# Aggression Among Children in Four Cultures

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## Abstract

Behavioral aggression was observed among 192 three- to nine-year-old children in naturalistic settings in Belize, Kenya, Nepal, and American Samoa. Main results were that (a) boys exhibited aggression in approximately 10% of their social behaviors, girls in 6%, and in all four cultures the aggression of boys was more frequent than that of girls at a marginally significant level or better; (b) the aggression of boys, though not of girls, occurred in the presence of large numbers (and proportions) of same-sex peers; (c) aggression declined with age; (d) only 5% of children's aggressive interaction was directed toward adults (individuals aged 17 or older) whereas 30% of their other, nonaggressive interaction was directed toward adults; (e) the presence of either parent tended to be associated with less aggression, and; (f) aggression was displayed more frequently in the two patrilineal cultures (in Kenya and Nepal) and less frequently in the other two cultures. Discussion centered on plausible interpretations of the findings.

# Aggression Among Children in Four Cultures

The present paper is concerned with behavioral aggression, and especially with sex differences in such aggression, among three- to nine-year-old children in four nonindustrial cultures. On the basis of data from systematic observations of the everyday social behavior of these young children, we shall describe the frequency, types, and (some) correlates of their aggression, and attempt to evaluate the outcomes in terms of what is known from the social-science literature. Although comparative data cannot give definitive answers to questions about the sources or the consequences of agonistic behavior, they can provide a form of complementary analysis that will ultimately help us construct a fuller and more valid understanding of this significant component of the human behavioral repertoire. Aiding that quest in the current study was the fact that a consistent and reliable methodology was employed in the four cultures, and that the data-gathering at all sites was conducted under the control of the same two investigators.[1]

As noted above, the issue of sex differences in aggression constitutes a central focus of this study. An earlier report did combine our current data with findings from the Six Culture Study (Whiting & Edwards, 1973), though the analysis was accomplished only by reducing all data to simple dichotomous comparisons between boys and girls within each culture. Nevertheless, the results from that 10-society sample allowed the drawing of some rough conclusions about sex differences, to wit: Boys displayed more aggression than girls both overall and within each of three different categories of aggression—assaulting, roughhousing (horseplay), and symbolic aggression (e.g., insulting,

threatening by gesture or statement) (Munroe & Munroe, 1994a). The breakdown for specific categories was that boys more frequently assaulted others in 8 of 10 societies (one society showed the opposite pattern and one was tied; $\underline{p} = .02$, Sign Test); boys also more frequently engaged in horseplay in 8 of 10 societies (again, one society showed the opposite pattern and one was tied; $\underline{p} = .02$); and boys more frequently engaged in symbolic aggression in 6 of 10 societies (one society showed the opposite pattern and three were tied; $\underline{p} = .06$). For all forms of aggression taken together, boys' scores were higher in 8 of 10 societies (two societies were tied; $\underline{p} = .004$). As reviews of the literature make clear, the tendency for aggression to be higher among males than females is a robust one (Daly & Wilson, 1988; Maccoby & Jacklin, 1980; Segall, Ember, & Ember, 1997).

Dichotomous comparisons of course do not reveal whether sex differences within a given society are strong enough to be meaningful, and one purpose of the present investigation was to answer this question. There were additional questions that could be asked of the data from our four cultures, e.g., whether aggression increased or declined with age; whether its expression was affected by the sheer number of persons present; and whether it was more likely to be expressed toward, and in the company of, peers rather than adults. For all of these latter questions, we could also discover if the answers differed for girls and boys, and if the answers differed for physical vs. symbolic aggression. As we shall see, cultural differences in the frequency of aggression occurred as well, and we will try tentatively to identify the sources of those differences.

## Method

### Samples

The four sample societies represented a broad range of geographic, linguistic, and cultural types. The Black Carib (or Garifuna) sample, in southern Belize, are town-dwelling members of an ethnic group whose racial origins are African but whose cultural pattern is Amerindian. Traditionally rice growers and fishermen, the Black Carib in recent years have turned to wage labor. The Logoli of western Kenya are members of an equatorial, Bantu-speaking group. Living on dispersed homesteads, the Logoli are hoe farmers of maize and millet and are keepers of cattle. Wage remittances by absent males have now supplemented subsistence farming in many homes. The Newar sample, of the Kathmandu Valley, Nepal, are Tibeto-Burman-speaking members of a farming caste. The sample members live in a compact village surrounded by terraced rice fields. Many individuals in the village supplement their subsistence with daily wage work in the city of Kathmandu. The Samoans of American Samoa are village-dwelling members of a Polynesian island culture. Still taro growers and keepers of pigs, Samoans in recent years have incorporated U.S. development and employment programs into their economic system. Concise descriptions of the relevant sociocultural contexts can be found in Munroe and Munroe (1990a, 1990b, 1991) and Munroe, Munroe, Shwayder, & Arias (1997).

