirmed the importance of ability.

> Ko: *However talented you are, a lack of effort is gonna have an impact somewhere, somehow. I mean, natural talent is very important, but you still need to put in some effort. However, I still believe natural talent is more important than effort.*

Regardless of the minor self-contradictions, his view seemed very similar to his Chinese-American counterparts', that effort and ability work interdependently but ability would be the ultimate factor. Finally, Hsu was the exceptional case in the current Taiwanese group, who expressed a preference for ability over effort.

> Hsu: *Practice may do some good. Still, if someone is not as sharp in a particular area, no matter how hard s/he tries, s/he would never fully master the material, whereas it may be easier for someone with the given talent to pick it up effortlessly. So I'd say practice could only do so much (for some people) and has its limits.*

Notice the hidden, norm-referenced mentality revealed in Hsu's comment, which is consistent with her earlier comment regarding her desire to engage in a competition for self-improvement:

> Hsu: *I think tracking* (ability grouping) *will only make me better because, uh, because only by competing with others will we know where we stand and how far we are apart from those at the to, it's what keeps me going.*

The two opposing views held by the American and the Taiwanese students seem to parallel a long-standing argument whether ability leads achievement or vice versa. As described by Chalip & Stigler (1986):

> *The traditional psychometric conception holds that intelligence is a characteristic of organisms and can be measured independently of content, context, and culture; that measured intelligence is indicative of underlying innate mental processes that determine the individual's intellectual power; and that achievement is largely determined by one's intelligence. In short, ability causes achievement. The alternative view, however, holds that while the traditional psychometric view believes that only novel task, instead of achievement tests, can accurately assess intelligence, the performance on novel tasks can best be conceptualized as transfer from learning in achievement contexts. Thus prior*

> *learning will, to a large extent, explain future performance on novel transfer tests; i.e., tests of ability. This view, therefore, asserts that achievement causes ability. (p. 302)*

The former view implies that one's innate ability is a fixed, immutable entity whereas the latter is suggestive of cognitive malleability. While a majority of the American respondents believed that their natural talents may have explained their exceptional performance, the Taiwanese students believed that their sustained effort would cultivate their capabilities beyond their given talents. The Chinese- American students, on the other hand, acknowledged the ceiling effect of natural endowments but also embraced the idea of intellectual cultivation. This belief seems in line with the recent intelligence theories by Sternberg (1985) and Gardner (1993), proposing that there is indeed a general factor of intelligence operating at the utmost level. And yet, intellectual skills targeting the important components of intelligence can be taught and learned to improve intellectual functioning for each individual student.

5. Conclusions

The interview data revealed that the Chinese-Americans seemed to hold an eclectic view between the Americans and the Taiwanese regarding the roles of ability and effort in one's ultimate achievement. A majority of the American interview respondents expressed an inclination to view their natural abilities as the deciding factors of their interests or achievement in the given areas. Three of the Taiwanese respondents, on the other hand, indicated a position in favor of effort over ability in explaining their current achievement and competence levels in the related areas. The Chinese-American respondents, however, seemed to view ability and effort as equally important and mutually determined for one's ultimate success.

The “pro-ability” approach detected among the American respondents (including the Chinese-Americans) seemed to reflect the belief that individual differences in intellectual capacity are rather fixed entities, which set limits to one's utmost achievement, and that these intellectual differences need to be identified in order for teachers to provide tailored instructions. This approach of embracing diversity among students may explain the philosophy behind the many programs or standardized tests used in the U.S. that are aimed at recognizing the gifted or the less capable. By contrast, the “pro-effort” approach expressed by the current Taiwanese respondents seemed to reflect a belief in the intellectual malleability that is susceptible to human effort. However, this implies a lack of interest in recognizing students' innate potential. Also, the perceived superior role of effort allows no mercy for lack of progress in learning. This may explain a lesser use of IQ testing in the educational system in Taiwan as well as the "uniform" standards often applied to all students in most achievement contexts.

