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Behavioral and Emotional Problems Among Thai and American Adolescents: Parent Reports for Ages 12–16

John R. Weisz, Somsong Suwanlert, Wanchai Chaiyasit, Bahr Weiss, Thomas M. Achenbach, and Karen L. Eastman

We studied adolescents' behavioral and emotional problems in the United States and in Thailand, a Buddhist country in which, reportedly, aggression is discouraged and self-control, emotional restraint, and social inhibition are encouraged. Standardized parent reports on 118 problems revealed 45 Thai–U.S. differences. Thai adolescents were reported to show more overcontrolled problems (e.g., shyness, compulsivity, inhibition of talking, fearfulness, and constipation) than American adolescents ($p < .0001$). The two groups did not differ reliably in total undercontrolled problems, but Americans showed higher levels of direct, overt, and interpersonally aggressive undercontrol (e.g., fighting and bullying), whereas Thais showed more indirect and subtle undercontrol that was not interpersonally aggressive (e.g., sulking and sullenness). The findings suggest that different cultures may be linked to different styles of adolescent problem behavior.

Various theories suggest that culture may influence the forms and prevalence of atypical behavior and psychopathology (Al-Issa, 1982; Draguns, 1973; Marsella, 1979; Weisz, 1989). Much of the research testing this notion has focused on adults, but patterns of child and adolescent psychopathology may be subject to cultural influence as well. Culturally mediated values and expectations, and adult behavior toward children and adolescents, may influence the types of problems the youngsters show. One result may be cross-cultural differences in the prevalence of various child problems.

The study of such differences, and cross-cultural similarities as well, may contribute to developmental theory in at least two ways: (a) by suggesting hypotheses about culturally mediated child-rearing and socialization practices that may be linked to disturbances in development and (b) by suggesting which patterns of disturbance may be most strongly influenced by culture-specific forces and which may be shaped by more culture-transcendent forces. More generally, the data may enrich the base of information on the prevalence and patterning of developmental dysfunction in non-Western cultures.

John R. Weisz, Department of Psychology, University of California, Los Angeles; Somsong Suwanlert and Wanchai Chaiyasit, Child Mental Health Center, Bangkok, Thailand; Bahr Weiss, Department of Psychology and Human Development, Vanderbilt University; Thomas M. Achenbach, Department of Psychiatry, University of Vermont; Karen L. Eastman, Department of Psychology, University of California, Los Angeles.

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Correspondence concerning this article should be addressed to John R. Weisz, Department of Psychology, Franz Hall, University of California, 405 Hilgard Avenue, Los Angeles, California 90024-1563.

To maximize the conceptual and empirical yield of research in this area, it is important to select (a) cultures that are different in theoretically significant ways and (b) problem patterns or syndromes that theory suggests may be related to those cultural differences. The syndromes selected for study here were the two most frequently identified in factor analytic research with children: *overcontrolled* or internalizing problems (e.g., shyness, somaticizing, and depression) and *undercontrolled* or externalizing problems (e.g., disobedience, fighting, and impulsivity). These syndromes have been found in more than 20 factor analytic studies (many reviewed by Achenbach & Edelbrock, 1978).

What causes some youngsters to develop overcontrolled problems whereas others develop undercontrolled problems? Biological factors may well play a role (see, e.g., Gray, 1982; Kagan, Reznick, & Snidman, 1987). In addition, some evidence (Achenbach & Edelbrock, 1978; Hetherington & Martin, 1986) and theory (Weisz, 1989) focuses on child-rearing and socialization factors. Overcontrolled problems are linked to strict parenting, parental modeling, and socialization that encourages self-control and emotional restraint; undercontrolled problems are linked to more permissive parenting, marital separation and divorce, and tolerance of aggression.

In this investigation, we studied two cultures whose apparent differences along these dimensions might be expected to foster differences in the prevalence of child and adolescent over- and undercontrolled behavior. The two cultures were Thailand and the United States. Thai adults, 95% of whom are Buddhist, are said to be unusually intolerant of such undercontrolled behavior as aggression, disobedience, and disrespectful acts in children (Gardiner & Suttipan, 1977; Moore, 1974; Suvannathat, 1979). Children are taught to be peaceful, polite, and deferent —to strive for *krengchai,* an attitude of self-effacement and humility that aims to avoid disturbing others (Phillips, 1965; Suvannathat, 1979). Thai youngsters are also taught to inhibit outward expression of anger and other strong emotions (Gardiner, 1968; National Identity Office of the Kingdom of Thailand, 1984; Suwanlert, 1974) in ways that seem to foster over-

controlled behavior. As one Thai student put it, "Parents train their children not to contest the point that they think is right. So, when I am angry with my parents or any elder brother or sister about their regulation or advice, I must be quiet." (Gardiner, 1968, p. 225). Another student commented, "The elders teach their grandchildren to collect their feelings and not show the anger." (p. 225). Some researchers (e.g., Boesch, 1977; Sangsingkeo, 1969; Suwanlert, 1974) have suggested that such Thai customs may foster not only politeness and nonaggression but inhibition and anxiety as well.