In each of the societies, 48 children were selected—six males and six females at three, five, seven, and nine years of age—for a total sample of 96 boys and 96 girls. On the basis of information gathered during village censuses, boys and girls whose birthdates most nearly matched each other were selected for inclusion in the four designated age categories.

Children's Social Interaction

In each community, local assistants who were native speakers of the language received training in five different types of naturalistic observation. The present study was concerned with only one of those types, that of children's social interaction. Observers, following pre-set schedules, sought out children in their natural settings, and once a specific individual was located, the observer immediately recorded details of the setting, e.g., the location of the activity and the persons present. This protocol was followed on those occasions when the focal child was part of a group consisting of at least two other persons, thus allowing the child under observation the opportunity of choice in social interaction. If a focal child was alone or with only one other person, the observer would seek out the next-scheduled child. (Such a procedure means that the average group-size would be inflated and could not be used to estimate how many persons were typically in the neighborhood of our sample children. A different observational technique was applied when that question was a focus of our interest.)

From the beginning, the observer watched for and recorded any social behavior on the part of the individual. This behavior could be a clear social initiative, for example, "Let's play marbles," or what would normally be considered a response, for example, "Yes." The observer watched the immediate effect and filled in requisite information. The

recording form (an example of which can be found in Munroe and Munroe, 1994b) allowed the observer to note the details of the individual's behavior, including the nature of the instigation by the child, the target of the child's behavior, the distance of the target from the child, and so on. The initiating event was recorded in narrative form. A corpus of such events was built up by observing each child approximately 30-40 times over a series of occasions.

For purposes of categorization of both the targets of social behavior and the persons present during social episodes, observers uniquely designated the fathers and the mothers of the sample children. An additional eight categories were created through the use of age-sex criteria, as follows: male children 0-2 years; female children 0-2 years; male children 3-8 years; female children 3-8 years; male children 9-16 years; female children 9-16 years; males 17 and older; females 17 and older.

Following fieldwork, the social-interaction protocols were coded by graduate assistants into the 12 summary act categories developed by the Whitings (1975) in the Six Culture Study. The categories, in addition to the three denoting aggression (i.e., assaulting, horseplay, symbolic aggression), were as follows: offers help, offers support, suggests responsibly, reprimands, acts sociably, touches, seeks help, seeks attention, seeks dominance. (Four new categories, termed "gives information," "seeks information," "asks permission," and a residual "other," were added to those of the Whitings. These categories in toto appeared in approximately 15% of all social interactions, but yielded nothing in the way of interesting correlates.)

Between-observer agreement as to initiating event (and its transcription) was 82.4% for 262 protocols, and inter-rater agreement as to social-act category was 80.2% for 81 protocols.

## Data Analysis

Variation in the number of protocols per child dictated that data analyses utilize proportions rather than absolute figures. Each child was given a score of the number of aggressive acts (of a particular type) in nonwork activities divided by the total number of nonwork acts.[2] In addition, the availability of information on the full range of children's social behavior meant that analysis could be extended to allow a comparison of the characteristics of aggressive interactions with those in which nonaggressive behavior was displayed. But due to the large number of interaction protocols, totaling more than 6,000, coding of nonaggressive interactions was limited to random sampling (per child) of approximately one-eighth of those protocols. These nonaggression protocols constituted a database more than 50% larger than that for the episodes involving aggression. Specifically, there was a total of 544 protocols involving aggression, and a total of 851 protocols involving nonaggression.

Previous research has shown both sex differences and age trends regarding aggressive social behavior. Given these prior results, all statistical runs in the sections covering sex and age differences were conducted as one-tailed tests, and runs in the other sections were conducted as two-tailed tests. Whereas the sex distinctions were maintained for

most analyses, age categories were often coalesced into a simple dichotomy of “adults” (those 17 and older) vs. “nonadults,” or peers.

## Results

### Sex Differences in Aggression

We present first a reprise of the reported sex-difference findings, and we add to these simple dichotomous comparisons an indication of which differences were statistically significant. As shown in Table 1, in all societies the preponderance of aggression was displayed by males. Newar boys exhibited significantly greater aggression than girls within each of the three types of aggression, and in the other three cultures the sex difference reached an overall .10-level directional tendency. Inspection of the specific categories of aggressive behavior reveals that assaulting, the quintessence of physical aggression, was the most regular in pattern, with all four societies showing a bias toward male over female expression, and at least a .10-level directional tendency in three of the four. Additionally, when the scores within each category were aggregated across the four societies, a significantly greater male than female contribution was found for each of assaulting, horseplay, and symbolic aggression.

