

Epidemiology of Behavioral and Emotional Problems Among Thai and American Children: Parent Reports for Ages 6 to 11

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Abstract. Behavioral and emotional problems of childhood may reflect the influence of culture: prevailing values and socialization practices may suppress development of some problems while fostering others. The authors explored this possibility, comparing 360 6- to 11-year-olds in the Buddhist-oriented, emotionally controlled culture of Thailand with 600 American 6- to 11-year-olds. Standardized parent reports on 118 child problems revealed 54 Thai-U.S. differences ($p < 0.01$), generally modest in magnitude. Thai children were rated higher than Americans on 32 problems, particularly those involving Overcontrolled behavior (e.g., shyness, anxiety, depression). Across cultures, boys showed more fighting, impulsivity, and other Undercontrolled behavior than girls, and several age effects emerged. The findings provide epidemiological comparisons for two distinctly different cultures and contribute to a theoretical model of cultural influence. *J. Amer. Acad. Child Adol. Psychiat.*, 1987, 26, 6:890-897. **Key Words:** behavior-emotional problems, epidemiology, cross-culture, Thailand.

The literature on psychopathology has often linked cultural factors to patterns of disturbed behavior. Although most of the research has dealt with adults (Al-Issa, 1982; Marsella, 1979), culture is likely to be influential well before the adult years. Culturally-mediated values and expectations, and the associated behavior of parents and other adults toward children, may influence the types of behavior problems children show when distressed. One result may be cross-national differences in the prevalence of various child behavior problems.

The study of such differences, and cross-national similarities as well, might be useful in at least two ways. First, the data may enrich our base of general information on the epidemiology of child problems. Second, the research can contribute to theory on child psychopathology, suggesting, for instance, which patterns of child disturbance are most strongly influenced by social forces and which may be shaped by more culture-transcendent forces, such as gender or biological and cognitive development.

The present study, an epidemiological survey of child psychological problems in the United States and Thailand, was intended to enhance the scanty data on the prevalence of child problems across national boundaries. Toward this end,

we surveyed the prevalence of 118 clinically significant problems. In addition, we sought to contribute to a theory of cultural influence by focusing on two broad behavior problem syndromes linked theoretically to Thai and U.S. cultural patterns.

The syndromes were the two most frequently identified in factor analytic research with children: Overcontrolled problems (e.g., shyness, somaticizing, depression) and Undercontrolled problems (e.g., disobedience, fighting, impulsivity). These syndromes have been found in more than a dozen factor analytic studies (Achenbach and Edelbrock, 1978) and in research with not only Americans (e.g., Achenbach and Edelbrock, 1983; Gordon and Gallimore, 1972; Toulaiatos and Lindholm, 1976) but also Britains (e.g., Collins et al., 1962), Sicilians (Peterson, 1965), Japanese (Hayashi et al., 1976), and Greeks, Finns, and Iranians (Quay and Parskeuopoulos, 1972).

Here, we explored the possibility of cross-national difference in the prevalence of Over- and Undercontrolled problems. One reason to suspect this possibility is that 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 and Suttipan, 1977; Moore, 1974; Suvannathat, 1979). Children are taught, instead, to be peaceful, polite, and deferent—to strive for *krengchai*, an attitude of self-effacement and humbleness that aims to avoid disturbing others (Phillips, 1965; Suvannathat, 1979).

Thai children are also taught to inhibit and control the outward expression of anger and other strong emotions (Gardiner, 1968; National Identity Office, 1984; Suwanlert, 1974) in ways that seem to involve encouragement of Overcontrolled 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." Another student commented, "the elders teach their grandchildren to collect their feelings and not show the anger" (Gardiner, 1968, 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 Overcon-

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trolled behavior, one result may be cross-national differences in the prevalence of the two types of child problems. Through a kind of *suppression-facilitation* process (cf. Draguns, 1973; Weisz et al., in press) the cultural patterns described above might make Overcontrolled problems more likely in Thai than in American children and Undercontrolled problems less likely in Thai than in American children.

A recent study suggested precisely this pattern of differences. Weisz et al. (in press) sampled 760 child clinic admissions in Thailand and the United States, recording the referral problems noted by parents in both countries at the time of clinic intake. Problems that earlier research had shown to load on the Overcontrolled syndrome were indeed more frequently noted for Thai than American children; and Undercontrolled problems were reported more often for American than Thai children. These findings are consistent with the ideas advanced above. Because the study was based on clinic-referred children only, however, it cannot tell us about the prevalence of Over- and Undercontrolled problems among nonreferred children in the two countries. Moreover, the clinic data were drawn from unstructured problem reports by referring parents, based on methods that were not standardized across cultures.