If Thais, compared with Americans, are less tolerant of undercontrolled behavior and more tolerant of overcontrolled behavior, one result may be differences in the prevalence of the two types of child problems. Through a kind of suppression–facilitation process (see Weisz, 1989; cf. Draguns, 1973), the cultural patterns we have described might make (a) overcontrolled problems more likely in Thai than in American children, or (b) undercontrolled problems less likely in Thai than in American children, or (c) both.

The evidence thus far supports only one of these possibilities. Using a standardized parent-report instrument, Weisz, Suwanlert, Chaiyasit, Weiss, et al. (1987) conducted an epidemiologic study focused on general population samples of Thai and American children between 6 and 11 years old. In this study, Thai children were rated higher than American children on overcontrolled problems, but there was no reliable cross-national difference in the prevalence of undercontrolled problems. Such findings raise the possibility that the Thai cultural factors noted previously may contribute to the development of overcontrolled problems without significantly suppressing undercontrolled problems—a pattern suggested in Gardiner's (1968) research with Thai students. Gardiner's work suggested the possibility that Thai cultural pressures for self-control and emotional restraint contribute to overcontrolled problems as youngsters try to inhibit and suppress impulses (e.g., to express feelings) but that undercontrolled problems are not actually reduced significantly in the process because the impulses that stimulate them are so difficult to suppress. The pattern is illustrated by quotations from three Thai students asked by Gardiner (1968) what to do when angry. One student said, "Anger does not give any good effect. . . . We should control ourselves in order to make us happy. Although I know this fact, it is hard for me to control myself." (Gardiner, 1968, p. 225). A second student answered, "I want to be one of the persons who can make their feelings disappear, but I can't deny my feeling. . ." (p. 226). A third student put it succinctly: "I want to follow the Buddha [who taught that 'anger is conquered by not being angry'], but I can't." (p. 226).

In the present study we sought further evidence on whether cultural pressures toward self-control and emotional restraint might foster development of overcontrolled problems without concomitant suppression of undercontrolled problems. We compared general population samples of Thai and American adolescents between the ages of 12 and 16, using the instrument and procedures Weisz, Suwanlert, Chaiyasit, Weiss, et al. (1987) used to study 6- to 11-year-olds. The focus on adolescents was useful, and puzzling, theoretically. One might argue that the impact of culture would be especially pronounced in adolescence because cultural factors have had more time to operate than among children. On the other hand, one might argue that culture effects would be reduced in adolescence, outweighed by the increased influence of biological effects (e.g., puberty). Either way, an adolescent sample provides a useful context for testing the Culture × Problem Type hypothesis we have outlined; the hypothesis would be supported by a Culture × Problem Type interaction, with the Thai–U.S. difference significant for overcontrolled problems but not undercontrolled problems.

We also probed for sex differences and interactions of sex with culture and age. In the United States, boys are particularly likely to develop undercontrolled problems (Achenbach & Edelbrock, 1981; Rutter & Garmezy, 1983). Some have suggested that sex typing and parental behavior may foster this pattern (see Maccoby & Jacklin, 1974). In Thailand, sex-typing seems in some respects almost the reverse of U.S. patterns; boys receive more rigorous training than girls in Buddhist ideals, and all boys (but not girls) are expected to reside in the temple for a period of priesthood before marriage, typically during adolescence. Are such gender differences associated with a moderating, or reversal, of the sex differences found in the United States? Or are sex differences like those found in U.S. samples robust enough to be found in so different a culture as Thailand? Previous research (Weisz, Suwanlert, Chaiyasit, Weiss, et al., 1987) has yielded little evidence of Sex × Culture interactions among children. However, because the socialization of boys in Thai and Buddhist values is particularly intense during adolescence, it is possible that such interactions emerge in the teen years. We explored this possibility.

In addition to testing the Culture × Problem Type hypothesis and addressing the question of Sex × Culture interactions, we sought to add to the currently scanty data base on individual problems in various cultures. Toward this end, we surveyed the prevalence of 118 clinically significant problems, testing culture, gender, Culture × Gender, and Culture × Age effects on each.

Method

Subjects and Research Design

The total sample numbered 800 adolescents: 300 from Thailand and 500 from the United States. Within each culture, the sample was balanced for age and sex. In the Thai sample there were 30 boys and 30 girls at each yearly age level from 12 to 16; in the U.S. sample there were 50 boys and 50 girls at each yearly level. The sample formed a 3 (age group: 12–13, 14–15, and 16 years old) × 2 (culture: Thai vs. U.S.) × 2 (sex) design.

Of the 300 Thai respondents, 56% were mothers, 29% fathers, and 15% other guardians; in the U.S. sample, the corresponding figures were 79%, 16%, and 5%. Given this cross-national difference in informant profile, we analyzed the impact of informant on our findings (discussed later). All the Thai sample were Asian, with 99% ethnic Thai and 1% ethnic Chinese. The U.S. sample was 80% Caucasian, 19% African American, and 1% other. Given the central role of religious tradition in Thai culture, we asked Thai parents to indicate their religious affiliation, if any; 96.4% were Buddhist, 1.3% Muslim, and 2.3% Christian.

