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Social and Cognitive Aspects of the Development of Aggression in Infancy

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This article addresses theoretical and methodological problems in the study of aggression in infants and toddlers. It is argued that the occurrence of aggressive behavior in very young children must be considered against the background of their developing social competence. As a result, evidence for the infants' capacities to act with specific intentions and the infants' knowledge of the other as a distinctive individual having his own plans and goals are reviewed. Studies of early social interactions in humans are then examined with special emphasis on cognitive development and social cognition. Finally, the problem of dominance in very young children's groups is considered.

Key words: aggression, infancy, social competence, cognition, intentionality

INTRODUCTION

While research on peer relations among preschoolers is burgeonning, empirical data and theoretical work on very early human peer relations and more specifically on aggression is still rare. Social interaction in young animals has been well documented, but the data are hardly relevant to human infants' social behavior because young animals usually exhibit motoric and social capacities more readily comparable with those of human preschoolers. It is largely because of the paucity of information that Maccoby [1980] considered that "aggression begins to be an issue only in the third and fourth year." This situation can probably be best explained by two factors.

First, historically, studies of social interactions in humans have concentrated more on preschool children than on infants mostly because of the observation facilities available in day care centers. The second factor is the difficulty of defining and interpreting such behavior. As a result, this article addresses theoretical and methodological problems in the study of aggression in infants and toddlers.

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With many authors [Feshbach, 1970; Hinde, 1974; Kagan, 1974] we may define aggression as behavior directed towards causing physical injury to another individual. However, many have pointed out that this definition cannot be easily operationalized and requires a distinction, not always easy, between acts that accidentally lead to injury and acts that are intentional. This distinction proves to be crucial when we address the specific question of aggression in infants.

In addition, because pure attack is rare and aggression is usually associated with elements of withdrawal, ethologists would prefer to speak of agonistic behavior. Scott and Fredericson introduced the term in 1951 to refer to any activity related to fighting, whether aggression (ie, attack, threat) or conciliation (ie, fleeing or submissive behavior). The term agonism, although also loosely defined, has the advantage of pointing to the close physiological relation between aggressive and submissive behavior [Scott and Fredericson, 1951]. For our present concern, threat behavior is especially relevant, for it implies intentionality, ie, a distinction between goals and means [Piaget, 1952].

As stressed by Harding [1983], if one wants to interpret a behavior as socially directed, the assumption must be made that an individual is attempting to affect another intentionally—that is, in the case of aggression, to harm intentionally. In order to examine developmental changes in agonistic behavior, it is necessary to make inferences about whether or not the actor is acting with intention. It is thus crucial to differentiate the actual effects of the infant's behavior from the intended effects.

Harding [1983], raises three major difficulties in studying interactions involving prelanguage infants:

1. Although nonverbal communication is well documented in infancy there is no conventional communication code in young children's interchanges to interpret, although some have suggested that such a code exists [Strayer and Strayer, 1978; Montagner, 1978];
2. The infant cannot corroborate our interpretation;
3. It is difficult to specify criteria for the competence of infants to intend to communicate.

Because of these methodological difficulties, we cannot limit ourselves to observable effects of behavior. In other words, the observation of a two-year-old child taking away a toy from a peer without any precautions should not immediately lead us to conclude this is an aggressive act. Presumably, for that reason Blurton-Jones (1972) found that his measures of "readiness to behave aggressively" did not correlate with the amount of taking.

The second problem to be raised here concerns the cognitive level of the child when acting with aggression, ie, the capacities of the infant really to comprehend the nature of the other and the other's goals and plans [eg, Bowlby, 1969]. Piaget [1952] and Ruth Nielsen [1951] claimed that a child cannot fully understand the actual point of view of the other, at least at more than a very crude level, before the preschool years. Bowlby [1969] and Ainsworth [1973] also placed the period of goal-corrected partnership with mother at around three years of age. However, Dunn and Kendrick [1982] have recently challenged these views in observing that before 3 years, children could already anticipate and respond to the feelings of their baby siblings. Dunn and Munn [1985] have further documented in 14-month-old infants some instances of "pragmatic understanding" of what will upset their older sibling.

The question of whether young children have an intention to hurt remains to be discussed. According to Kagan [1974], if aggression is defined as behavior directed toward causing physical injury to another individual, this infers that a child cannot be aggressive until he has some "psychic intuition" of injuring. Psychic intuition is very loosely defined and we may substitute the concept of intention [Harding, 1983]. Kagan goes on to state that the most predominant agonistic behaviors exhibited by 18–28-month-old children are pushing, striking, and seizing another's property. In his view, pushing without any threat occurs simply as the "desire to make an effect upon the world, to test his own competence."

