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JAPANESE COOPERATIVE AND COMPETITIVE ATTITUDES: AGE AND GENDER EFFECTS*

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Japanese fifth through twelfth graders ($N = 927$) rated and ranked 24 cooperative and competitive activities (teacher-generated) in terms of personal importance. Factor analyses revealed one consistent cooperative factor across school levels, and different competitive factor structures for elementary, middle and high school pupils. Analyses of variance on individual items and on composite measures suggested that (1) while females were significantly more cooperative and males more competitive than one another, both sexes responded much more positively towards cooperative than competitive items, and (2) cooperative and competitive orientation depends on the specific activity. Age, gender and situational factors were related to pupils' cultural socialization at school.

Long ago, anthropologists reported pressure for girls to be cooperative and for boys to be competitive (Barry, Bacon and Child 1957; Mead 1937, 1949). The psychological research on non-Western cultures which followed (e.g., Madsen 1971) focused primarily on cultural and subcultural differences in the experimental behavior of young children. Little evidence has emerged outside the West on older children and adolescents, attitudes, or the meanings of cooperation and competition in the target culture(s). The present study addresses these issues by focusing on attitudes among older subjects, and on intra-cultural variation in the meaning of cooperation and competition.

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Previous research on orientations toward cooperative and competitive activities has revealed age trends (Ahlgren and Johnson 1979; Galejs and Stockdale 1982; Herndon and Carpenter 1982; Owens and Straton 1980) among pupils in the U.S. and Australia. Graves and Graves (1984a) summarizes the Western data on orientations toward learning situations as follows: (1) boys and girls both prefer cooperative learning in elementary school, but in secondary school while girls still prefer cooperative learning boys come to prefer competition, (2) across school levels girls express more liking for cooperative learning than boys, while boys express more liking for competitive learning than do girls, and (3) preferences for competitive learning increase with age for both sexes. Ahlgren and Johnson (1979) found that between grades 8 and 10 such sex differences are accentuated, and attribute this finding to peer pressure for masculine (competitive) and feminine (cooperative) orientations.

This study explores the development of cooperative and competitive attitudes among Japanese 5th through 12th graders. Japan is an ideal setting to study these phenomena because cooperation and competition are both very important in the social lives of Japanese children and adolescents. The ideology of Japanese schools is 'groupism' (Befu, 1980), and children are socialized throughout their schooling to be loyal members of a tight-knit homeroom class. At the same time, the influence of competitive entrance examinations for placement in secondary schools and universities pervades the Japanese educational system and curriculum (Kubo 1981), and the social life of pupils (Hotani Board of Education 1980). Research on cooperation and competition among Japanese, however, is scattered in focus, and attitudinal data are not available.

There is behavioral evidence that Japanese elementary school pupils are highly competitive. Toda, Shinotsuka, McClintock and Stech (1978) found that 2nd, 4th and 6th grade Japanese boys were more competitive than their Greek, Anglo-American, Mexican-American and Belgian counterparts, and that their competitiveness increased with age. This tendency was most pronounced in an experimental condition in which a boy compared his performance to that of a partner (on McClintock's 'MDG' game – see McClintock, Moskowitz and McClintock 1977). The development of cooperative behavior has also been reported for Japanese primary school children. Kataoka (1979), in observing Japanese children's games, noted both helping behavior as well as instrumental, goal-oriented cooperation.

Little data is available regarding secondary-school pupils. Kashiwagi (1974), in comparing 8th and 11th grade pupils, found more distinct sex-role stereotyping among 8th grade girls. If cooperation and competition are sex-typed in adolescence, we might predict based on her findings that boys and girls will show the strongest attitudinal differences in middle school, as was the finding in Ahlgren and Johnson (1979).

In investigating cooperation and competition among Japanese pupils, we asked the following research questions: (1) What specific behavior do the Japanese consider cooperative or competitive? (2) How much value is placed on each orientation, and do pupils place more value upon one or the other orientation? and (3) Do such values change with age, or differ between males and females? In order to answer these questions, a questionnaire was devised with items consisting of concrete everyday cooperative and competitive behaviors observed in Japanese schools. As we investigated the importance pupils attach to these everyday activities, we hoped to explore the interplay of age, gender and culture in the formation of cooperative and competitive values.