We sought a Thai socioeconomic status (SES) classification scheme based on parent occupation data (which we had collected). We found five systems proposed by various investigators, but none of these had validity information or sufficiently detailed coding procedures to al-

low us to apply the system to our data. So, instead, we applied Hollingshead's (1957) SES system to all parent occupations in both countries. The mean rating on Hollingshead's 7-point scale (7 = lowest SES) was 3.89 in the U.S. sample and 4.52 in the Thai sample. The Thai mean should be viewed with caution, however, because it involved use of an American system in a culture for which it was not designed. Nonetheless, for the sake of completeness, we assessed the impact of cross-national differences in these SES scores on our findings (also discussed later).

Sampling Procedures

U.S. sample. The American sample was drawn from urban, suburban, and semirural environments in Washington DC, Maryland, and Virginia. Census tract and block data were used to randomly select those families asked to participate; of those asked, 82.3% took part. For other procedural details, see Achenbach and Edelbrock (1981).

Thai sample. The Thai sample was obtained from urban, suburban, and semirural environments in the five major regions of Thailand: Bangkok and the surrounding vicinity (three districts in central Bangkok, plus Nonburi and Dhonburi), central (Chainat), north (Chaing Mai), northeast (Nakhon Ratchasima), and the southern peninsula (Surat Thani). The procedure was designed to roughly resemble the selection of urban, suburban, and semirural environments sampled in the United States. To identify subjects, we used the comprehensive population directories for each province (*changwat*); from each directory we randomly selected households in which records indicated that one or more adolescents lived. We sent letters to these households and followed up with visits. Of those families having an adolescent living at home, 72.9% agreed to participate.

Thai data were collected in 1987–1989, U.S. data in 1976; thus it is possible that secular trends may have influenced our findings. We know of no evidence confirming such trends during this period, but readers should be alert to future reports on secular trends and should weigh the implications for interpretation of the findings reported here.

Interview Procedures

All U.S. interviews were conducted in the subjects' homes by one of five trained interviewers; Thai interviews were conducted at home by one of two trained Thai interviewers. The interviewers determined whether the adolescent had been referred for mental-health-related services during the previous year. The small number of children (2% of the Thai sample; less than 3% of the U.S. sample) for whom the answer was yes were not included in the sample; it was thought that these children's behavior or their parents' reports (or both) might have been influenced by contact with mental health professionals. The interviewer then read aloud a standardized problem-report measure while the parent followed along on another copy. As the parent answered, the interviewer recorded the answers.

Child Behavior Checklist. In the United States, the problem-report measure was the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983). It includes questions about child and parent demographics, questions about the child's competence in school and elsewhere, and a list of 118 specific problems (e.g., "Argues a lot," Fears going to school," Feels too guilty"). Using the following scale, parents indicate the degree to which their child shows each problem: 0 = *not true of the child;* 1 = *somewhat or sometimes true;* or 2 = *very true or often true.*

To generate an estimate of interinterviewer reliability while avoiding a confounding of interinterviewer and test–retest reliability, Achenbach and Edelbrock (1981) had three interviewers interview parents of triads of children who were matched for age, race, gender, and SES. Intraclass correlation coefficients (ICCs) were derived from analyses of variance (ANOVAs) in which scores for a particular item obtained by the different interviewers generated the within-cell variance and scores on different items generated the between-cell variance. The resultant ICC for interinterviewer reliability for total scores on the CBCL was .96. Because the procedure did not involve separate interviews of the same children by different interviewers, it was not reasonable to compute interinterviewer ICCs for the individual items. However, individual item reliabilities were computed as a part of test–retest assessment. The overall test–retest ICC was computed for the same children retested after a one-week interval; the total problem ICC was .95. Although very low means, and thus very low variability on many of the items, ruled out fully meaningful assessment of test–retest reliability, we nonetheless computed ICCs separately for each of the 118 items. The median ICC value, across all individual items, was .66 (range: −.03 to 1.00, with lower values for items that had few or no nonzero ratings and thus very low variability).

Thai Youth Checklist—development, format, and content. Thai interviewers administered the Thai Youth Checklist (TYC). This Thai-language measure was designed to be sufficiently similar in format and content to the CBCL to permit cross-cultural comparisons, but also to be sufficiently sensitive to Thai culture and child behavior to detect patterns of particular importance in that country. The TYC format is the same as that for the CBCL: demographic items, followed by competency items, then problem items, using a 0–1–2 rating scale. Some competency items are patterned after those of the CBCL, but most are different (e.g., we added "Taking care of younger siblings," a role often played by Thai youth, and we dropped "Is your child in a special class?" because most Thai schools have no special classes). The 118 CBCL problem items are included as the initial items in the TYC and are listed in the same order as on the CBCL, except that we divided CBCL Item 105, "Uses drugs and alcohol" into two TYC items, "Uses alcohol" and "Uses drugs," at the recommendation of Thai judges. For the present analyses, though, we combined these two TYC items (giving to the composite item the higher score of the two individual items), thus forming, in effect, a single problem item, as on the CBCL. In addition, 24 other problem items were added to the TYC as the last items in the checklist. Of these, 20 were derived from data on the referral problems of youngsters admitted to Thai child mental health clinics (reported in Weisz, Suwanlert, Chaiyasit, & Walter, 1987; Weisz & Weiss, 1991), and 4 were added at the recommendation of Thai clinicians who reviewed drafts of the TYC; these 24 Thai items were not included in analyses for the present study; for this study, analyses focused only on the 118 problem items that are present in both the TYC and CBCL.