This last interpretation is shared by Smith [1974] for whom "some aggressive behaviour did not have (such) an obvious motivation and may have been exploratory in nature (such as pulling hair to see what happens)." Furthermore, Blurton-Jones [1972] finds it "arguable that even though snatching things evokes crying or attack, its motivation is not always aggressive." For him, it may suggest a lack of response to these reactions, but "it need not indicate an aggressive response in the sense of a tendency to hit or use other physical violence."

These conclusions are corroborated somewhat by Gauthier and Jacques [1985] in a study of the ontogenesis of dominance and affiliation in preschool children. Their results showed that only 6.7% of social encounters of 6–21-month-old infants were of an agonistic nature, whereas this proportion was 8.2% for 2–3-year-old children. These proportions are quite small compared to 54.4% and 57.7% respectively for affiliative behavior. However, the more striking result was that, of these very small proportions, 9.4% was used in threat behavior for the 2- and 3-year-old group while none of the time was spent in such behavior in the 6–21-month-old group. This last result seems to be a fairly good indication of the lack of intention in agonistic behavior in very young children

The questions of the infants' capacities to act with specific intentions and the infants' knowledge of the other as a distinctive individual having his own plans and goals indicate that agonistic behavior cannot be isolated from the rest of infants' behavioral organization. However, as stated by Kalverboer [1974], "as long as there is no agreement about the definition and the operationalization of aggression, discussion about its origins is fruitless." Kalverboer goes on to state that questions concerning the origins of aggression lead to the very roots of the child's social development [see also Parke and Slaby, 1983]. The occurrence of aggressive behavior in young children must thus be considered against the background of their developing social competence. Parke and Slaby [1983] suggest that the precursors of the social regulation of aggressive interchanges are most likely to be observed in the very first peer interactions, namely infant–infant interchanges.

We will thus turn now to studies of social interactions and examine the few empirical data on aggressive behavior to be found in the literature, laying emphasis on their relation to cognitive development and social cognition.

From an overall impression of the literature on early peer interactions, infants can be portrayed as basically nonaggressive [Lewis et al, 1975]. Several authors have reported a low incidence of agonistic encounters. Hay and Ross [1982] observed 5.7% of the time spent in conflicts; Rubinstein and Howes [1976] only a marginal 3%; Brownlee and Bakeman [1981] 13 hard hittings in 20 hours of observation; and Vinzce [1971] and Dubon et al [1981] reported virtually none. Yet some discrepant

results can be found. Holmberg [1977] and Maudry and Nekula [1939] considered 50% of toddlers' social interchanges as being "disruptive" and Bronson [1975] reports quite a high incidence of agonistic encounters, though cautioning against interpreting them as hostile behavior.

However, these latter results should be analyzed concurrently with some other features of infant–peer interchanges. Hartup [1983] notes that, on meeting, interactive elements seem to emerge in a more or less invariant order: infants look at, reach, and touch each other. Several investigators have noted that infant peer encounters often seemed serious in tone, impersonally motivated and directed towards toys with limited attention to peers [Maudly and Nekula, 1939; Rubinstein and Howes, 1976; Mueller and Brenner, 1977]. These descriptions are consistent with observations made on infants' exploration of inanimate objects [Hutt, 1970]. Kavanaugh and McCall [1983] hypothesize that toddlers, in effect, are exploring contingencies in encounters with peers and that they are "in the process of determining what action will get a reaction from a playmate" (p 50).

During the second year of life, infants tend to show more gross motor activity in exploration of their environment. They use more and more banging, pushing, pulling, or throwing as part of their exploratory repertoire. Thus, some hitting seen in the interaction of children in their second year could be interpreted as a kind of exploratory behavior [Smith, 1974].

Several authors have described infants and toddlers as initially aware only of the toy, ignoring the presence of other children. Eckerman and Wathley [1979] argue that a person's contacting a toy increases its attractiveness. Hutt [1970] has shown that exploratory behavior is increased by the object's capacities to give feedback (ie, movement, noise, or light). An inanimate object could thus become more interesting if manipulated by another child. To gain access to play material, infants or toddlers are often forced to take turns with one another [Damon, 1983]. Thus, the somewhat accidental peer interactions established by object contact generate a social experience that helps the child to develop more advanced ways of interacting with peers. This is supported by Mueller and colleagues [Mueller and Lucas, 1975; Mueller and Brenner, 1975] who have argued that manipulative play with inanimate objects is the predominant activity during peer play sessions.