The present study, by contrast, used a standardized research instrument designed to permit relatively uniform assessment of child problems across national boundaries, and the study focused on the general child population rather than clinic-referred children. The study was thus a systematic epidemiological comparison of the children of two very different cultures on a broad range of behavioral and emotional problems, and on two broad syndromes of special theoretical interest. We also explored developmental differences in prevalence across the age range sampled, and we assessed the extent to which age might interact with culture.

Finally, we probed for sex differences and interactions of sex with culture and age. In the United States, more Undercontrolled problems are reported for boys than girls (Achenbach and Edelbrock, 1981; Rutter and Garmezy, 1983), and some have suggested that sex typing and parental behavior may foster this difference (Maccoby and 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. Are such gender differences associated with a moderating, or reversal, of sex differences found in the United States; or, are sex differences like those found in U.S. samples also found in so different a culture as that of Thailand? This report examines these questions.

Method

Sampling Procedures

U.S. sample. The American sample was drawn from urban, suburban, and semirural environments in Washington, D.C., 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 Bangkok and one district within each of the four major regions of Thailand (Northwest, Northeast, Central, South). The procedure was designed to mirror the selection of urban, suburban, and semirural environments in the United States. Because all Thai children are required to complete 7 years of elementary school, and the law is strictly enforced, the schools provided an appropriate sampling frame for 6- to 11-year-olds. Accordingly, we sampled children from 38 elementary schools across the five population districts. The 38 included 29 public and 9 private schools, to mirror the proportions of such schools nationwide. From each school we randomly selected grade levels, classes, and a maximum of one child from each selected class, e.g., "the seventh child on the alphabetical class list." Parents (or guardians) of the selected children were then asked to participate; of those contacted, 91.5% took part.

Interview Procedures

All U.S. interviews were conducted in the subjects' homes by one of five trained interviewers; Thai interviews were conducted at home or at the child's school (depending on parent preference) by one of two trained Thai interviewers. The interviewers determined whether the child had been referred for any mental health-related services during the previous year. Thai and American children for whom the answer was yes were not included in the sample. The interviewer then read aloud a standardized problem-report measure (see below) while the parent followed along on another copy. As the parent answered each question, the interviewer recorded the answers.

CBCL. In the United States, the problem-report measure was the Child Behavior Checklist (CBCL) (Achenbach and 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"). Parents indicate the degree to which their child shows each problem by ratings of 0, not true of the child; 1, somewhat or sometimes true; or 2, very true or often true. The test-retest reliability of these problem items, estimated via intraclass correlations (ICC) between parent reports at 1-week intervals, was 0.95 ($p < 0.01$). The ICC for inter-interviewer reliability averaged 0.96 ($p < 0.01$; see Achenbach and Edelbrock, 1981, 1983). Second order principal components analyses of CBCL narrow-band scale scores (Achenbach and Edelbrock, 1983) have revealed broad-band Overcontrolled and Undercontrolled syndromes, as described above.

TYC. 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 in the TYC and are listed in the same order as on the CBCL, except that we divided CBCL item No. 105, "Uses alcohol or drugs" 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, thus forming, in effect, a single problem item, as on the CBCL.) In addition, 24 other problem items were added to the TYC. Of these, 20 were derived from data on the referral problems of 376 admissions to Thai child guidance clinics (reported in Weisz et al., in press), and four were added at the recommendation of Thai clinicians who reviewed drafts of the TYC.

The TYC was translated into Thai (following Draguns, 1982; Brislin, 1970; Wagatsuma, 1977) using three steps of translation and back translation. One step involved a professional translator. Two steps involved two bilingual Thai clinical psychologists and one bilingual Thai anthropologist. We aimed for linguistic parallelism and for simplicity of expression. The translation was easily understood by most Thai parents. As an estimate of test-retest reliability, we obtained an ICC of 0.81 ($p < 0.01$) for problem scores derived from 10 parents retested after a 1-week interval. The ICC for inter-interviewer reliability was 0.91 ($p < 0.01$) for the two Thai interviewers independently interviewing the same 10 parents.

Subjects and Research Design

The total sample included 960 children, 360 from Thailand and 600 from the United States. Within each culture, the sample was perfectly balanced for age and sex. The Thai sample included 30 boys and 30 girls at each yearly age level from 6 through 11. The U.S. sample included 50 boys and 50 girls at each age. Years 6 to 7, 8 to 9, and 10 to 11 were combined to form three age groups. The resulting design was a 3 (age group) \times 2 (sex) \times 2 (culture) factorial, with proportional cell N s throughout (i.e., 60 per cell in the Thai sample; 100 per cell in the U.S.).