The TYC was translated into Thai (following Brislin, 1970; Draguns, 1982; Wagatsuma, 1977) in three steps of translation and back translation. First, a professional translator translated the TYC from English to Thai; then two Thai clinical psychologists back-translated it into English. Two similar sequences followed, with translation and back translation carried out by bilingual clinical psychologists and a bilingual anthropologist. We aimed for linguistic equivalence and for simplicity of expression. The translation was easily understood by most Thai parents.

Thai Youth Checklist—reliability assessment. To estimate interinterviewer reliability, we had two Thai interviewers independently interview the same parents of the same 20 adolescents. The overall total problem ICC was .85; the median ICC across all individual items was .62 (range: −.08 to 1.00, with lower values for items having few or no nonzero ratings). Test–retest reliability was assessed with a sample of 20 parents of adolescents, using a one-week retest interval. The overall total problem ICC was .83; the median ICC across all individual items was .50 (range: −.11 to 1.00, again with low values for items having few or no nonzero ratings). We know of no published standards for interpreting ICC values; however, they are considered to be more conserva-

tive estimates than Pearson correlations. As an example, in Achenbach and Edelbrock's (1983, p. 91) table of average Pearson correlation values corresponding to various ICC values for their CBCL profile type data, an ICC value of .50 corresponds to an average Pearson correlation of .82.

Thai Youth Checklist—overcontrolled and undercontrolled factors. Given our interest in the distinction between overcontrolled and undercontrolled problems, we sought evidence on whether the TYC might yield factors resembling the over- and undercontrolled factors found for the CBCL (see earlier discussion). One of our long-term goals is to address this question by applying principal components analysis (PCA) to TYC data from large samples of clinic-referred Thai youngsters. However, because few child mental health clinics exist in Thailand, the accumulation of such data is a very slow process. Thus, for the short-term, we applied PCA to the TYC data from the present sample. Note, however, that this analysis had significant limitations: (a) The sample size was small for the number of items being analyzed; (b) because the sample was not composed of clinic-referred children, mean ratings were low for most items; and, accordingly, (c) many items had such low variability that they could not contribute much to a principal components solution. Thus, results of the PCA presented here should be considered suggestive, not definitive.

We followed PCA procedures as parallel to those of Achenbach and Edelbrock (1983) as seemed feasible, given the nature of our data. Because the purpose was to explore the possibility of an overcontrolled and undercontrolled factor resembling the two factors found by Achenbach and Edelbrock (1983), we restricted the solution to two factors; these were subjected to oblique promax rotation. Following the procedure of Achenbach and Edelbrock, we carried out separate analyses for boys and for girls, and items were considered to load on a factor if they were correlated at or above .30 with that factor. Because a number of our subjects were not in school, we omitted four school-related items (e.g., "Truancy," "Fears going to school").

For both genders, the PCA appeared to identify factors resembling overcontrol and undercontrol. For boys, the Overcontrolled factor included 30 items (e.g., obsessions, cries, fears, anxious, feels guilty, self-conscious, shy, and sad), and the Undercontrolled factor included 46 items (e.g., argues, brags, fights, lies, sets fires, steals at home, curses, and vandalism). For girls, the Overcontrolled factor included 25 items (e.g., obsessions, day dreams, nervous, nightmares, anxious, tired, self-conscious, shy, and sad), and the Undercontrolled factor included 32 items (e.g., argues, brags, demands attention, lies, steals at home, stubborn, curses, and threatens). On their face, the Thai factors seemed to resemble the corresponding American factors identified by Achenbach and Edelbrock (1983). However, to assess the resemblance empirically, we computed correlations between the factors produced by the two scorings (see Gorsuch, 1983). This was achieved by (a) computing over- and undercontrolled scores for each subject on the basis of Achenbach and Edelbrock's factors, (b) computing over- and undercontrolled scores for each subject on the basis of our own PCA factors derived from the Thai sample, and (c) computing correlations between these two sets of scores. For boys, the U.S.-derived and Thai-derived overcontrolled scores were correlated .82 ($p < .0001$), and the two undercontrolled scores were correlated .87 ($p < .0001$). For girls, the U.S.- and Thai-derived overcontrolled scores were correlated .82 ($p < .0001$), and the two undercontrolled scores were correlated .89 ($p < .0001$).

These findings support the existence of over- and undercontrolled factors within the Thai sample and further suggest that these Thai-derived factors are acceptably similar to the corresponding factors identified for U.S. adolescents by Achenbach and Edelbrock (1983). Because the factors reported by Achenbach and Edelbrock were based on large samples of clinic-referred children, the American factors appear more likely to be robust than the factors identified in the Thai analyses conducted here. For this reason, we relied on Achenbach and Edelbrock's factor definitions when conducting analyses involving over- and undercontrolled factors (see Results section).