Recently, some investigators have challenged this view. Vandell et al [1980] found that "socially directed behaviour (SDB)" was the most frequent pattern observed in their 6–12-month-old subjects. Becker [1977] observed that 40.8% of behavior towards a peer was stimulated by prior behavior from the peer and concluded that infants seem to respond to one another's behavior. Finally, Hay and Ross [1982] found that the probability of yielding in toddlers' conflict is influenced by the content of the peer's action preceding it. According to these authors, such findings suggest that toddlers' actions within conflicts are not chosen randomly. Finally, Dunn and Kendrick [1982] presented evidence of young children adjusting their speech to an infant sibling [see also Shatz and Gelman, 1973]. Hartup [1983] argues that "social interest in infants is evident but the skills necessary for sustained social interaction are not." Findings by Vandell et al [1980] are consistent with this statement. They observed that most infant–peer sequences were brief two-unit exchanges. However, descriptions by Dunn and Kendrick [1982] suggest that these skills could be already well developed at least between siblings, ie, between children having a close emotional relationship. However, evidence for the presence at various ages of the neces-

sary knowledge to be social and therefore aggressive is still scarce and studies addressing this topic are needed.

Another distinction necessary here is that between anger and aggression. Anger refers to an affective display. As Feshbach [1970] outlined it, this display has a role of communicating the organisms's frustration and threat to potential adversaries. Goodenough, in a pioneering work [1931], described anger in great detail and noted that most of the outbursts of very young children were undirected tantrums, while after the age of three most outbursts were retaliatory acts for behavior from someone else. This developmental shift could be seen as evidence for capacity to control aggression starting somewhere near the end of the second year of life.

If anger is an affective display showing frustration, then we could argue with Bridges that anger is one of the first emotions present in newborns since frustration is one of the primary negative experiences of life [Spitz, 1965]. However, anger as a display of threat to potential adversaries [Feshbach, 1970] should come later on and as a result of the recognition of the potential adversary itself.

As can be seen, there are still many problems of definition to be solved. Ethological works have often chosen to define aggression in terms of precedence, status settling or, of particular interest here, access to some object or space. However, as Hinde [1974] argues, all behavior that results in access to some interesting element of the milieu is not necessarily to be labeled aggressive behavior. Assertiveness, for one, the legitimate expression of one's interest, can be shown through politeness or diplomacy.

This leads to a last theoretical point that concerns the interpretation of one of the immediate consequences of aggression, namely dominance. This is of specific interest here for dominance often appears to be an aspect of effectiveness with peers. Dominance is usually seen as a relationship. It is thus arguable that dominance structure in a group implies some social perception of others and social expectation of specific responses to one's own behavior. With this perspective, studies of social dominance have examined forms of social exchange and described how patterns of behavior are coordinated between two individuals as they participate in social interaction [Strayer, 1980]. Such emphasis upon the interactive context may eventually reveal features of social skills and of social intention. Many studies [Missakian, 1980; Strayer, 1980, 1981] have described a linear dominance structure in stable preschool groups. Likewise, Gauthier and Jacques [1985], exploring the social organization of groups of children from one- to 5-years old, observed linear dominance structures in all these groups. However, agonistic encounters were observed in 94% of all possible dyads in the 1-year-old group, whereas they were observed in 34% of all dyads in the 5-year old group. On the other hand, concurrent measures of affiliative behavior failed to show social reciprocity among children under 2 years of age. The authors believe these results to demonstrate the development of social identity through peer relationships. Identification of social complementary roles, they argue, is actively sought by the infants with as many peers as possible, but their identification requires fewer interactions in 5-year old children. Linear dominance structure appears first because the immediate consequence of agonistic encounters is more conspicuous than the consequences of affiliative interactions. However, these results should be interpreted against the background of the method used by Gauthier and Jacques. Their sample consisted of five groups—one per age level—of different size: 9, 9, 13, 15, and 19 children, respectively. The probability to interact with all possible peers was

therefore higher in infants (n=9) and toddlers (n=9) than in the 5-year olds (n=19). Carefully designed studies are still needed to trace more accurately the development of dominance in particular and of social competence in general in infants. Questions such as the following need to be answered before we have an adequate picture of infants' social competence: When does dominance start to be an issue in infants' groups? How rigid is the linear structure in the very young? How does competition and aggression interact with cohesive behavior? How can infants' social status be measured precisely?

To conclude, we may say that very little is known about the ontogenesis of aggression in humans. Already, a large corpus of data on preschool children has been gathered, but very little is known about infants' agonistic behavior. Many problems of definition are yet to be solved and carefully designed developmental studies are needed to track down the ontogenesis of agonistic behavior. The most promising course, it appears, is to relate the development of aggression to the ontogenesis of social competence and communication; ie, the mutual understanding and agreement about what an act means [Richards, 1974].

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