Respondent characteristics. Of the 360 Thai respondents, 60.3% were mothers, 23.8% fathers, and 15.9% others such as foster parents or grandparent guardians. In the U.S. sample of 600, the corresponding figures were 83.5%, 13.7%, and 2.9%. All of the Thai sample were pure Asian and ethnic Thai, except for one who had a Caucasian parent. The U.S. sample was 80.3% white, 17.8% black, and 1.9% other. Given the central role of religious traditions in Thai culture, we asked Thai parents to indicate their religious affiliation, if any. Consistent with nationwide statistics, 95.5% of our sample identified themselves as Buddhist, 3.1% as Muslim, and 1.4% as Christian.

A search for Thai socioeconomic status (SES) classification schemes based on parent occupation revealed five systems, all developed for masters theses in Thai universities; unfortunately, we were unable to find information on the validity of these systems, nor was information on coding procedures provided in sufficient detail for us to use the systems with confidence. We therefore applied Hollingshead's (1957) SES system to all parent occupations. The mean rating on Hollingshead's 7-step scale was 3.86 for the U.S. sample (S.D. = 1.72), slightly higher than the midpoint of 4 (on this scale, 1

= highest SES and 7 = lowest SES). The Thai mean was 4.73 (S.D. = 1.80). The Thai figures should be viewed with caution, because they reflect the use of an American system in a culture for which it was not designed.

Results

We tested group differences in (1) scores for total problems (i.e., the sum of all 1 and 2 ratings across all problem items); (2) ratings on each of the 118 specific problem items; and (3) composite scores for Over- and Undercontrolled problems. Because of the numerous statistical tests involved, it was important to reduce the risk of chance findings; accordingly, we accepted as significant only those group differences that reached $p = 0.01$. Moreover, because our large sample afforded very high statistical power, it was important to evaluate the magnitude as well as the statistical significance of effects; thus, we interpreted all significant effects using Cohen's (1977) criteria for magnitude. Cohen classifies ANOVA effects as *small* if they account for 1% to 5.9% of the variance, *medium* if 5.9% to 13.8%, and *large* if $> 13.8\%$.

Total Problem Scores

We first performed a 3 \times 2 \times 2 (age \times sex \times culture) ANOVA on the total problem score, i.e., the sum of all 1 and 2 ratings on the 118 problems that were identical for the TYC and CBCL, plus "other physical problems" and "additional problems." The analysis revealed a main effect of culture, $F(1, 948) = 12.37, p < 0.001$. Thai children had higher problem scores than American children, but the difference was only 3.4 points on a 240-point scale (means: 24.2 and 20.8). The effect of culture accounted for 1.28% of the variance in total problem scores, so it was "small" by Cohen's (1977) criteria. No other main or interaction effects were significant (all $F < 1.7$; all $p > 0.20$).

Individual Problems

The next analysis involved a series of 3 \times 2 \times 2 (age \times sex \times culture) ANOVAs, each focused on the ratings for one of the 118 problems common to the CBCL and TYC. The results are summarized in Table 1.

Cross-national differences. Thai-U.S. differences were significant for 54 of the 118 problems. By Cohen's criteria, 39 of the differences qualified as small, four as medium, and two as large. The other nine accounted for less than 1% of the variance. Five of the six effects that qualified as medium or large showed Thai children to have higher problem scores than American children, and four of those five involve some form of somatic difficulty (Table 1). These include: No. 24 Doesn't eat well, No. 49 Constipated, No. 51 Feels dizzy, and No. 102 Underactive, lacks energy. A broader look, focused on all 54 differences, revealed higher ratings for Thai children on 32 of the problems and higher ratings for American children on 22 of the problems.

Age differences. As Table 1 shows, 14 of the 118 problems showed significant age effects. Of these, 13 qualified as small by Cohen's (1977) criteria, and none qualified as medium or large. Of the 14 age effects, three resulted from significant increases in problem prevalence with age (i.e., linear trend significant at < 0.01): No. 51 Feels dizzy; No. 61 Poor

TABLE 1. Significant ($p < 0.01$) Main Effects of Nationality, Sex, and Age on Behavioral and Emotional Problems