Results

We assessed group differences in (a) total problem scores (i.e., the sum of all 1 and 2 ratings on the 118 specific problem items plus "Other physical problems" and "Additional problems"), (b) ratings on each of the 118 specific problem items, and (c) composite scores for over- and undercontrolled problems. Given the large sample and concomitant statistical power, effects at the .05 level were of only modest importance. Thus we set alpha at .01, and we interpreted all significant effects using Cohen's (1988) criteria for magnitude: ANOVA effects are labeled small if they account for 1%–5.9% of the variance, medium if they account for 5.9%–13.8% of the variance, and large if they account for more than 13.8% of the variance.

Total Problem Scores

The 3 × 2 × 2 (Age × Sex × Culture) ANOVA on total problem scores revealed a main effect for age, $F(2, 788) = 5.94$, $p < .01$. Mean total scores decreased with increasing age, from 20.25 to 17.30 to 15.86 for the 12–13-year-old, 14–15-year-old, and 16-year-old groups, respectively. The effect of age accounted for 1.47% of the variance, so it was judged small by Cohen's (1988) standard. No other effects were significant, although the main effect for culture was marginally ($p < .05$) significant, with Thai and American adolescents averaging 19.7 and 17.3, respectively.

Individual Problems

Our 3 (age) × 2 (sex) × 2 (culture) ANOVAs on the 118 individual problems revealed main effects of culture on 45 problems. Table 1 shows these effects, as well as all sex and age effects. The first (left) column of the table lists problem type (e.g., overcontrolled), the next column shows the problem number and content, and the remaining columns show significant effects and the percentage of variance accounted for by each. Of the 45 culture main effects, 7 were medium or large according to Cohen's (1988) criteria. Six of the seven medium effects reflected higher Thai than American means, and all six were overcontrolled problems. (One of these problems, "sulks," loaded on the overcontrolled syndrome for boys and girls and also on the undercontrolled syndrome for boys in Achenbach and Edelbrock's [1983] analyses; however, their 1991 analyses showed it loading only on the overcontrolled syndrome.) Of the problems showing culture main effects, those more common in the United States than in Thailand were about equally divided between overcontrolled ($n = 7$) and undercontrolled ($n = 6$). Problems more common in Thailand than in the United States, by contrast, were five times as likely to be overcontrolled ($n = 15$) as undercontrolled ($n = 3$).

Analyses of individual items also revealed 17 gender effects. Of these, 9 involved higher ratings for boys than for girls; 8 of these were undercontrolled problems and , one was mixed. Of the 8 problems rated more prevalent for girls, 5 were overcontrolled and only one was classified as undercontrolled for adolescent girls.

Individual item analyses also revealed eight main effects of age (the percentage of variance accounted for by each full age effect is shown in Table 1). To explore these effects more fully, we carried out post hoc tests of the linear and quadratic age trends. Six of the eight effects showed significant linear declines (with a nonsignificant quadratic term) in prevalence with increasing age (see Table 1). One effect showed a significant quadratic effect with a nonsignificant linear effect, and one item (No. 105, "Alcohol and drug abuse") showed both a significant decreasing linear trend and a significant quadratic effect. No problem showed an increase in prevalence with age over the adolescent years.

Only two problems (Item 29, "Fears," and Item 64, "Prefers younger children") showed significant Culture × Sex interactions ($p < .01$ for both effects). Two significant interactions out of 118 approximated chance expectancy.

Composite Over- and Undercontrolled Scores

To compare groups on over- and undercontrolled problems, we computed two composite scores for each child, following a procedure used in earlier research (e.g., Weisz, Suwanlert, Chaiyasit, Weiss, et al., 1987). To calculate each child's overcontrolled score, we took the mean rating for problems that fit the empirically derived overcontrolled syndrome for that child's age and sex group in principal components analyses by Achenbach and Edelbrock (1983). Thus, the scale for this composite was the same as the scale for individual items, 0 to 2. We calculated an undercontrolled composite score in a similar manner. We then performed a 2 × 3 × 2 × 2 (Problem Type × Age × Sex × Culture) repeated measures ANOVA, with problem type as a within-subjects factor.

This analysis produced three significant effects, all involving problem type. The main effect for problem type was significant, $F(1, 788) = 27.78$, $p < .0001$, with higher levels of undercontrolled problems than overcontrolled problems being reported (0.20 versus 0.17). The effect was small, accounting for 3.26% of the variance. There was also a significant interaction between problem type and sex, $F(1, 788) = 14.62$, $p < .0001$; this effect too was small, accounting for 1.71% of the variance. We examined this interaction by testing simple effects of problem type within each gender group and by testing simple effects of gender within each problem type. The effect of problem type was significant ($p < .0001$) for the boys but not for the girls, with boys receiving higher ratings on the undercontrolled than the overcontrolled composite (0.21 versus 0.18). The effect of sex was nonsignificant for both over- and undercontrolled composite scores.

Finally, the theoretically important Problem Type × Culture interaction was significant, $F(1, 788) = 12.52$, $p < .001$; though small by Cohen's (1988) standards (accounting for 1.47% of the variance), the effect took precisely the form predicted in the introduction. We examined the interaction by testing simple effects of problem type within each culture and by testing simple effects of culture within each problem type. Thai and American adolescents did not differ significantly in their undercontrolled scores (M = 0.20 and 0.19, respectively), but Thai adolescents had significantly higher overcontrolled scores than their U.S. counterparts ($p < .0001$; M = 0.20 and 0.16, respectively). Viewing the interaction from another angle, the effect of problem type was nonsignificant for Thai adolescents but significant ($p < .0001$) for Americans, who had higher scores on undercontrolled than overcontrolled problems.