Methods

Generation of questionnaire items

Three-hundred schools (100 each at the elementary, middle and high school levels) were randomly selected from a list of over 37000 schools appearing in a national listing of Japanese schools (*Zenkoku gakko yoran* 1981). Letters were sent to the principal at each school, stating the goals of the survey and asking the principal to give questionnaire forms to two teachers. Separate letters of explanation to teachers asked them to 'list some specific behaviors you can see among your pupils which you believe are examples of cooperative [competitive] behavior. The examples may be observable either in or out of the classroom, and be (1) between two or more pupils, (2) of one pupil towards a peer, teacher, the principal or other staff member, or (3) of a solitary student you consider particularly cooperative [competitive]...'. To avoid biasing the responses of teachers towards defining cooperation and competition as opposite constructs, 150 of the schools were told that the study was about cooperation, and the other 150 schools were told it concerned competition.

One-hundred-and-two teachers responded, using stamped return envelopes, and provided an initial pool of 453 cooperative and 418 competitive behaviors. These items were typed onto index cards and screened independently by the two authors. Items reported by only one teacher or at only one school level were eliminated. Each author sorted the remaining cards into piles according to similarity of content. Discrepancies between the sortings were resolved by discussion, narrowing the item pool to 31 cooperative and 33 competitive items.

These 64 items were reduced to the final 24 by eliminating items that were (1) clearly socially desirable or undesirable, (2) not feasible behavior at all three school levels, (3) clearly more common behavior in either males or females, or (4) very infrequent in occurrence. Two local school teachers at each school level, and three developmental psychologists in the Tokyo area screened the 64-item pool to help select the final 24 items, twelve each from the cooperative and competitive item pools. These eight educators also found the wording of the 24 items to be age-appropriate for pupils from all three school levels.

Target schools and subjects

A university-affiliated secondary school and a private elementary school, both within the Tokyo metropolitan area, were selected for the study. Both schools were coeducational and private; the students were of average academic ability, came from middle-class backgrounds, and reportedly aspired to non-elite universities. In the secondary school, pupils from the middle school are automatically admitted to the high school, which is housed within the same building complex. All 5th and 6th graders were sampled at the elementary school, and all 7th through 12th graders were sampled at the secondary school. There were three classrooms in each grade, resulting in a total N of 927.

The attitude survey

Questionnaire forms were distributed by teachers during homeroom classes during the first week of December, 1982. To assure understanding by pupils, teachers read the instructions aloud, and answered any procedural questions. Approximately ten minutes were required to complete the questionnaires.

Pupils were first asked to rate each of the 24 items (listed in one randomized order) on a 1-to-5 scale in terms of 'how important' each

item was 'personally' to the pupil (5 = very important; 4 = important; 3 = neither; 2 = no so important; 1 = completely unimportant). A five-point scale is (1) common in such Japanese surveys, (2) coincides with the familiar five-point scale used in pupil report cards, and (3) is the maximum number of points considered feasible for the youngest subjects. Pupils were then asked, on a separate sheet, to rank order the 'ten most important items' among the 24, writing a '1' next to the item personally most important, etc., through '10'.

Ratings and rakings by each pupil were compared to assess the reliability of the responses. Contingency table analyses crossed ratings of 5 or 4 (very important or important) with rankings among the top for each item, and ratings of 2 or 1 (not so important or completely unimportant) with non-ranking of the item in the top ten. Across all 24 items, the average Goodman-Kruskal Gamma statistic between the ratings and rankings was 0.82 (range = 0.57 to 0.91) and the median standard error for the gammas was 0.061 (range = 0.03 to 0.15). This highly significant correlation, $p < 0.001$, suggests a very strong consistency of response between two very different response modes. In addition, a two-week test/retest reliability assessment was conducted on 240 pupils (5th, 8th and 11th graders) at three schools in a different city. Average correlations were 0.55 for ratings and 0.52 for rankings (both $ps < 0.001$).

Results

For the purposes of most analyses, responses of elementary (grades 1–6), middle (grades 7–9), and high school (grades 10–12) pupils were pooled into these three groups of 'school level'.

Analyses on all 24 items

Table 1 displays the mean ranking of all 24 items at the three school levels and for both sexes, and the significance levels of tests for main effects of school level and gender.