Type ^a	Problem	Nationality ^b	Sex ^c	Age ^d
U	1. Acts too young (U > T)	(2)***	-	-
UG	5. Behaves like opposite sex	-	G > B (1)	-
U	7. Brags (U > T)	(3)***	B > G (3)***	-
U	8. Can't concentrate	-	B > G (2)***	-
U	10. Hyperactive	-	B > G* ^{ce} (<1)	-
M	13. Confused (T > U)	(2)***	B > G* ^{ce} (<1)	-
M	17. Daydreams (U > T)	(5)***	-	-
U	19. Demands attention (U > T)	(<1)* ^{ce}	-	-
U	20. Destroys own things	-	B > G** (1)	D* ^{ce} (1)
U	23. Disobedient at school (U > T)	(1)**	B > G** (2)	-
-	24. Doesn't eat well (T > U)	(6)***	-	D*** (2)
U	25. Poor peer relations (U > T)	(2)***	-	-
U	27. Easily jealous (U > T)	(3)***	-	-
OB	29. Fears (T > U)	(5)***	-	D* ^{ce} (1)
O	31. Fears own impulses (T > U)	(2)***	-	-
M	33. Feels unloved	-	G > B* (1)	-
O	34. Feels persecuted (U > T)	(<1)*	-	-
-	36. Accident prone (T > U)	(5)***	-	-
U	37. Gets in many fights	-	B > G** (1)	-
U	39. Hangs around bad peers (U > T)	(1)*	-	-
U	41. Impulsive	-	B > G*** (2)	-
OG	42. Likes to be alone (U > T)	(1)**	-	-
U	43. Lying or cheating (T > U)	(1)**	-	-
-	44. Bites fingernails (U > T)	(3)***	-	-
O	47. Nightmares	-	G > B* ^{ce} (<1)	D* ^{ce} (1)
OB	49. Constipated (T > U)	(13)***	G > B* ^{ce} (<1)	-
O	50. Too fearful or anxious (T > U)	(2)***	-	-
O	51. Feels dizzy (T > U)	(15)***	-	I* (<1)
-	53. Overeating	-	-	I* ^{ce} (1)
-	55. Overweight	-	-	I* ^{ce} (1)
O	56b. Headaches (U > T)	(<1)*	-	-
O	56c. Nausea, feels sick (U > T)	(<1)* ^{ce}	-	-
OB	56d. Problems with eyes (U > T)	(<1)* ^{ce}	-	-
OB	56e. Skin problems (U > T)	(<1)* ^{ce}	-	-
O	56f. Stomachaches, cramps (U > T)	(1)**	-	-
-	58. Picks nose, skin, other (T > U)	(3)***	-	D* (1)
U	61. Poor schoolwork (T > U)	(4)***	B > G** (1)	I* (1)
UB	64. Prefers younger children (T > U)	(5)***	-	-
O	65. Refuses to talk (T > U)	(2)***	-	-
U	68. Screams a lot (T > U)	(1)**	-	-
O	69. Secretive (U > T)	(1)**	-	-
O	71. Self-conscious (U > T)	(7)***	-	-
UB	72. Sets fires (T > U)	(2)***	B > G* (<1)	-
U	74. Showing off or clowning (U > T)	(2)***	B > G*** (2)	D* (1)
O	75. Shy or timid (T > U)	(2)***	-	D* (1)
O	76. Sleeps little (U > T)	(<1)* ^{ce}	-	-
O	77. Sleeps much (T > U)	(3)***	-	-
U	79. Speech problems	-	B > G* (<1)	-
O	80. Stares blankly (T > U)	(1)**	-	-

Note. Problems are designated with their CBCL item numbers and brief labels indicating item wording. Numbers in parentheses indicate the percentage of variance in item ratings accounted for by each independent variable in those cases where the effect was significant at $p < 0.01$.

^aO, problem loads on Overcontrolled syndrome for both boys and girls aged 6 to 11 (Achenbach and Edelbrock, 1983); U, problem loads on Undercontrolled syndrome for both boys and girls; OB/OG, problem loads on Overcontrolled syndrome for boys/girls only; UB/UG, problem loads on Undercontrolled syndrome for boys/girls only; M, problem loads on both Over- and Undercontrolled syndromes for some age/sex group(s); -, problem does not load on either Over- or Undercontrolled syndrome.

^bT > U, Thais had higher mean ratings than Americans; U > T, vice versa.

^cB > G, boys had higher mean ratings than girls; G > B, vice versa.

^dI, mean ratings increased with increasing age; D, mean ratings decreased with increasing age; N, mean ratings showed a nonlinear change with age.

^eNot significant if one adjusts for the number of $p < 0.01$ findings expected by chance, using a 0.01 protection level (Feild and Armenakis, 1974; Sakoda et al., 1954).

* $p < 0.01$; ** $p < 0.001$; *** $p < 0.0001$.