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Insert Table 1 about here

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Besides the differential involvement of boys and girls in aggressive acts, there was also a strikingly gendered element in the social surrounds when aggression did occur. We shall take up this phenomenon below in the section titled Social Ecology of Aggression.

Despite these regularities, agonistic behavior made up but 8% of the sample children's total social acts (partitioned by culture and sex, the scores were Newar boys 14%, Newar girls 7%, Logoli boys 12% Logoli girls 8%, Samoan boys 7%, Samoan girls 5%, Black Carib boys 5%, and Black Carib girls 3%). Aggression rates inevitably being small for some specific categories, for statistical purposes it was advisable to enhance rates, if possible, by means of collapsing the categories into fewer than three. A significant association between the two forms of physical aggression, assaulting and horseplay ($\underline{r}$ = .24, $\underline{p} < .001$), made feasible their treatment as a single category.[3] Symbolic aggression, on the other hand, was maintained as a separate category because it was not related to either of these physical expressions (for assaulting, $\underline{r}$ = .13, ns; for horseplay, $\underline{r}$ = .02, ns). An additional factor was that the total frequency of symbolic aggression alone was approximately equal to that of assaulting and horseplay together. Proceeding from these considerations, we made the decision to employ not more than two categories of aggression, the physical (assaulting plus horseplay) and the symbolic, in continuing data analyses.

Age Trends in Aggression

The downward course of aggression with increasing age has been a steady finding in Western research (Coie & Dodge, 1998). The degree to which this generalization holds

in our four cultures was ascertained by dividing the age groups into sets of younger children (three- and five-year-olds) and older children (seven- and nine-year-olds). Table 2 indicates cross-cultural stability in decline except in Belize, where the low aggression rates for both young and old children may have produced a "floor" effect. But we see that in general, the pattern found among American children is replicated here.

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Insert Table 2 about here

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When the data in Table 2 were broken down so that acts of physical and symbolic aggression could be treated separately, the results looked much the same. For the four cultures treated together, physical and symbolic aggression both declined significantly from younger- to older-aged children, though the dropoff was sharper for physical aggression. Within cultures, all trends were downward with age for physical aggression (Nepal and Samoa significantly so), and three of four trends were downward for symbolic aggression (only Kenya significantly so), with Black Carib children a minor exception. As for gender, the decline with age was significant for boys ($t[94] = 2.83$, $p < .005$), while the fall-off reached near-significance for girls ($t[94] = 1.59$, $p < .06$.

Social Ecology of Aggression

In this section we deal with questions about the numbers and types of social categories (peers of same and opposite sex, adults, parents) present during sample children's aggressive episodes, and the issue of whether frequency of presence determined the degree of involvement in aggression. We also consider the social-ecological profile of non-agonistic social behavior to see if it matches that of aggression.

Relative involvement of peers and adults. On those occasions when childhood aggression was being expressed, the bulk of the personnel present was made up of non-adults, here loosely termed "peers." Such individuals constituted slightly more than 80% of the total social body surrounding aggressors. With respect to the targets of aggression, the actual involvement of peers was even more intensive, as sample children's agonistic behavior was directed toward peers in approximately 95% of the cases.[4] Much the same thing was revealed by asking a similar question of the data set, namely, what was the social identity of aggressors' modal targets: Just under 96% of their modal targets were peers, and, in the case of older boys, their modal targets were always peers.

Since the sample children's aggression was so heavily influenced by peers, we examined non-agonistic interaction to see if peers also dominated in other domains of social behavior. Here we found a very different set of arrangements. Although peers still made up about three-quarters of the social environment of the sample children, they were the targets of only 70% of nonaggressive social interaction, a very large decline from the 95% observed for aggressive behavior. As well, when modal targets for nonaggressive interaction were considered, a similar 72% of them fell into the category of peers. There was an age-related trend in this non-agonistic interaction, with the modal target being in a peer category for 66% of the younger sample children and 78% of older children. Peers thus became more important for older children's "ordinary" interaction, though not to the level found when aggression was displayed.