School level effects

When one-way ANOVAS for school level were conducted for item rankings (all $dfs = 2, 896$), 14 of the 24 showed main effects. In

Table 1
Mean rankings of 24 items and tests for school level and gender effects.

Item	Elem.	Middle	H.S.	*P*-value	Male	Female	*P*-value
Cooperative items							
COMPLETES group's task to very end (3)	6.32	6.18	6.36	NS	6.48	6.09	NS
PREPARES for school events with classmates (5)	8.23	6.52	6.15	< 0.001	7.10	6.68	NS
Helps others when own WORK is DONE early (9)	7.82	8.02	8.39	NS	8.47	7.72	< 0.001
Works happily in group no matter who PARTNER is (2)	6.11	6.13	6.41	NS	6.72	5.71	< 0.0001
Active in HOMEROOM and committee work (8)	8.30	7.34	8.17	< 0.001	7.86	7.90	NS
Helps TEACHER (1)	5.33	4.40	4.64	< 0.01	5.30	4.23	< 0.0001
Participates in GROUP STUDY (13)	8.64	8.83	9.73	< 0.0001	8.96	9.21	NS
COUNSELS friend who is emotionally troubled (15)	8.05	10.17	10.48	< 0.0001	9.88	9.49	< 0.05
Aids friend WEAK in SPORTS (16)	9.46	9.90	10.37	< 0.0001	9.84	10.04	NS
PLAYS with friends in free time (4)	6.63	6.52	6.92	NS	6.64	6.75	NS
Talks about FUTURE or studies with friends (11)	10.29	9.03	7.35	< 0.001	8.99	8.63	NS
Participates in CLUB (7)	8.38	7.12	7.21	< 0.01	7.13	7.90	< 0.01
Competitive items							
Does well in CONTESTS or recitals (21)	10.40	10.24	10.54	NS	10.37	10.40	NS
PRAISED or recognized by teacher (18)	9.69	10.51	10.40	< 0.0001	10.28	10.21	NS
Selected as a REGULAR on sports team (20)	10.25	10.35	10.33	NS	10.01	10.62	< 0.0001
Excels in INDIVIDUAL sports (22)	10.03	10.58	10.47	< 0.01	10.23	10.54	< 0.05
Is in CLASS superior in studies and sports (19)	9.98	10.16	10.59	< 0.01	10.03	10.47	< 0.01
Progresses FASTER than others in studies (23)	10.55	10.64	10.48	NS	10.03	10.47	< 0.01
Strives to win in SPORTS MEET (14)	9.73	9.45	9.88	NS	9.23	10.08	< 0.0001
Gets better test GRADES than friends (17)	9.82	9.87	10.13	NS	9.83	10.05	NS
POPULAR among classmates (12)	9.36	9.18	8.69	< 0.05	9.31	8.85	< 0.05
STANDS OUT in clothing and possessions (24)	10.94	10.81	10.74	NS	10.76	10.88	NS
Betters one's own RECORDS (6)	7.65	7.41	6.89	< 0.05	7.02	7.57	< 0.05
Studies for ENTRANCE exams (10)	6.98	9.61	7.78	< 0.0001	8.15	8.33	NS

Note: For school level effects all dfs = 2, 896; for gender effects all dfs = 1,892. Unranked items were coded as '11'. Each item's rank among the 24 is given in parentheses.

elementary school, the rewarding power of the teacher and a team spirit of mutual helping were especially apparent. Three behaviors were ranked significantly higher by elementary school pupils than middle or high school pupils: praise by teacher, $F = 14.93$, $p < 0.01$, counseling a troubled friend, $f = 84.85$, $p < 0.0001$, and excellence in individual sports, $F = 6.56$, $p < 0.01$. In addition, the ranking of three behavioral items showed linear trends for age, with highest rankings in elementary school: being in the best classroom, $F = 7.74$, $p < 0.01$, group study, $F = 14.71$, $p < 0.001$, and helping a friend weaker in sports, $F = 12.24$, $p < 0.001$.

In middle school, homeroom activities were ranked significantly higher than at the elementary or high school levels, $F = 7.49$, $p < 0.001$, and entrance examination preparation was ranked significantly lower than at the other two school levels, $F = 44.36$, $p < 0.001$. These both may be products of this school's organization, which does not require entrance examinations to high school, and emphasizes committee work.