(continued on p. 894)

TABLE 1. (Continued)

Type ^a	Problem	Nationality ^b	Sex ^c	Age ^d
OB	83. Stores up unneeded things (U > T)	(2)*	-	-
O	85. Strange ideas (T > U)	(<1)*	-	-
M	86. Stubborn or sullen (T > U)	(3)***	-	-
M	87. Moody (T > U)	(5)***	-	-
M	88. Sulks a lot (T > U)	(23)***	-	-
OB	89. Suspicious (T > U)	(2)***	-	-
U	90. Swearing/obscene language (T > U)	(3)***	B > G* (<1)	-
U	92. Talks or walks in sleep (T > U)	(1)*	-	-
U	94. Teases a lot	-	B > G (2)***	-
-	98. Thumb sucking (U > T)	(1)**	G > B* (<1)	N* (1)
-	99. Too concerned w/neatness (T > U)	(4)***	-	-
O	100. Trouble sleeping	-	G > B** (<1)	-
UB	101. Truancy, skips school (T > U)	(<1)*	-	-
OG	102. Underactive, lacks energy (T > U)	(6)***	-	-
O	103. Unhappy, sad, depressed (T > U)	(1)**	-	-
U	104. Unusually loud (T > U)	(4)***	-	-
-	108. Wets bed (T > U)	(2)***	-	D*** (2)
-	109. Whines	-	-	D* (1)
-	110. Wishes to be opposite sex (T > U)	(2)***	G > B** (1)	-

schoolwork; and No. 53 Overeating. Nine age effects involved age-related declines in prevalence: No. 20 Destroys own things, No. 24 Doesn't eat well, No. 29 Fears, No. 47 Nightmares, No. 58 Picks nose or skin, No. 74 Shows off, No. 75 Shy, No. 108 Wets bed, and No. 109 Whines.

Sex differences. Table 1 also indicates that 21 of the 118 problems showed significant sex effects. Of these, 12 qualified as *small* in magnitude by Cohen's (1977) criteria, and none qualified as medium or large. Of the 21 sex effects, 14 resulted from higher scores among boys than girls, whereas 7 showed the reverse sex difference (see table).

Culture × age interactions. The item-by-item analyses revealed culture × age interactions on eight of the 118 items. Of these eight, shown in Table 2, five resulted partly from the fact that age group differences were significant (<0.01) among Thais but not Americans: No. 21 Destroys others' property, No. 36 Accident prone, No. 51 Feels dizzy, No. 86 Stubborn, and No. 112 Worrying. An exception was item No. 55 Overweight, which increased sharply with age among American children ($p < 0.0001$) but decreased nonsignificantly with age among Thais. The remaining culture × age interactions involved no significant (0.01) component effects.

Culture × sex interactions. As Table 2 shows, six problems showed culture × sex interactions. On three of the problems, boys and girls differed significantly among Thais but not Americans. On No. 43 Lying, boys were rated higher than girls in Thailand, but the sex difference was not significant in the United States; on No. 49 Constipated and No. 64 Prefers younger children, girls were rated higher than boys in Thailand, but the sex difference was not significant in the United States. On one problem, No. 95 Temper tantrums or hot temper, American boys were rated higher than girls, but Thai boys and girls did not differ reliably. The remaining culture × sex interactions involved no significant (0.01) component effects.

Culture × age × sex. As Table 2 shows, there were no age × sex interactions, but there was a significant triple interaction on No. 35 Feels worthless or inferior. A breakdown of this

TABLE 2. Items Showing Significant ($p < 0.01$) Interactions Involving Culture, Age, and Sex

Problem	Probability	% Variance
Culture × age interactions		
21. Destroys others' property	<0.01 ^a	1
36. Accident prone	<0.005	2
51. Feels dizzy	<0.01 ^a	<1
55. Overweight	<0.005	1
86. Stubborn	<0.005	1
91. Talks about killing self	<0.01 ^a	1
107. Wets self during day	<0.005 ^a	1
112. Worrying	<0.005 ^a	1
Culture × sex interactions		
43. Lying or cheating	<0.01 ^a	<1
46. Nervous movements	<0.01 ^a	<1
49. Constipated	<0.001 ^a	1
64. Prefers younger children	<0.01 ^a	<1
70. Sees things not there	<0.01 ^a	<1
95. Temper tantrums or hot temper	<0.005 ^a	1
Culture × age × sex		
35. Feels worthless or inferior	<0.005 ^a	1

^a Not significant if one adjusts for the number of $p < 0.01$ findings expected by chance, using a 0.01 protection level (Feild and Armenakis, 1974; Sakoda et al. 1954).

interaction revealed only two marginally significant group differences. Among 8- to 9-year-olds (but not among older or younger children), Thai boys were rated lower than both Thai girls and U.S. boys (both $p < 0.02$).

Composite Over- and Undercontrolled Scores.