Controlling for the Impact of Socioeconomic Status and Informant

To control for the impact of SES and informant (mother, father, or other) on the findings reported so far, we carried out two series of general linear models (GLM) analyses, one focused on SES, one on informant. First, for all problem items that were significantly ($p < .05$) related to SES, we recomputed the previous Culture × Age × Sex analyses, entering the main effect of SES (as a continuous variable) first in the model. These tests allowed us to assess the extent to which our findings were robust with SES controlled. These new analyses led to only minor changes in the findings: A few previously nonsignificant effects became significant, and three previously significant effects (shown with a superscript *f* in Table 1) were reduced from $p < .01$ to $p < .05$.

In parallel analyses, for all problem items significantly ($p < .05$) related to informant, we recomputed the previous Culture × Age × Sex analyses entering the main effect of informant (as a categorical variable) first in the model. These tests also had quite minor effects on previous findings: A few previously nonsignificant effects became significant, and three previously significant effects (shown with a superscript *g* in Table 1) were reduced from $p < .01$ to $p < .05$.

Parallel analyses that focused on total problem, overcontrolled, and undercontrolled scores yielded no changes in the level of significance (i.e., $p < .01$, .001, or .0001) of any effects.

Discussion

In general, cultural differences between Thailand and the United States were associated not so much with differences in total problems reported as with differences in the types of problems reported for adolescents. Thai and American total problem scores differed by only 2.4 on a 240-point scale. Fewer than half the problem items showed a reliable cross-national difference, and only 7 of these differences were medium or large by Cohen's (1988) standards. Also, there was no culture main effect on total problems; however, this was due in part to the bidirectional effect of culture (i.e., Thai scores > U.S. scores for 25 problems; U.S. scores > Thai scores for 20 problems). The number of items (n = 45) that showed significant culture main effects among adolescents did not differ significantly from the number (n = 54) that showed such effects in an earlier epidemiologic study of children between 6 and 11 years old, $\chi^2(1, N = 236) = 1.41$, $p > .20$, and the direction of the differences was generally the same in the two studies. Thus, the findings suggest that the impact of culture was not markedly different for adolescents than for children.

Although the overall Thai–U.S. differences were modest, adolescents in the two cultures did differ rather markedly on one theoretically important dimension: reported levels of overcontrolled problems. This matches recent findings obtained with children between 6 and 11 years old (Weisz, Suwanlert, Chaiya-

Table 1
Significant Main Effects of Nationality, Sex, and Age on Problem Items

Problem type[a]	Item no. and brief description	Nationality[b]		Sex[c]		Age[d]	
		Effect	% of variance[e]	Effect	% of variance[e]	Effect	% of variance[e]
OB	5. Behaves like opposite sex			F > M**	2		
M	7. Brags	U > T***	4	M > F***	4		
U	8. Can't concentrate	T > U***	2			D*	1
UB	10. Hyperactive			M > F**	1		
OB	11. Clings to adults	T > U*	1			N*	1
OG	12. Lonely			F > M***	2		
O	14. Cries			F > M*[f]	<1		
UG	15. Cruel to animals	T > U*[g]	1				
U	16. Bullies	U > T***	2				
O	17. Day dreams	U > T***	3				
M	19. Demands attention	U > T*	<1				
U	23. Disobedient at school	U > T***	2	M > F*[g]	<1		
—	24. Doesn't eat well			F > M*	1		
UG	25. Poor peer relations	U > T**	1				
UG	26. No guilt after misbehaving					D**	2
M	27. Jealous	U > T***	2				
—	28. Eats nonfood	T > U***	4				
OG	29. Fears things	T > U***	6	F > M***	3		
O	31. Fears impulses	T > U*	1				
O	32. Needs to be perfect	U > T*[f]	<1				
M	33. Feels unloved			F > M*	1		
M	34. Feels persecuted	U > T**	2				
U	37. Fights	U > T*	1			D**	2
—	38. Teased	U > T***	4			D***	2
U	39. Bad friends	U > T**	1				
UB	44. Bites nails	U > T***	3				
M	45. Nervous	T > U*	<1				
OB	49. Constipated	T > U***	11				
O	51. Dizzy	T > U***	20				
—	55. Overweight					D*	2
O	56.A Aches and pains	U > T**	2				
O	56.B Headaches	U > T***	3				
O	56.F Stomachaches	U > T***	2				
—	58. Picks nose, skin	T > U***	4				
U	61. Poor school work			M > F*	<1		
UG	63. Prefers older children	T > U*[f,g]	<1	M > F***	2		
OB	64. Prefers younger children	T > U***	24				
O	65. Refuses to talk	T > U***	2				
OB	66. Compulsive	T > U**	2				
U	68. Screams			F > M*	<1		
M	69. Secretive	U > T***	4				
O	71. Self-conscious	U > T***	6				
UB	72. Sets fires			M > F*	1		
U	74. Shows off			M > F**	2		
O	75. Shy	T > U***	3				
OG	77. Sleeps too much	T > U*	1				
—	79. Speech problems	T > U**	2				
U	81. Steals at home			M > F*	<1		
OB	83. Stores unneeded things	T > U***	5			D***	2
O	85. Strange ideas	T > U*	1				
M	86. Stubborn	T > U***	2				
M	87. Moody	T > U**	1				
M	88. Sulks	T > U***	34				
M	93. Talks too much	U > T***	2				