Linear trends for school level were also found for two variables, increasing in importance with age: being popular, $F = 3.72$, $p < 0.05$, and discussing the future, $F = 72.25$, $p < 0.001$. Three other items were ranked similarly and higher in both middle and high school, compared to in elementary school: helping the teacher, $F = 5.12$, $p < 0.01$, preparing with friends for school events, $F = 32.76$, $p < 0.001$, and participation in clubs, $F = 10.90$, $p < 0.001$. These items indicate among other things the widening scope of the pupils' social world, and their growing concern for peer group and extra-curricular activities. Finally, besting one's own records was ranked significantly higher by high school pupils than by elementary or middle school pupils, $F = 3.39$, $p < 0.05$, suggesting that along with group-oriented socialization a sense of autonomous achievement is fostered in secondary school.

Gender effects

Twelve of the 24 items rankings showed main effects for gender (pooled across school levels, all dfs = 1,892). The following items (five of seven are competitive items) were more highly ranked by males: excelling in individual sports, $F = 6.05$, $p < 0.05$, besting own records, $F = 5.33$, $p < 0.005$, progressing faster in studies, $F = 6.02$, $p < 0.05$, club participation, $F = 10.61$, $p < 0.01$, winning in sports meets, $F = 24.82$, $p < 0.001$, selection as a regular on sports teams, $F = 22.11$, $p < 0.001$, and being in the best class, $F = 11.62$, $p < 0.001$. Females

ranked the following behavioral items (four of five are cooperative items) higher than did males: counseling a troubled friend, $F = 5.10$, $p < 0.05$, being popular, $F = 4.99$, $p < 0.05$, helping the teacher, $F = 20.16$, $p < 0.0001$, helping friends when own work is done, $F = 13.09$, $p < 0.001$) and working enjoyably with anyone, $F = 18.08$, $p < 0.001$.

The most- and least-valued items

The five most important behaviors, in terms of mean rankings, were mostly from the 12 original cooperative items, at all school levels. The exceptions were (1) the elementary school pupils ranked study for entrance exams fifth highest, and (2) high school pupils ranked besting one's own records fifth highest. All the lowest-ranked items were from the original 12 competitive items, with the exceptions of (1) elementary school pupils ranked discussing the future as 21st highest, and (2) high school pupils ranked counseling a friend as 21st. The same dominance of cooperation in the top five and competition in the bottom five was also clear for both males and females, with one exception: males ranked besting one's own records as fifth most important.

Factor analyses

Two sets of factor analyses were next conducted, to (1) determine the suitability of the 24 teacher-generated items for inclusion in composite variables, and (2) explore the nature of cooperation and competition throughout the school years. In the first analysis, the number of factors was limited to two, to see if pupils rated activities on the two basic dimensions of cooperativeness and competitiveness. The factor loadings for item ratings pooled across the entire sample, $N = 927$, clearly revealed distinguishable cooperative and competitive factors, consisting of nine behavioral items each. The two-factor loadings, after Varimax rotation, are presented in table 2.

School level variation in factor structure

Factor analyses were next conducted separately at the three school levels to determine if the cooperation/competition distinction was inappropriate for items at any specific age level, and to highlight sub-components of the competitive and cooperative factors. At each school level, a general cooperative factor was followed by a pair of competitive factors. In addition to the fact that competitiveness and not

Table 2
Two-factor loadings of item ratings (pooled across all subjects).

Item	Factor 1	Factor 1
Cooperative		
COMPLETES	0.71	0.10
PREPARES	0.66	0.07
WORK DONE	0.64	0.07
PARTNER	0.64	0.14
HOMEROOM	0.63	0.12
TEACHER	0.62	−0.02
GROUP STUDY	0.60	0.15
COUNSELS	0.57	0.22
WEAK SPORTS	0.56	0.25
Competitive		
CONTESTS	0.30	0.64
PRAISED	0.22	0.63
REGULAR	0.17	0.62
INDIVIDUAL	0.14	0.60
CLASS	0.26	0.60
FASTER	0.05	0.52
SPORTS MEET	0.16	0.50
GRADES	0.01	0.49
POPULAR	0.22	0.48
Others		
STANDS OUT	−0.14	0.26
RECORDS	0.39	0.38
ENTRANCE	0.20	0.28
PLAYS	0.42	0.24
FUTURE	0.26	0.20
CLUB	0.42	0.16

cooperativeness was perceived as having sub-factors, it is of interest that the behavioral contents of competitive sub-factors varied according to the school level. Table 3 presents the 3-factor loadings, after Varimax rotation, with the competitive loadings at each level underlined. In the cases of elementary and high school pupils, a fourth factor appeared with an Eigen-value of 0.5, but in neither case did the factor yield an interpretable, coherent cluster of items.