To compare groups on Over- and Undercontrolled problems, we computed two composite scores for each child, following a procedure developed in earlier research (Weisz et al., in press). To calculate each child's Overcontrolled score, we summed all 1 and 2 ratings on those 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). This total was divided by

the number of all problems (of the 118 total) that load on that syndrome for the child's age and sex group, and the resulting proportion scores were multiplied by 100 to convert to percentages; these were the Overcontrolled scores. Undercontrolled scores were computed in an analogous manner. (As noted elsewhere [Weisz et al., in press], a limitation of this procedure is that it is based on principal components analyses of data from American samples. One of our long-term objectives is to apply principal components analysis to TYC data from clinic-referred Thai children, to assess problem patterning, or "syndromes," among Thai children.)

A $3 \times 2 \times 2$ (age \times sex \times culture) ANOVA of Overcontrolled scores revealed only a significant main effect of culture, $F(1,948) = 12.07, p < 0.005$. More Overcontrolled behavior was reported for Thai children than for Americans (means: 19.3 and 16.2). The effect accounted for 1.24% of the variance, and was thus "small" by Cohen's (1977) standards.

When Undercontrolled scores were subjected to a $3 \times 2 \times 2$ (age \times sex \times culture) ANOVA, no effects involving culture were significant. Instead, only the main effect of sex was significant, $F(1,948) = 17.54, p < 0.0001$. More Undercontrolled behavior was reported for boys than girls (means, 26.8 and 21.8). The effect accounted for 1.79% of the variance and was thus "small" by Cohen's (1977) criteria.

Discussion

Are cultural differences associated with different patterns of child psychological problems? The findings presented here suggest that the answer may be yes, at least when American and Thai cultures are compared. The cross-national differences identified here were surprisingly modest, however. More than half the 118 problems showed no significant Thai-U.S. difference in prevalence. Moreover, only six of the Thai-U.S. differences that were significant qualified as "medium" or "large" according to Cohen's (1977) variance-accounted-for criteria. The broad similarities between Thai and U.S. patterns are reminiscent of the similarities found by Achenbach et al. (1987) when they used methods similar to those used here to compare Dutch and American children. The similarities found here, though, may be especially important given the substantial dissimilarity between Thai and American culture.

The significant cross-national differences that were identified here offer partial support for the *problem suppression-facilitation model*, the idea that culturally mediated values, expectancies, and child-rearing practices may suppress the development of certain types of child problems and foster the development of others. Our findings suggest that Overcontrolled problems may be more prevalent in Thai than in American children. The same conclusion emerged from an earlier analysis of child clinic referral problems in Thailand and the United States (Weisz et al., in press). The pattern is consistent with the idea that the traditional, Buddhist-influenced Thai emphasis on quietness, inhibition, and deference may foster development of Overcontrolled problems, at least in comparison with U.S. traditions and practices.

In the present study, as in the clinic referral study noted above, some of the most pronounced Thai-U.S. differences involved problems with somatic overtones. This suggests the

further possibility that Thai children may be more likely than their American age-mates to internalize distress in the form of bodily rather than purely psychological "symptoms."

Although the present findings concur with clinic referral findings in some respects, there are also potentially significant differences. First, the clinic referral study revealed higher scores on Undercontrolled problems for American than Thai children, but the present study did not. Second, a number of specific somatic complaints that were most commonly listed as referral problems in Thailand and rarely listed in the U.S. (e.g., headaches) were found here to be slightly *more* prevalent in the U.S. than the Thai sample.

These differences between present and previous findings offer grist for the theoretical mill, suggesting useful hypotheses about the nature of cultural influence. For example, if headaches are relatively rare among Thai children, but very common as a reason for clinic referral in Thailand, this may indicate that children's headaches are a particular source of concern to Thai adults. A recent study of adult attitudes toward child problems (Weisz et al., 1986) indirectly supports this possibility. The findings indicated that Thai parents, teachers, and clinical psychologists regard both Over- and Undercontrolled child *psychological* problems as less serious and more likely to improve spontaneously than do corresponding groups of American adults. Perhaps certain somatic complaints, such as headaches, are common referral problems in Thailand despite their low prevalence because they seem more "medical" than "psychological" to Thai adults (some made their way to mental health clinics only after an initial medical clinic referral). The possibility may bear further study. It illustrates the potential heuristic value of a research strategy contrasting epidemiological and clinic-referral findings.