The emphasis on ability versus effort demonstrated between the American and the Taiwanese students during the interviews suggested a tendency for either group to overemphasize one and overlook the other when explaining their achievement performance. Weisz (1984) proposed that effective achievement behavior requires selectivity—the capability to distinguish between outcomes that are contingent upon human influence and those that are not—and that erroneous judgments about the contingency of outcomes often cause fruitless achievement attempts. Students who fail to recognize the non-contingency that prevails in a currently involved task (e.g., environmental forces) tend to persist unreasonably in their effort to achieve and thus may be susceptible to frustration and disappointment. On the other hand, students who mistakenly believe that outcomes are highly non-contingent, when they are not

necessarily so (e.g., belief in the immutability of intelligence), may not persist to a reasonable degree before terminating their pursuit. The question then becomes how we teachers, after knowing the attributional beliefs held by our students, can intervene and shape their perceptions of achievement tasks.

For example, typical advice to American teachers (e.g., Gentile & Monaco, 1986; Gentile & Monaco, 1988) suggests emphasizing attributions to effort and acquisition of better strategies rather than to ability. As for advice to Asian teachers and parents who tend to over-emphasize effort, if not exclusively, and show anger or criticism at children's low performance (Dix & Grusec, 1984; Hess et al., 1987), no substantial advice has appeared in the previous literature. However, in light of Weisz's suggestions, which seem to apply to both cases, teachers may need to include practice for students to discriminate when outcomes are contingently vs. non-contingently related to efforts and strategies, and to provide necessary support when non-contingent events are involved.

6. Limitations and Future Research

Unlike most other qualitative studies, the current study was based on a single interview with each participant. Despite vigorous effort to ensure the representativeness of all interview participants to their cultural origin, the conventional triangulation among sources of ethnographic data was not made possible. This may have rendered the results less depth. However, as indicated earlier in the paper, part of the purpose of the current ethnographic inquiry is to reveal potential forces, rather than pinpointing causes, that operate behind students' achievement beliefs, which directly or indirectly shape or reinforce their achievement endeavors. The "pro-ability" or "pro-effort" orientations detected in the study, therefore, require

follow-up research that takes on a fine-grained or longitudinal approach to validate the current findings.

Also, the different roles of the researcher—the primary investigator, a native Taiwanese, and a Chinese-English bilingual who has finished her graduate studies in the United States, may have set boundaries on how far she could penetrate the three target cultures. While the view on Taiwanese students may be presented more from an “emic” perspective, the views on American and Chinese-American students are more likely an “etic” perspective. More in-depth research involving researchers who are natives of the respective cultures is thus strongly recommended. The current research, despite all the drawbacks, still lays proper groundwork for further investigation.

Appendix A

Interview Questions

Home Environment:

1. Do your parents or significant others play an important role in your educational experience?
2. How would you describe your parents' parental style? In what way does their parenting help your academic performance? In what way does it hinder, if any, your academic performance?
3. In general, how do your parents or significant others respond to your good performance at school?
4. Try to think back when you were a child, how did your parents react when you brought home a straight-A report card? Did they give you any reward? Did they always do the same? How did you like their response? Why? What impact do you think the reward, if any, had on your subsequent learning? Are you likely to do the same when you become a parent? Why?
5. In general, how do your parents or significant others respond to your poor performance at school?
6. Try to think back when you were a child, how did your parents react when you almost failed an important exam? Did they give you any kind of punishment? Did they always do the same? How did you like their response? Why? What impact do you think their reaction or punishment, if any, had on your subsequent learning? Are you likely to do the same when you become a parent? Why?
7. Have your parents talked about their expectations for you in terms of your education and career? How do they express these expectations? Are they explicit or implicit? How do you feel about those parental expectations? How much do

you think you are under the influence of these expectations in terms of your educational and career aspirations?

8. Looking back, what would you have done differently to your educational experience? Why or why not? What would you wish your parents had done differently to you? Why?

School Environment:

1. Can you give me a brief summary of your schooling history?
2. How did you like school when you were a child? How do you like it now? What do you think might have influenced your perception of school?
3. What was your most salient memory about grade school, high school, and college? How would you describe your life in grade school, high school, and college, in a few words?
4. What was your favorite subject matter in grade school, high school, and college? Why? Were you good at it? If yes, since when? How did you become interested in and good at it? Did your family, teachers, or peers influence your preference over the course? How? Do you think you are talented in that area?
5. What was your least favorite subject matter in grade school, high school, and college? Why? Have you been relatively unsuccessful at it? If yes, since when? Do you think you can become good at it if you want to? Has this preference been influenced by anyone surrounding you?
6. How did you choose your academic major, if any? Did anyone or anything influence your choice?
7. Do you plan on going to graduate school? Why or why not?