Among elementary school pupils, competition consisted of a broad factor (including social, sports and academic items), followed by a minor factor concerned with testing situations. At the middle school level, subjects clearly delineated academic and non-academic aspects of competition. Finally, at the high school level the first competitive factor

Table 3
Three-factor loadings on all items (by school level).

Item	Elementary			Middle			High school		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Cooperative									
COMPLETE	0.50	0.05	0.18	0.63	−0.01	0.18	0.69	−0.02	0.29
PREPARE	0.57	0.07	−0.03	0.63	0.12	0.06	0.73	0.00	0.31
WORK DONE	0.64	0.12	−0.24	0.59	0.09	−0.08	0.73	0.11	0.02
PARTNER	0.43	0.07	0.22	0.58	−0.00	0.16	0.69	0.12	0.30
HOMEROOM	0.50	0.22	0.24	0.69	0.03	0.19	0.65	0.02	0.14
TEACHER	0.63	−0.12	0.21	0.55	0.08	−0.12	0.73	0.03	−0.06
GROUP STUDY	0.51	0.17	0.04	0.63	0.09	0.17	0.54	0.01	0.28
COUNSELS	0.57	0.16	0.11	0.64	0.12	0.20	0.46	0.05	0.07
WEAK SPORTS	0.48	0.21	−0.10	0.59	0.27	0.12	0.59	0.29	0.15
Competitive									
CONTESTS	0.09	0.65	0.34	0.34	0.43	0.50	0.36	0.59	0.16
PRAISED	0.23	0.55	0.38	0.21	0.38	0.47	0.09	0.55	0.14
REGULAR	0.22	0.63	0.00	0.13	0.67	0.12	0.14	0.67	0.45
INDIVIDUAL	0.21	0.51	0.09	0.18	0.53	0.24	0.02	0.66	0.19
CLASS	0.01	0.53	0.12	0.17	0.48	0.44	0.17	0.32	0.60
FASTER	−0.05	0.50	0.22	0.05	0.13	0.63	0.01	0.49	0.16
SPORTS MEET	0.01	0.58	0.09	0.07	0.54	0.19	0.14	0.28	0.58
GRADES	−0.01	0.28	0.55	−0.05	0.20	0.61	−0.08	0.43	−0.07
POPULAR	0.19	0.47	0.20	0.15	0.46	0.09	0.34	0.60	0.08
Others									
STANDS OUT	0.06	0.27	0.02	−0.29	0.35	−0.03	−0.08	0.38	0.05
RECORDS	0.33	0.26	0.22	0.36	0.28	0.36	0.28	0.17	0.28
ENTRANCE	0.09	0.06	0.51	0.17	0.04	0.48	0.21	0.11	0.07
PLAYS	0.27	0.08	−0.02	0.37	0.20	0.10	0.40	0.24	0.35
FUTURE	0.21	0.31	0.07	0.30	0.11	0.31	0.37	0.03	0.33
CLUB	0.30	0.02	0.04	0.25	0.07	0.10	0.41	0.01	0.55

Note: High loadings on competitive factors are underlined for each school level.

contained individualistic activities (winning contests, praise by teacher, individual sports, etc.), while the second factor (being in the best class, winning at sports meets and club participation) all involved between-group competition. Thus, the factor analyses revealed two major developments in the types of competitive activities clustered by pupils: (1) from a general factor at elementary school to an academic/non-academic division in middle school, and (2) to an individualistic/group differentiation in high school. Factor structures for males and females at each school level were roughly equivalent.