As the preceding discussion suggests, research on child clinic referral must attend to the role of adult attitudes. This is also true of epidemiological research of the type reported here. Parent reports on the incidence of various child problems are certainly influenced by the actual occurrence and intensity of those problems. The parent reports may also be influenced by cultural context, however, in at least three ways. First, the cultural milieu may color adults' judgments about what is *appropriate* for children at a given age; such judgments could help determine whether parents would report, for example, that their child "talks too much" (item No. 93 on the CBCL and TYC). The amount of talking considered normal by American parents, might well be considered "too much" by parents in a culture where children are expected to be quiet in the presence of adults. Second, cultural milieu may color adults' judgments about what is *usual* for children at a given age; such judgments could influence the likelihood that parents would report, for example, that their child is "unusually loud" (No. 104). Third, parent reports may be influenced by culture-bound definitions of concepts embedded in the problem items. For example, the Thai definition of "swearing" (No. 90) includes language that would be considered merely impolite in the United States; swearing includes labeling a peer with the Thai term for a monitor lizard (considered a source of bad luck) or insulting a peer's parent. Thus, the fact that Thai parents reported twice as much swearing among their children as did American parents (p for the Thai-U.S. difference < 0.0001 ; 2.6% of variance accounted for) may

reflect, in part, cross-cultural differences in the breadth of the concept of swearing.

The findings revealed several sex differences that cut across these two very different cultures. In particular, our finding that boys were rated as more Undercontrolled than girls, regardless of culture, is in harmony with previous findings from western cultures (e.g., Achenbach and Edelbrock, 1981; Rutter and Garmezy, 1983). Moreover, our failure to find any sex difference on total problems agrees with previous evidence (Achenbach and Edelbrock, 1981) discounting the stereotype that boys present more behavior problems than girls; the only sex difference we could find concerned not the number of behavior problems but rather their form. At the level of specific problems, we found sex differences on 21 problems. It is intriguing theoretically that 17 of the 21 replicated sex differences that were also found in the Dutch-U.S. epidemiological comparison (Achenbach et al., 1987), and none of the 21, ran counter to the Dutch-U.S. differences. (Several Dutch-U.S. sex differences were not replicated in the present study, but this may have been caused partly by the fact that the Dutch-U.S. sample included a broader age range, and a larger sample, and thus afforded more statistical power than the present sample.) The similarities suggest sex differences that may be robust across very different cultural settings.

The age differences identified in the present study are difficult to characterize in any general way, but they constitute a potentially valuable base of data, nonetheless. As age-related epidemiological data accumulate for various cultures, we will move ever closer to the point that significant inferences about development can be drawn. Such data should eventually help us judge the degree to which age differences observed in a given culture reflect culture-specific factors (such as differential treatment of different age groups by parents and other adults within the culture) versus such culture-general forces as biological and cognitive development. Similar prospects exist, of course, for the accumulating data on sex differences across cultures.

Two goals for future research on Thai-U.S. differences and similarities should be mentioned here. First, the identification of problem syndromes among Thai children (e.g., via principal components or factor analysis of problem reports for disturbed children) could pay rich dividends; the findings could help investigators structure comparisons on dimensions known to be similar across the cultures. Second, future research might profitably include children younger or older than the 6- to 11-year age range; to round out the picture of development across cultures, we will need to add evidence on early childhood and adolescence. Certainly, the evidence presented here, and elsewhere to date, must be regarded as only part of an expanding picture of the interplay of culture, sex, and maturation in the development of child psychopathology.