It was the mothers of the sample children who were absorbing most of the 30% of nonaggressive social interaction that was adult-directed. (The fathers received fewer than 10% of these social acts, and adult females and males the rest.) At the same time, as

already noted, neither the mother nor any other adult was the object of the child's aggression to any degree. Nonetheless, as it turns out, the mother's sheer presence was associated with the expression, or rather the non-expression, of physical aggression. Mothers were present 41% of the time when any social behavior other than aggression was exhibited by sample children, but only 26% of the time during physical-aggression displays. Due to the high variance in mothers' overall degree of presence in their children's social settings, this difference reached only a marginally significant level ($p < .10$). We were able to make a more stringent comparison, however, by looking at the mothers of only that half of the sample children who displayed some physical aggression, and asking if these mothers were actually present less frequently than otherwise during their children's physical-aggression episodes. If this did occur, it would indicate that the presence of a maternal figure was exerting some inhibitory effect on the expression of children's assaulting behavior and rough-and-tumble play. Such was the case, with 44 of 70 mothers (plus 25 ties) being present less frequently when their children were engaged in interaction judged physically aggressive ($z = 2.34$, Sign Test with correction, $p < .02$).

When this type of analysis was applied to fathers, a similar though weaker result was obtained. In all, 24 of 36 fathers were present less frequently than otherwise during their children's physical-aggression episodes ($z = 1.83$, Sign Test with correction, $p < .07$).[5]

The more frequent expression of physical aggression in the absence of parents prompted us to ask if aggressive displays were influenced by the <u>number</u> of persons in the child's social surrounds. Surprisingly, given the parents' relatively low degree of presence on these occasions, we found that aggression occurred when larger rather than

smaller groups were present, and that the basis for difference in group size was variation in the number of children, not of adults. The figures for average number of children present (excluding sample children themselves) were 4.3 during the expression of physical aggression, 3.8 during symbolic aggression, and 3.2 during other types of interaction (peer-group size was significantly larger for each type of aggressive activity vis-à-vis nonaggressive activities). While the contrast between the size of peer groups in aggressive and nonaggressive interaction was striking, it was underlain by an even more powerful manifestation, which was the aggregation of children by sex, and particularly the clustering of male children. We take up this phenomenon in the following subsection.

Given that physical aggression occurred less frequently in the presence of various classes of adults, one might expect it to have been more freely expressed in behavior settings away from the children's immediate home areas. Such a trend was only weakly discernible, with 40% of physical-aggression episodes taking place in settings other than the sample children's home or yard areas, versus 36% of the nonaggressive acts by those same children.[6]

Gendering of the social surrounds. During those episodes in which male children displayed physical aggression, they were involved with peer groups that numbered, on the average, 2.9 boys and 1.6 girls. As Table 3 indicates, this very large, highly significant difference was in contradistinction to those occasions on which female children displayed physical aggression—there, the groups numbered, on average, 2.1 girls and 1.9 boys, a small, nonsignificant difference.[7] Male sample children also involved themselves in significantly larger same-sex than opposite-sex peer groups during the display of symbolic aggression, with means of 2.7 boys and 1.6 girls; but

females did so as well, despite a smaller difference in average size of same-sex versus opposite-sex peer groups (means of 2.0 girls and 1.3 boys). And finally, during episodes of nonaggressive interaction, the absolute differences between size of same- and opposite-sex peer groups were comparable for the sexes, with means for males of 2.0 boys vs. 1.3 girls, and for females of 1.9 girls vs. 1.3 boys.[8]

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Insert Table 3 about here

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We can see that the above trends were quite different for the two sexes. As the male sample children moved from "neutral" behavior to aggressive displays, there was an increase in both the average number of boys and the ratio of same-to-opposite sex peers present in their immediate social environments.[9] For the females, however, there was hardly any increase in the average number of girls present as their behavior crossed from "neutral" behavior to aggression, and their modestly positive ratio of same- to opposite-sex peers almost disappeared entirely when they engaged in physical aggression. One way to interpret the latter result is to note that in the environments of females, boys were present at their highest level during females' physical aggression (mean of 1.9 boys per protocol, versus a mean of 1.3 boys in both symbolic aggression and other female interaction), and to view this as another aspect of boys' involvement in aggressive episodes.