Appendix B

American Students' Interview Comments Regarding Ability and Effort

Name	Interview comment
Ben	I've always been very interested in science ever since I was in grades school. It always came naturally. I never really had to do much work in it. Like all the tests were easy. All the kids were failing and studying for days, I'd walk in and just pick up the stuff easily 'cuz that's what I liked. It was just interesting, and not even studying for it and get an A on the test.
Jane	I always liked science, 'cuz studying subjects about the stars and stuff, I just found it interesting. I have been (successful) until recently (chuckles). I have always, and that's why I wanted to go to medical school, but I hate chemistry. I like biology. I believe that, like, when I'm studying for chemistry tests, I do feel like there's only so much I can do, and I do get frustrated. I get to a point where, not so much that I think I can't learn anymore, but I just feel I'm frustrated, I want to go to sleep.
Matt	Computer was always my favorite subject all the way through 'cuz there's always something cool I can learn from computer. A lot of people say, "well, if you are so great with computer, why aren't you good at math?" I remembered my first encounter with math, it was doing addition. I'd look at it, I'd just write down any number so I can go off and work on other stuff. So after a while, I just [. . .]. Anything involving math word problems, those drive me insane. I barely made it through calculus. My dad started to follow after me. He teaches math like calc and pre-calc. He sucked up all the math genes and I got none of them (chuckles). I did the effort thing. I tried so hard on this (calculus course) after being up for hours after hours cranking up these problems.
Kara	Probably math, it always seemed easier for me than everyone else. If I learn it, I usually remember it. I remember things or tricks that would help me do problems quickly. But I put a lot of time into it. A lot of my other friends, either they came from like divorced families, or their parents weren't home. My parents were home at night with me, so they kinda pushed me along, made sure I did my homework. I know that I worked hard, it wasn't just the natural ability. I always work hard to get where I am now even. So probably the repetition, actual studying and practice.

Kurt	I think English, maybe yes, I think I have a lot of given talent in that, verbal and written skills. I think I have been blessed with talents in those areas without a whole lot of work. Maybe that's one of the reasons I like it. As far as biology, I don't know, I know I've been blessed with good memory, I know it's a family thing. So that's helped with biology, it's just a lot of memorizing type of stuff. Yeah, definitely in those areas.

Chinese-American Students' Interview Comments Regarding Ability and Effort

Name	**Interview comment**
Nina	I guess everyone is born with a certain amount of ability, but it can be improved. Like you acquire ability, you learn from your mistakes. As you grow older, you get better, whether it's through repetition or just sheer learning over your past. I think they (ability and effort) are equally important, it's like 50-50. I don't think it can ever be completely effort or completely ability. But you know, there's like a bell curve distribution supposedly for people on top, I believe in that, definitely there's like a cap. Everyone worked at their full potential, there'll still be that curve. There're still gonna be people who are better than others. Even if I do my best, I still won't be able to reach like certain people, like Einstein (chuckles) or something, There're always gonna be, yeah, definitely, ability limits.
Kenny	I guess, maybe math I liked, it's generally easier than English. I didn't really like English that much usually. I never did as well in English as in math. I don't think I'm especially talented in math, no, not especially (laughter). Maybe instinctively I think it's purely hard work and stuff, just the environment and be working hard. Maybe background, 'cuz at home, my parents, when they speak to me, their English isn't probably as good as the parents who were born here. Just from that, my English skills are just in general a little bit less. Most people (in my high school) had to struggle more in English than in math. It just seemed that math was the class I would always get the A if I just did the work.