Table 1 (*continued*)

Problem type[a]	Item no. and brief description	Nationality[b] Effect	Nationality[b] % of variance[e]	Sex[c] Effect	Sex[c] % of variance[e]	Age[d] Effect	Age[d] % of variance[e]
U	94. Teases a lot			M > F***	2		
OG	96. Sex preoccupations	U > T*	1				
OB	99. Too concerned with neatness			F > M*	1		
O	102. Lacks energy	T > U***	6				
U	105. Alcohol or drug abuse					N**	2
OM	109. Whines	T > U***	4				
OG	111. Withdrawn	T > U***	2				

Note. Problems are designated with their CBCL item numbers and brief labels indicating item wording.

[a] O = problem loads on overcontrolled factor for both boys and girls; U = problem loads on undercontrolled factor for both boys and girls; OB = problem loads on overcontrolled factor for boys only; OG = problem loads on overcontrolled factor for girls only; UB = problem loads on undercontrolled factor for boys only; UG = problem loads on undercontrolled factor for girls only; M = problem loads on both over- and undercontrolled factors for some age and sex groups; a dash indicates that the problem does not load on either over- or undercontrolled factors.

[b] T > U = Thais had higher mean ratings than Americans; U > T = Americans had higher ratings than Thais.

[c] B > G = Boys had higher mean ratings than girls; G > B = Girls had higher mean ratings than boys.

[d] Mean ratings showed an increase (I), decrease (D), or nonlinear (N) change with age.

[e] Percentage of variance in item ratings accounted for by each independent variable.

[f] Effect changed to $p < .05$ when socioeconomic status was controlled.

[g] Effect changed to $p < .05$ when informant was controlled.

* $p < .01$. ** $p < .001$. *** $p < .0001$.

sit, Weiss, et al., 1987), which indicated that Thai children show more overcontrolled problems than their American age-mates but without a concomitant suppression of undercontrolled problems (i.e., undercontrolled problems were about equally prevalent in Thai and American children). In this study, we probed for such a Problem Type × Culture interaction among adolescents, and we found it: Thai adolescents, compared with Americans, showed very similar levels of undercontrolled problems ($M = 0.20$ and 0.19, respectively) but showed significantly higher levels of overcontrolled problems ($M = 0.20$ and 0.16, respectively). This pattern, now evident among adolescents as well as children, is consistent with the hypothesis (suggested in Gardiner, 1968) that cultural pressures for self-control, emotional restraint, and social inhibition foster overcontrolled problems without significantly inhibiting under controlled problems. The finding serves to remind us that over- and undercontrolled problems do not constitute a hydraulic system and thus that forces that may facilitate the development of one problem type do not necessarily suppress the other.

The Thai–U.S. similarity in total undercontrolled problem scores may seem puzzling in light of the strong Thai prohibitions against so many forms of undercontrolled behavior (e.g., aggression, disobedience, and peer conflict). This makes it important to look beyond the overall summary scores to the individual problems that showed cross-national differences. In fact, the specific undercontrolled and mixed problems for which U.S. adolescents had higher scores than Thai adolescents appeared to include the kinds of direct, overt, and interpersonally aggressive undercontrol that would be most likely to be disapproved in Thailand: Item 37, "Fighting" (undercontrolled), Item 16, "Bullying" (undercontrolled), Item 23, "Disobeying at school" (undercontrolled), Item 25, "Poor peer relations" (undercontrolled), Item 39, "Bad friends" (undercontrolled), Item 7, "Bragging" (mixed), Item 19 "Demanding attention" (mixed). By contrast, the specific undercontrolled and mixed problems for which Thai adolescents had higher scores than American adolescents included more indirect and subtle forms of undercontrol not involving interpersonal aggression (behavior more likely to be tolerated in Thailand): Item 8, "Difficulty concentrating" (undercontrolled), Item 15, "Cruel to animals" (undercontrolled), Item 87, "Moodiness" (mixed), Item 88, "Sulking" (mixed), Item 86, "Stubbornness or sullenness" (mixed). These differences suggest the possibility of distinctive styles of undercontrol among adolescents in Thailand and the United States, styles that reflect the prevailing values and pressures of those adolescents' cultural settings.