References

- Achenbach, T. M. & Edelbrock, C. S. (1978), The classification of child psychopathology: a review and analysis of empirical efforts. *Psychol. Bull.*, 85:1275-1301.
- (1981), Behavioral problems and competencies reported by parents of normal and disturbed children aged 4-16. *Monogr. Soc. Res. Child Develpm.* 46: No. 188.
- (1983), *Manual for the Child Behavior Checklist and Revised Child Behavior Profile*. Burlington: University of Vermont, Department of Psychiatry.
- Verhulst, F. C., Baron, G. D. & Akkerhuis, G. W. (1987), Epidemiologic comparisons of American and Dutch children: I. behavioral/emotional problems and competencies reported by parents for ages 4 to 16. *This Journal*, 26:317-325.
- Al-Issa, I. S. (1982), *Culture and Psychopathology*. Baltimore: University Park Press.
- Boesch, E. (1977), Authority and work attitude of Thais. In: *Thai in German Eyes* ed. K. Wenk & K. Rosenberg. Bangkok: Kledthai, pp. 176-231.
- Brislin, R. W. (1970), Back translation for cross-cultural research. *J. Cross-Cultural Psychol.*, 1:185-216.
- Cohen, J. (1977), *Statistical Power Analysis for the Behavioral Sciences* (Rev. Ed.). New York: Academic Press.
- Collins, L. F., Maxwell, A. E. & Cameron, C. (1962), A factor analysis of some child psychiatric clinic data. *J. Ment. Sci.*, 108:274-285.
- Draguns, J. G. (1973), Comparison of psychopathology across cultures: issues, findings, directions. *J. Cross-Cultural Psychol.*, 4:9-47.
- (1982), Methodology in cross-cultural psychology. In: *Culture and Psychopathology*, ed. I. Al-Issa. Baltimore: University Park Press, pp. 33-70.
- Feild, H. S. & Armenakis, A. A. (1974), On use of multiple tests of significance in psychological research. *Psychol. Rep.*, 35:427-431.
- Gardiner, H. W. (1968), Expression of anger among Thais: some preliminary findings. *Psychologia*, 11:221-228.
- Suttipan, C. S. (1977), Parental tolerance of aggression: perceptions of preadolescents in Thailand. *Psychologia*, 20:28-32.
- Gordon, G. P. & Gallimore, R. (1972), Teacher ratings of behavior problems in Hawaiian-American adolescents. *J. Cross-Cultural Psychol.*, 3:209-213.
- Hayashi, K., Toyama, B. & Quay, H. C. (1976), A cross-cultural study concerned with differential behavioral classification. I. the behavior checklist. *Jpn. J. Criminal Psychol.*, 2:21-28.
- Hollingshead, A. B. (1957), *Two-factor index of social position*. Unpublished manuscript, New Haven, Conn.
- Kingshill, C. (1960), *Ku Daeng—The Red Tomb: A Village Study in Northern Thailand*. Chiangmai, Thailand: Prince Royal's College.
- Maccoby, E. E. & Jacklin, C. N. (1974), *The Psychology of Sex Differences*. Stanford, Calif.: Stanford University Press.
- Marsella, A. J. (1979), Cross-cultural studies of mental disorders. In: *Perspectives on Cross-cultural Psychology*, ed. A. J. Marsella, R. G. Tharp & T. J. Cibrowski. New York: Academic Press, pp. 233-262.
- Moore, F. J. (1974), *Thailand: Its People, its Society, its Culture*. New Haven, Conn.: Hraf Press.
- National Identity Office (Kingdom of Thailand) (1984), *Thailand in the 80s*. Bangkok: Muang Boran Publishing House.
- Peterson, D. R. (1965), Structural congruence and metric variability in a cross-cultural study of children's behavior problems. *Arch. Psicol. Neurol. Psichiat.*, 2:174-187.
- Phillips, H. P. (1965), *Thai Peasant Personality: The Patterning of Interpersonal Behavior in the Village of Bang Chan*. Berkeley: University of California Press.
- Quay, H. C. & Parskeuopoulos, I. N. (1972, August), *Dimensions of problem behavior in elementary school children in Greece, Iran, and Finland*. Paper presented at the XXth International Congress of Psychology, Tokyo, Japan.
- Rutter, M. & Garmezy, N. (1983), *Developmental Psychopathology*. In: *Handbook of Child Psychology, Vol. IV*, ed. P. Mussen & E. M. Hetherington. New York: Wiley, pp. 775-911.
- Sakoda, J. M., Cohen, B. H. & Beall, G. (1954), Tests of significance for a series of statistical tests. *Psychol. Bull.*, 51:172-175.
- Sangsingkeo, P. (1969), Buddhism and some effects on the rearing of children in Thailand. In: *Mental Health Research in Asia and the Pacific*, ed. W. Caudill & T. Y. Lin. Honolulu: East-West Center Press, pp. 286-295.
- Suvannathat, C. (1979), The inculcation of values in Thai children. *Int. Soc. Sci. J.*, 31:477-485.
- Suwanlert, S. (1974), Some personality characteristics of Thai students. In: *Youth, Socialization, and Mental Health in Asia and the*

- Pacific*, ed. W. P. Lebra. Honolulu: University Press of Hawaii, pp. 75-84.
- Touliatos, J. & Lindholm, B. W. (1976), Behavior problems of Anglo and Mexican-American children. *J. Abnorm. Child Psychol.* 4:299-304.
- Wagatsuma, H. (1977), Problems of language in cross-cultural research. *Ann. N.Y. Acad. Sci.*, 285:141-150.
- Weisz, J. R., Suwanlert, S., Chaiyasit, W. & Walter, B. (in press), Over- and undercontrolled clinic referral problems among Thai and American children and adolescents: the wat and wai of cultural differences. *J. Consult. Clin. Psychol.*
- Weiss, B. & Walter, B. R. (1986), *Thai and American perspectives on over- and undercontrolled behavior problems: exploring the threshold model among parents, teachers, and psychologists*. Unpublished manuscript, University of North Carolina at Chapel Hill.