In considering the above same-sex/opposite-sex ratios among children present, we next asked if this matched the profile of actual targets of aggression. In other words, did the sex ratios of modal targets resemble the sex ratios of children simply present during

interaction? The answer is that with one exception, the patterns matched almost perfectly. First, for females, both the proportion of cases in which modal targets were other girls and the proportion of peers present who were themselves girls ranged from just above 50% to just above 60%, always in synchrony: for physical aggression, same-sex/opposite-sex ratio of those present = 52%, modal target a girl = 54%; for symbolic aggression, 61% and 59%, respectively; for nonaggressive interaction, 60% and 62%, respectively. For males, the synchrony held for two of the three comparisons, though the level of same-sex focus was higher: for physical aggression, same-sex/opposite-sex ratio of those present = 65%, modal target other boys = 62%; for symbolic aggression, 64% and 68%, respectively. The exception among males was that during their nonaggressive interaction, the same-sex/opposite-sex ratio of those present was 60% (similar to other figures), but the modal target of this "ordinary" interaction proved to be other boys in an elevated 76% of the cases. What seemed anomalous about the discrepant focus on same-sex peers was its occurrence among males engaged in any type of interaction except aggression, and it was of course precisely in males' aggressive behavior that we saw, above, the distinctive emphasis on the presence of other boys. A simple resolution, however, could be provided by the following generalization: The presence of several male peers (approximately three, on average) tended to evoke aggression in boys; whereas the presence of fewer male peers (about two, on average) tended to evoke nonaggressive behavior that was directed disproportionately often toward one of those other males.

The general bias toward aggregating with same-sex peers was not typically expressed in the form of complete sexual segregation, but in terms of a simple preponderance of

children of the same sex as that of the child under observation. About 70% of males' peer groups were of mixed sex, as were almost three-fourths of those of females. These figures held stably across acts of physical aggression, symbolic aggression, and nonaggressive social behavior.

Another gender-related regularity was that males' degree of same-sex bias (average size of same-sex minus opposite-sex peer groups) was correlated with the frequency with which the boys were away from their home areas. The relationship held up during both aggressive and nonaggressive social acts, the respective r's being .28 and .27, both significant. These associations were not present for females.

Finally, we can address the issue of "person-versus-situation" in accounts of behavior (Funder & Colvin, 1991). When aggressive males were not being aggressive, which was of course most of the time, did they still aggregate in same-sex groupings more strongly than the males who were not aggressive at all? The answer is that they did, but only marginally so. Whereas non-aggressive males displayed a "mean bias toward same-sex peers" of 0.5, aggressive males during their non-aggressive acts displayed a somewhat larger "mean bias" of 0.8. This 0.3 difference was not significant. It suggests that aggression was less a function of the person than of the situation—that is, of the presence of a preponderance of same-sex versus opposite-sex peers. We must keep in mind, however, that this "situation" conduced toward aggression mainly for a certain type of "person," namely, a male person.

## Cultural Differences in Aggression

Children in the two patrilineal cultural groups, the Newars and the Logoli, exhibited higher mean levels of aggression—11% and 10%, respectively, of total social acts—than

did the two non-patrilineal groups, the Black Carib and American Samoans, whose respective levels were 6% and 4%.[10] This result mirrors the sex differences, in which the strongest overall differentiation also occurred among the Newars and the Logoli (the latter much more marginally than the former, however).

There are holocultural codes on kinship and child training which allow us to ascertain the generality of our results on patrilineality and aggression. The ratings of Barry, Josephson, Lauer, and Marshall (1976) include judgments about the degree of emphasis on aggression in early and late childhood for both boys and girls. When these ratings are sorted by type of kin group (Murdock, 1967), we find that among older boys, aggression is inculcated more strongly in societies with patrilineality than in those with non-unilineal descent groups, $t(102) = 2.57$, $p < .02$, two-tailed test.[11] On the other hand, the larger sex difference in aggression within our own two patrilineal sample societies is not reflected in the holocultural ratings. But a parallel regularity does exist: Among societies with a primary residence pattern of patrilocality (viz., either "patrilocal" or "virilocal" in Murdock's [1967] terminology), older boys receive a stronger inculcation in aggressiveness than do older girls, $^2(1) = 6.88$, $p < .01$, two-tailed test. (This regularity does not hold for younger boys and girls.) Patrilocal residence patterns are characteristic of both the Newars and the Logoli, whereas a neolocal pattern is exhibited by the Black Carib, and bilocality by the Samoans. To a modest degree, then, the holocultural data approximate the outcomes observed for the four sample societies.

## Discussion

Aggression was not a highly prominent feature of the social behavior of our sample children, but neither was it a trivial element. Making up 8% of all social behavior, and

exhibited at least minimally by almost 90% of the boys and three-fourths of the girls, aggression could certainly be characterized as a recurring activity in these children's lives. Yet the inflections induced by sex, age, and culture made for marked diversity in agonistic behavior, and it is to the putative effects of these factors that we want to devote most of this discussion.