Although the present findings agree, in some respects, with earlier data on problems reported for clinic-referred samples in Thailand and the United States (Weisz, Suwanlert, Chaiyasit, & Walter, 1987), there are potentially instructive areas of disagreement as well. In harmony with the present findings, overcontrolled problems were reported more often for clinic-referred Thai youngsters than their American counterparts; however, in contrast to the present findings, undercontrolled problems were reported more often for clinic-referred American children than their Thai counterparts. Moreover, certain somatic complaints that were reported much more often for clinic-referred Thai than American youngsters (e.g., headaches, which accounted for almost a quarter of all Thai clinic referrals and almost no American referrals) turned out to be more prevalent in the general population of children (Weisz, Suwanlert, Chaiyasit, Weiss, et al., 1987) and adolescents (present study) in the United States than in Thailand. Such findings, combined with recent data on adult attitudes (Weisz et al., 1988) and referability of problems (Weisz & Weiss, 1991) converge on the possibility that adults in Thailand are especially likely to refer their

children to psychological clinics if the mix of problems shown by the children includes seemingly somatic or medical concerns. The general point is that the profile of problems for which youngsters are typically referred to clinics in a particular country may be influenced partly by the prevalence of those problems in the country and partly by culturally mediated adult attitudes and sensitivities. If this is the case, then an understanding of links between culture and child psychological dysfunction will certainly require a blend of information on general population prevalence of child problems, adult attitudes toward those problems, and the referral of those problems for intervention.

Our findings on sex differences are generally consistent with earlier data from several other cultures (e.g., Achenbach & Edelbrock, 1981; Achenbach, Hensley, Phares, & Grayson, 1990). All the findings fail to suggest a strong influence of culture as a moderator of sex differences. As noted in the introduction, Thai Buddhist socialization of boys, especially adolescent boys, appears to discourage aggression and other forms of undercontrolled behavior to a much greater degree than does American socialization. Yet, we found no Culture × Sex interactions on the undercontrolled composite score or on individual undercontrolled problems. Instead, we found that boys of both cultures scored higher on the undercontrolled composite measure than the overcontrolled measure and that all of the individual problems showing significantly higher ratings for boys than for girls were undercontrolled. Most of the problems showing higher ratings for girls than boys were overcontrolled or mixed. These findings, so consistent with earlier data (see Achenbach et al., 1990; Rutter & Garmezy, 1983), suggest that the association of undercontrolled problems with boys and overcontrolled problems with girls may be quite robust across very different cultures and socialization practices and may thus result from relatively culture-transcendent causal forces.

Total problem scores declined steadily with increasing age. This effect appears to have reflected modest declines across many problems because individual item analyses revealed that only 8 of the 118 items showed age main effects. These effects generally suggested declines in dysfunctional behavior with increasing maturity. Strikingly, there was no evidence that culture interacted with developmental level to influence problem prevalence. Thus, the impact of age and gender appeared to be virtually unaffected by culture in this sample. Conversely, the impact of culture appears to have been influenced very little by age or gender.

Two qualifications of the findings are in order. The first concerns the parent-report format used here. Parent reports may well be the best available source of information on child and adolescent problems, yet parent reports may be subject to cultural influence in at least three ways. First, culture may influence parents' judgments about what is appropriate for youngsters at a given age, thus affecting opinions as to whether a particular child "talks too much" (Item 93) or is "too concerned with neatness" (Item 99). Second, culture may influence parents' views as to what is usual or normal, thus affecting ratings on such items as "unusually loud" (Item 104), "overtired" (Item 54), or "overweight" (Item 55). Third, culture may influence the way a concept is defined; for example, "swearing" (Item 90) in a Buddhist country such as Thailand does not often include forms of "taking the Lord's name in vain" that are central to swearing in the United States. So, in several ways, our means of assessing adolescent problems in the present study may have been biased by culture. In addition, there may well be cultural differences in the extent to which various behaviors on the checklist (e.g., Item 64, "Prefers playing with younger children") are considered to be problems. Finally, our findings may reflect reliance on parent reports as opposed to other sources of information; results might have been different if we had relied on adolescents' self-reports or on direct observations of problem behavior. Eventually, comparison of parent report, self-report, and observational data would be desirable.

The second qualification concerns causal explanations of the culture effects noted here. We have emphasized such factors as socialization that encourages self-control, emotional restraint, and behavioral inhibition. However, we must stress that Thai and American cultures differ from one another along many dimensions other than these (some might emphasize, e.g., individualism vs. collectivism or activity vs. passivity); a study such as the present investigation cannot identify which cultural factors are responsible for cross-national differences in the reported behavior of adolescents. In fact, it is even quite possible that a major causal role is played by factors that are not so much cultural as biological—for example, the behavioral inhibitory systems studied by Gray (1982) and Kagan (see Kagan, 1989; Kagan et al., 1987).[1] If this were the case, the search for an explanation of cross-national differences in problem prevalence would need to include the possibility that such biological influences are differentially distributed across various cultural groups and national boundaries (see Freedman, 1979). Certainly, at this early stage of cross-cultural inquiry, researchers need to remain open to the possible independent and interactive effects of both social and biological factors in the genesis of child and adolescent psychopathology.

[1] A number of the overcontrolled problems that were especially prevalent among Thai adolescents in this study and among 6- to 11-year-old Thai children in Weisz, Suwanlert, Chaiyqsit, Weiss, et al.'s (1987) study are strikingly similar to indicators of Kagan et al.'s (1987) notion of *behavioral inhibition*, which Kagan et al. linked to activation in the physiological subsystems that respond to novelty and challenge (e.g., the reticular activating system). These include Item 75, "Shyness," Items 29 and 31, "Fearfulness," Item 65, "Inhibition of talking," and even Item 49, "Constipation," which is often associated with sympathetic nervous system arousal (see Kagan et al., 1987).

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