Six items did not emerge from these factor analyses as clearly competitive or cooperative, first 'stands out in possessions in clothing' – this might be due to modesty of student responses. 'Best one's own records' and 'entrance examination preparations' loaded equally on both the cooperative and the competitive factors. This indicates that there is a cooperative (striving to meet others' expectations) and a competitive (rivaling one's own self) aspect to such activities. 'Playing with friends in free time' was described in teacher free-responses as a cooperative activity, yet it also had a fairly high competitive loading. It may be that play at school has a competitive dimension. 'Talking with friends about the future or schoolwork' also contained equally high competitive and cooperative loadings, although neither loading was particularly high. Finally, 'club participation' loaded more highly on cooperation than on competition, but this item did not load highly on either factor among middle school pupils.

Composite variables

Development of composite variables

Two composite variables were formed by counting the number of cooperative and competitive items (each ranging from 0 to 9 items per subject) which were ranked among the top ten most important behaviors by each subject. These variables suggest the generality of subjects' cooperative and competitive orientations. For instance, if a subject ranked mostly competitive items in the top ten, his/her competitive orientation was seen as generalized across many situations. As noted earlier, cooperation seemed more highly valued than competition throughout the sample. Therefore a third composite variable ('cooperative preference') was computed by taking the difference between the mean cooperative rating (over 9 items) and the mean competitive rating over 9 items, by each subject. This variable was an index of preference for cooperation over competition.

The average correlation of cooperative items with the cooperative composite variable was 0.69, and with the competitive composite variable it was only 0.27. Likewise, the nine competitive items were clearly competitive and non-cooperative in nature, as demonstrated by an average correlation of 0.64 with the composite competitive variable and 0.26 with the composite cooperative variable (all Ns = 927).

ANOVAs on composite variables

Two-way ANOVAs for the composite variables resulted in consistent trends in gender school level variation. The ANOVA results for (1) the number of top-ranked cooperative items, (2) the number of top-ranked competitive items, and (3) the 'cooperative preference' composite appear in table 4.

For the cooperative top ten composite, there was a main effect for school level, $F = 6.54$, $p < 0.01$, in which high school pupils included fewer cooperative items (mean = 5.09 items) than did middle school (mean = 5.54) or elementary school pupils (mean = 5.51). There were also significant main effects for subject gender on both the number of cooperative items, $F = 24.03$, $p < 0.001$, and competitive items, $F = 7.94$, $p < 0.01$, included among the ten most important. Females ranked more cooperative items among the top ten than did males – 5.66 vs 5.09. And males included more competitive items than did females – 2.17 vs 1.81. Gender differences for both cooperative and competitive items are clear at every school level. More noteworthy is the disparity between cooperative and competitive items, with far more cooperative items ranked highly than highly competitive items (grand means: cooperative = 5.39, competitive = 1.99). This suggests that while we

Table 4
ANOVAs for school level and gender effects on composite variables.

Scale	Source of variance	*df*	*MS*	*F*	*p*
Cooperative top ten	Grade	2	20.46	6.54	< 0.01
	Sex	1	75.15	24.03	< 0.001
	G×S	2	2.20	0.70	0.49
	Error	916	3.12	–	–
Competitive top ten	Grade	2	1.67	0.44	0.64
	Sex	1	30.05	7.94	< 0.01
	G×S	2	0.54	0.14	0.86
	Error	916	3.78	–	–
Cooperative preference	Grade	2	0.96	1.78	0.17
	Sex	1	12.15	22.47	< 0.001
	G×S	2	0.62	1.15	0.32
	Error	916	0.54	–	–

may call females cooperative and males competitive in orientation, both sexes were much more positive towards cooperative than competitive items.

'Cooperative preference' was significantly higher for females than for males at all school levels, $F = 22.47$, $p < 0.001$. Differences (on a 5-point scale) were as follows: elementary females = 0.80, males = 0.62; middle school females = 0.89, males = 0.71; high school females = 0.89, males = 0.53. So while cooperative preference was clear regardless of gender, it was stronger among female subjects. The school level × gender interaction for cooperative preference and the other two composite variables did not reach statistical significance.

Discussion

This investigation of cooperative and competitive attitudes showed several distinct findings. The degree of importance attached to cooperation and competition in daily life is affected by pupils' school level, gender and the specific school activity. We relate each of these to cultural factors and school socialization experiences.