Sex Differences

The sex differences were modest in magnitude but directionally consistent, with boys in all four cultures exhibiting more frequent aggression. The findings fit, albeit somewhat weakly, with the results from Maccoby and Jacklin's (1980) meta-analytic study, which found 24 outcomes favoring boys' aggression, 8 with no difference, and none in which girls displayed higher aggression. Although only one of our cultures exhibited significantly different male versus female aggression, we point out that in all four the difference did reach at least $p < .10$. It is perhaps appropriate to note Rosenthal's (1991) comment that "God loves the .06 level nearly as much as the .05" (p. 220).

The tendency of both boys and girls to segregate by sex has been found in numerous studies (cf. Geary, 1998, for a summary). What is of greatest interest here is the fact that the phenomenon of aggregation-by-sex was associated most strongly with episodes of aggression by the boys. It was during their aggressive acts—both physical and symbolic—that they were surrounded by nearly twice as many other boys as girls, whereas girls never attained a same-sex versus opposite-sex ratio of this size, nor did the boys when they were engaged in nonagonistic behavior. Boys also were more numerous in those girls' groups in which physical aggression, rather than any other social behavior, was being expressed.

Both aggregation-by-sex and higher male aggression appear reliably in the literature on sex differences (Geary, 1998; Maccoby, 1998), and our findings are clearly in line with regularities of this kind. But notable in the present results is the extent to which these differences appear to be much more the effect of a "push" by males rather than females. There is the aggression itself, which is more frequent among boys; there is, during aggression, the greater aggregation-by-sex of boys; there is the high presence of boys during the episodes of physical aggression by girls; and there is the strong tendency of boys, when groups are small and aggression is not being expressed, to direct their social behavior toward other boys. Maccoby speaks to many of these behavioral characteristics when she remarks, in her overview of the literature, that she suspects that "the major activating condition for male-style play in a boy is the presence of other young male peers" (1998, p. 292). She also concludes that biological factors are good candidates for helping to explain the gender segregation itself. As she notes, male playgroups, which facilitate the formation of dominance hierarchies and serve to regulate male aggression, are similar to those found among our primate relatives (Meany, Stewart, & Beatty, 1985). From this perspective, we might view the aggression-in-same-sex-groups of peers as an ineluctable part of the process of growing up male.

Age Differences

The age-related drop-off in aggression in our data was consistent with the findings from Western research, and no real surprises arose in connection with culture, sex, or type of aggression. We emphasize, however, that the decline with age refers only to frequency of mild forms of childhood aggression; it is well-known that serious antisocial

behavior and violence, which are strongly associated with males, tend to increase in adolescence and early adulthood (Segall, Ember, & Ember, 1997).

Social Ecology

Several factors in children's social surrounds seemed to affect the level of aggression. First, sheer group size was associated with aggressive behavior, though this was primarily a function of the clustering of boys, and not of girls or of adults. Second, peers made up 80% of the social body enveloping sample children, but they constituted an even more disproportionate 95% of the targets of children's aggression. And third, presence of the mother or the father was associated with reduced aggression on the part of sample children. No category of adult person absorbed any significant aggression, but the mother was the main adult target of children's ordinary interaction, and much more strongly so in early than later childhood.

In the above results, we can see the enhancing effect of (male) peers and the dampening or inhibiting influence of parents with respect to aggression. The findings recall the conclusions of Whiting and Edwards (1988), in their important 11-culture study, that "children who have been exposed to peers more than others have more opportunity to practice egoistic conflict behavior and challenging styles" (p. 265), and that, toward mothers, the children display dependent and sociable behaviors due to the "nurturing, training, and guiding dimensions of the maternal role" (p. 157). Based on our findings, we would modify these generalizations to suggest the following: that aggression is most strongly affected by exposure to male peers (cf. Butovskaya, 1997; Omark,

Omark, & Edelman, 1975); that the dependent and nonaggressive style manifested toward mothers is also characteristic of behavior toward fathers; and that in the presence of either parent, expression of physical aggression toward anyone is diminished.[12]

The debate over person-versus-situation (Funder & Colvin, 1991) does not receive much clarification from our data. We found that aggressive boys tended to be with relatively large numbers of male peers on those occasions when they were expressing aggression, but not in the more frequent situations when they displayed other forms of social behavior. Although this evidence lends itself to an interpretation of aggression in terms of "situation"—here an ecological situation, viz., the presence of a large number of same-sex peers—it applies only to boys. The generally close match between degree of presence and "choice" of social target also was largely consistent with a situation-determined interpretation, but again this interpretation was violated by certain categories of "persons": the direction of aggression toward peers (versus adults) well above their representation in the social environment; and the direction of nonaggressive social acts toward boys by other boys, once more well above the numerical representation of those other boys in the social environment.[13] Thus, situations were important, but persons—not personality types, but categories of persons like "male child" or "same-sex peer"—were very meaningful too.[14]

Cultural Differences

Patrilineality and aggression were positively associated in our sample—that is, high aggression rates occurred among the Newars and Logoli—and also at the holocultural level, where patrilineal descent went together with socialization for aggression (among boys in later childhood). Additionally, the holocultural data showed a sex difference in

aggression training (in later childhood) among patrilocal societies (versus societies with other postmarital residence patterns); and in our sample, it was also the two patrilocal societies, again the Newars and Logoli, which displayed the largest sex differences.