Tonya	I think in most things you have to do in life, it's a combination of both. If you don't have any ability to do anything, of course no matter how much effort you put in it, you're not gonna get anywhere. But without putting effort in, usually your ability doesn't get you far enough. They are almost intertwined, I think. I'd say probably, effort, um, not to put anyone down, I've known a lot of child prodigies where they've always been told who they are, and they don't put in any effort; and I've seen people who are said to be average putting a lot of effort in and have gone further than the person who performed with a lot of ability. I think the realization that I won't always be good at anything I want to do. There are things that I don't have the aptitude for, but I know I could do better had I had the time and commitment, but I know also there're certain areas where despite no matter how much time and commitment I put in, I won't do as well as a person, say, next to me.
Jim	When I was in junior high school, we had to take a test to go into high school in New York. And for some reason, I just studied, not very hard, but very long. I spent like a whole year and a half for that test, and I did very well, better than I though I did, and incidentally, I think, better than a lot of my peer schoolers smarter than me going into that same high school. That incident pointed to me that ability helps, but it's not the number one reason, that effort, if you put in enough over a long period of time, it works. I'm a junior, so far I've realized it's *all* effort, forget ability, at least in this school. I realized that if you put in a reasonable effort, not even like a Herculean effort, if you will, you can fairly assume you would have an A; but if you just want to get by, you only get a B, that's all. I think especially undergraduate, the materials definitely are not out of anyone's reach.
Wayne	If someone has a talent, then if they don't get experience, then that talent wouldn't get realized, then it doesn't matter if they have that talent. But if someone has the experience, but doesn't have enough talent, (s/he) could only go, reach certain point, certain level of achievement, and then they won't be able to go on. I mean they are related, it's like one is lacking, the other, I think effort, if you don't make an effort to use a talent you have, you are not gonna get anything out of it. Ability is basically what people have naturally, but also what they acquire, of how much of that natural talent has been realized. What you are born is potential, what you acquire is what you have the realization of the potential.

Taiwanese Students' Interview Comments Regarding Ability and Effort

Name	**Interview comment**
Chen	They made us put in the same amount of effort during our practice (for the sport), so talent may have played a more important role there. I think at whatever level I performed at the time, my talent explained up to 60% of it. But if I had put in more time and practice, I would've done even better, and more percentage of my performance would've been accounted for by my effort. I think (pause), talents would weigh less as you advance into higher levels of performance. As for school work, I think it varies from person to person on how much effort we choose to put in. Someone may do well because he puts in more effort, not because he's more talented, so I believe effort is more important in academic work.
Hsu	Practice may do some good. Still, if someone is not as sharp in a particular area, no matter how hard s/he tries, s/he would never fully master the material, whereas it may be easier for someone with the given talent to pick it up effortlessly. So I'd say practice could only do so much (for some people) and has its limits.
Liu	I liked math because I had always done well. I practiced a lot, plus, (pause) 'cuz my aunt taught math, so she kept an eye on me and often reminded me the importance of practice. She would assign me work to practice with, so I gradually built my competence through practice. Back then (in junior high school), I thought it was mostly my talent that initiated my interest in math and kept me going. When I got into senior high school, I still had this belief that I was good in math, but there wasn't someone like my aunt to watch over me anymore. So I didn't practice as much and began to do less well. That's when I realized that effort does make a difference. I probably wouldn't have said so had you asked me this when I was in junior high (chuckles).

Chang	Initially I always did very well with math without too much effort, but later on I became more devoted to it. I spent more time on it, so the sense of achievement sort of feeds on itself. When I was little, I learned and practiced the mental arithmetic, and that probably helped me with my math performance. The concepts just came easier for me. In those years, I probably spent two-thirds of my entire study time on math. And because I did well, I'd spend more time on it, which only made me do better. I've always thought it was ability, but now that you asked, I think that effort probably has a lot to do with it, too. No, I don't believe that there's such a thing that a subject matter can get so hard that, without some talent, one cannot master it.
Ko	I was a very good student in grades school. I remember I liked math a lot and always got perfect scores. In junior high, I was still good at math. My teacher often praised me in front of the whole class. But in senior high, I didn't work as hard on math as before, because I thought I was good enough to not have to work hard. I didn't do very well as a result. The material was a lot harder, if you don't work hard, you can't catch up after a while. However talented you are, a lack of effort is gonna have an impact somewhere, somehow. I mean, natural talent is very important, but you still need to put in some effort. However, I believe natural talent is more important than effort.

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