Pupils' school level

Several specific activities were of varying importance depending on the pupils' school level. These variation may result from the type of cooperation and competition emphasized at different school levels. For instance, elementary school children explicitly compare themselves with peers on individual athletic skills, while in middle school team sports and clubs become central, and in high school it is significantly more important to better one's *own* records.

Factor analyses further revealed how cooperation and competition shift with age. The first change, between primary and secondary school, was from a general competitive factor to a distinction between academic and non-academic competition. All previous studies of cooperative and competitive orientation have focused on either attitudes toward games or mode of learning. If there are two aspects of competitive orientations at the beginning of secondary school, what socialization experiences might result in such a development? Possibly in Japanese schools academic competition becomes explicit as individual differences in

achievement are suddenly accentuated in middle school (Amano 1981). It may be important to distinguish academic and non-academic competition at this age because some pupils 'can' or 'can't' compete in one or the other domain. At the high school level factors distinguishing group-centered and individualistic competition were apparent. This may be due to both the accumulation of group experiences throughout secondary school (Rohlen 1983), a growing sense of personal autonomy during adolescence, and the progressive isolation of pupils with age (Mita 1981). These aspects of school socialization result in an increased sense of belongingness *and* separateness with respect to other groups and individuals.

Overall the results indicate, contrary to previous reports, that pupils do not become 'more' or 'less' competitive with age. Rather, the expression of such competitiveness changes in style with age, as the activities prevalent at each school level change. Such findings suggest the inadequacy of previous global measures of competitive preference, and the need for research on *how* and *why* children view competition differently as they grow up. The consistency of the general cooperative factor across age suggested that a positive and stable attitude towards cooperation may be formed earlier than fifth grade. Observations at several Japanese preschools and primary schools by the authors revealed an emphasis on helping and harmonious interpersonal relations ('nakayoshi') even in the younger age groups.

Gender variation

Some of our findings on male/female differences were in accord with previous findings on Western children – i.e., boys were most positively disposed towards competitive activities and girls more positively oriented towards cooperative activities. Yet while significant, the degree of absolute difference between the sexes was often small. In addition, instances of similarity between the sexes were equally clear. A comparison of the number of cooperative and competitive items ranked in top ten, and of the relative rankings of the 24 different activities, demonstrated that both boys and girls valued cooperation more than competition. In addition, there were no differences in the factor structures of boys and girls, so that while their attitudes towards some activities differed, their definitions of cooperation and competition were the same. This similarity is contrary to most findings of Western studies on

attitudes. Japanese sex-typing is quite apparent in secondary school, where girls and boys are segregated in sports and other activities (Singleton 1982). Yet the overall experiences and socialization pressures in Japanese schools, especially in primary school (Cummings 1980), are egalitarian. In many regards boys and girls are treated the same, which might account for the similarity in attitudes between the sexes. It is notable also that there were no sex-by-school level interactions for the composite variables, which is in opposition to the results of Ahlgren and Johnson (1979) and Kashiwagi (1974). Perhaps sex roles have been so well established by fifth grade that they remain stable throughout the school years. Socialization experiences may also be so systematic and uniform throughout the school years that the importance of transitions between school levels for sex-role expectations are minimized.

Cultural variation

The strength of the 'groupism' ideology (Befu 1980) in pupils' attitudes is clear throughout our sample. At all ages and for both sexes, cooperation (including numerous forms of group activities) was the preferred orientation. Yet Japanese pupils of all ages attached importance to some forms of competition. In considering both school level, gender and situational variation (24 different activities), this study widens our body of knowledge on the development of cooperation and competition and the sex-typing of attitudes.

Replication of this study in other Japanese schools, and in other Eastern and Western cultures is necessary to validate the generality of the age trends reported in this paper. Graves and Graves (1984b) have suggested that there exists a pan-cultural modernization/urbanization factor which may override or interact with cultural variables. If this is the case, the item pool 'defining' cooperation and competition may vary, but one would still expect that the findings reported here – i.e. cooperative preferences overshade competitive tendencies and competition has a more complex structure than cooperation – would be validated by replications in other cultures. Finally, behavioral assessments of pupils will be needed to determine the degree to which our questionnaire reflects (1) cultural ideology, (2) actual preferences, and (3) actual behavioral choices. As such data is compiled in several cultural settings, a theoretical basis for cultural variation and similarity in cooperation and competition may be advanced.

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