These regularities are not without their difficulties. The holocultural results apply to descent systems for the cultural-level findings, and to residence patterns for the sex differences, but not vice versa. And the results hold only for selected categories, e.g., for older boys but not older girls, or for later but not early childhood. More fundamentally, the holocultural data refer to socialization pressures, and our own four-culture observational data deal only with children's behavior.

It is further the case that the Black Carib aggression is significantly below that of all three other groups, not just the Newars and Logoli but the Samoans as well. Consistent with the lack of aggressivity among Black Carib children is a very low rate of aggressive and violent behavior among Black Carib adults (Gonzalez, 1988: Munroe, 1964). Given this, the Black Carib data appear to indicate a pattern of nonagonistic behavior begun in early childhood and carried through into later life. Nonetheless, the pattern itself would still require some sort of explanation, which is unfortunately beyond the scope of the present paper.

The methodological issues and the spottiness of the results must be kept in mind. But the overall patterning recalls the several sociocultural and behavioral correlates of what is sometimes called "the patrilineal complex," that is, kin-based groups of males organized according to descent, residence, and marriage systems. Elements of the patrilineal complex have been linked to type of polity (Paige, 1974), type of warfare (Ember & Ember, 1971), circumcision ceremonies (Paige & Paige, 1981), and premarital sexual

restrictiveness (Frayser, 1985). We can tentatively add childhood aggression to this list, and also perceive how such aggression and the patrilineal complex may be tied together in some way by the male aggregating tendencies discussed above.[15]

## Conclusion

In general, the findings reported herein are neither surprising nor new, with the possible exception of the connection between aggression and the so-called patrilineal complex. The regularities associated with sex and age have been found before, and most of the social-ecological correlates of aggression were likewise predictable. Nevertheless, the apparent effects of boys' clustering behavior on aggression are powerful and striking. Maccoby's (1998) review explores the findings that boys' activity level increases when they are interacting with playmates, that they become especially aroused when engaged in competition or meeting challenges, and that they may possess less ability than girls to regulate impulsive behavior. All of these are relevant to the results reported here. It is to our advantage as researchers that child aggression and same-sex aggregation are phenomena readily observed, and we would urge continuing close investigation into the relationship between them.

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## Notes

1. The fieldwork was carried out by Robert L. Munroe and the late Ruth H. Munroe.
2. Work activities, which involved approximately 10% of the protocols, were excluded from the analyses of nonaggressive social behavior because they did not appear during the expression of aggressive behavior. An inspection of work-activity protocols revealed no meaningful differences from other types of protocols on the variables of interest for our analyses.
3. Obviously the relationship is not strong enough that these variables could be considered a unitary phenomenon in measurement terms. But each of the categories made up such a small proportion of children's social behavior—a little over 2 ½ % in the case of assaulting, and just above 1% in the case of horseplay—that the gain in stability of scores seemed to outweigh any disadvantages.
4. Although "infants"—individuals under the age of three—made up almost 10% of the targets, and might seem to be mislabeled as peers, the majority of aggressive acts toward "infants" were committed by individuals of a similar age, namely, members of the youngest age grouping in the samples, three-year-old children.
5. A lower degree of father presence was also associated with children's displays of symbolic aggression, but the mother's relative presence was not associated with this dimension of aggressive behavior.
6. The difference was somewhat stronger when this comparison was made between <u>any</u> episode of aggression (physical or symbolic) and all nonaggressive acts, the relevant percentages being 37% and 31%, respectively.

7. These male-female differences can also be shown by means of more closely controlled comparisons. Taking the 53 males who exhibited some physical aggression, we found that during aggressive episodes 38 were involved with larger average same-sex than opposite-sex peer groups, and 13 were the reverse (with 2 cases of ties). A Sign Test (with correction) indicates this to be a highly significant difference ($\underline{z} = 3.33$, $\underline{p} < .001$). Females, however, did not show this pattern. Of the 42 females who displayed some physical aggression, only 17 were involved with larger same-sex than opposite-sex peer groups, and 18 were the reverse (with 7 cases of ties).
8. Despite these relatively small differences between size of same- and opposite-sex peer groups (that is, only 0.7 for males and 0.6 for females), they are statistically robust differences—as shown in Table 3--due to the large sample sizes, which are based upon all subjects (96 males and 96 females) rather than just those involved in aggression.
9. One reviewer astutely noted that our female subjects would have been more likely than the males to be in the vicinity of infants, i.e., children in the age range of 0-2 years. This proved to be the case. More importantly, however, inspection of the data showed that infants contributed almost nothing to the same-sex aggregation of boys during their aggressive episodes. That is, male children up to and including the age of two were hardly present during boys' aggressive acts in any greater numbers than were female children of this age.
10. The Newar aggression score was different from those of both the Black Carib and the Samoans at the .001 level, and the score of the Logoli different from that of the Carib

at the .001 level, and that of the Samoans at the .02 level. It is also true, however, that the Black Carib score was so low that it differed from that of the Samoans, at the .01 level.

11. For younger boys, the difference in scores between patrilineal and non-unilineal societies, though directionally the same, was not significant. For both older and younger girls, the differences were only weakly in the expected direction. All these tests excluded societies with double descent or matrilineal descent. For both of these categories, the scores varied and failed to fit into a pattern resembling either patrilineal societies or non-unilineal societies.
12. Our findings would lead us to express reservations toward Harris's (1998) strong argument about the importance of peer influence and the minimal effects of parents. The influence of peers is obvious in our data, but so is that of the mother and the father. We cannot take up here the issue of long-term versus concurrent effects.
13. In an East African sample, Harkness and Super (1985) found close matches between proportions of peer-presence and peers-as-targets (never contrasting more than 9% for their sample children of 3-9 years of age), but they did not break down response types into aggressive and nonaggressive behaviors, as we have done here.
14. Another aspect of male aggression among these children, found in a related study (Munroe, Munroe, & Shimmin, 1984), is that those boys who engaged in a high level of work were less likely to be physically aggressive. This finding, while holding across the sample as a whole, does not appear within each of the four cultures, however.

15. A cultural pattern like the patrilineal complex can be no more than a proxy for certain behaviors that may amplify male tendencies to self-aggregate. These tendencies are potentially producible in many types of sociocultural systems.

Table 1

Sex Differences in Types of Aggression among Children in Four Cultures

| Type of aggression | Culture[a] | | | |
|---|---|---|---|---|
| | Black Carib | Logoli | Newars | Samoans |
| Assaulting | +[b] | +** | +*** | +* |
| Horseplay | + | - | +*** | + |
| Symbolic | + | + | +** | - |
| All aggression | +* | +* | +*** | +* |

[a]Within each culture, n = 24 boys and 24 girls.

[b]A "+" symbol indicates that boys' scores were higher than those of girls. A "-" symbol indicates that girls' scores were higher than those of boys.

*p < .10. **p < .05. ***p < .01.

Table 2

Age Differences in Aggression among Children in Four Cultures

| Culture[a] | Proportion of Interaction Involving Aggression: Younger Children[b] | Older Children | *t* value |
|---|---|---|---|
| Black Carib | .03 | .04 | -0.38 |
| Logoli | .13 | .06 | 2.86*** |
| Newars | .12 | .09 | 1.51* |
| Samoans | .08 | .05 | 2.18** |
| All cultures | .09 | .06 | 2.39** |

[a]Within each culture, *n* = 24 younger children and 24 older children.

[b]The category "younger children" includes 3- and 5-year olds. The category "older children" includes 7- and 9-year-olds.

*$p < .10$. **$p < .025$. ***$p < .005$.

Table 3

Numbers of Same-Sex and Opposite-Sex Peers Present During Aggressive and Other Social Acts

| | n[a] | Mean No. Same-Sex Peers Present | Mean No. Opposite-Sex Peers Present | Mean Bias Toward Same-Sex Peers | t-value |
|---|---|---|---|---|---|
| Boys | | | | | |
| Acts of physical aggression | 53 | 2.9 | 1.6 | 1.3 | 3.77** |
| Acts of symbolic aggression | 70 | 2.7 | 1.6 | 1.1 | 3.50** |
| Other social acts | 96 | 2.0 | 1.3 | .7 | 3.91** |
| Girls | | | | | |
| Acts of physical aggression | 42 | 2.1 | 1.9 | .2 | 0.51 |
| Acts of symbolic aggression | 60 | 2.0 | 1.3 | .7 | 3.07* |
| Other social acts | 96 | 1.9 | 1.3 | .6 | 4.77** |

[a]n represents the number of children (among 96) who exhibited each type of social act.

*p < .01. **p < .001.