

Do Girls Manipulate and Boys Fight? Developmental Trends in Regard to Direct and Indirect Aggression

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Gender differences in regard to aggressive behaviour were investigated in a series of studies of schoolchildren of different age cohorts: 8-year-olds ($N = 85$), 11-year-olds ($N = 167$), and 15-year-olds ($N = 127$). Different types of aggressive behaviour were measured with peer nomination techniques, supported by self-ratings. The social structure of the peer groups were also studied. The results of the 11-year-old cohort were previously presented by Lagerspetz et al. [1988; *Aggressive Behavior* 14:403–414], but they are compared here with the other age groups. The principal finding was that girls of the two older cohorts overall make greater use of indirect means of aggression, whereas boys tend to employ direct means. Previously, the main difference between the genders has been thought to be that boys use physical aggressive strategies, while girls prefer verbal ones. Our studies suggest that the differentiation between direct and indirect strategies of aggression presents a more exact picture. Indirect aggressive strategies were not yet fully developed among the 8-year-old girls, but they were already prominent among the 11-year-old girls. Aggressive behaviour was assessed overall by the children themselves to be the highest in this age group.

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Key words: direct and indirect aggression, development, gender differences

INTRODUCTION

It has often been suggested that males are more aggressive than females and that the type of aggressive behaviour displayed by the two genders differs as well. Males supposedly use physical means to a greater extent than females, while the latter preferably use verbal means [e.g., Maccoby and Jacklin, 1974; Frodi et al., 1977]. The meta-analysis by Eagly and Steffen [1986] casts doubt on the truthfulness of this popular notion. Differences between the genders were not found to be as obvious as generally

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believed. While men indeed were more ready to inflict physical pain on others, women were not less aggressive if the readiness to inflict mental pain was considered.

In a previous study [Lagerspetz, et al., 1988], it was suggested that the utilization of verbal aggressive strategies is perhaps not the most typical feature of female aggressive behaviour. Direct verbal aggression was displayed equally much by both genders, at least in the particular age group studied (11-year-olds). Instead, it was found that while boys used *direct* means of aggression (physical as well as verbal), girls used typically *indirect* means, such as backbiting and manipulation of the social structure of the class, in order to inflict mental pain on their enemies. Indirect aggression is a type of behaviour in which the perpetrator attempts to inflict pain in such a manner that he or she makes it seem as though there has been no intention to hurt at all. Accordingly, he or she is more likely to avoid counteraggression and, if possible, to remain unidentified. A way to obtain this objective is to use others as vehicles for inflicting pain (mental or physical) on a target person.

Lagerspetz et al. [1988] conducted a factor analysis on all items measuring aggressive behavior. Indirect aggression emerged as a clear separated factor. Almost all items with strong loadings on this factor described some kind of social manipulation; that is, using others as means for attack instead of attacking oneself, or otherwise manipulating the social network of the class, in order to exclude the target person from friendship groups. Indirect aggression was conceptualized accordingly, in the present study. Social manipulation is not possible unless the social structure facilitates such methods. In the previously mentioned study [Lagerspetz et al., Peltonen, 1988], the friendship patterns of the two genders differed considerably: the boys formed rather loose groups, while the girls formed tighter groups, or *cliques*. The girls very often had one close best friend. If friendship ties are close and important, they are likely to facilitate indirect aggression towards third persons.

The fact that girls use indirect rather than direct means of aggression might serve to explain why aggressive behaviour has generally been found to be a much less stable phenomenon among girls than among boys, a finding that has puzzled researchers [e.g., Huesmann et al., 1984; Huesmann and Eron, 1986]. Questionnaires on aggression (based on self-ratings as well as on peer nominations) tend to include, almost exclusively, items on direct (verbal and physical) aggression. Indirect aggression has largely been neglected. Lagerspetz et al. [1988] also found that, while the correlation between self-rated and peer-nominated *direct* aggression was very high for the boys (who displayed much of it), the correlation between self-rated and peer-nominated *indirect* aggression was low for both genders. Apparently, if one uses indirect means, it is easy not to "admit," or perhaps even to recognize, that one's own actions are actually aggressive. For instance, slander may be rationalized as "telling the truth" about the person in question.

Indirect aggression is obviously dependent on maturation: a certain level of both verbal and social skills is needed. Since girls develop, at least verbally, quicker than boys [Maccoby and Jacklin, 1974], it is possible that they develop indirect aggressive strategies earlier than boys; however, the latter perhaps "catch up" later in life. By contrast, it is also possible that, even among adults, females use more indirect means of aggression than do males. Overall, developmentally speaking, one should expect a change and replacement over age from gross to more refined aggressive strategies. Young children, who lack verbal skills, are likely to use physical aggression preferably, such as hitting, pushing, kicking, and shoving; when their verbal abilities develop, they will

TABLE I. The 8-Year-Old Cohort: Ratings on Behaviour When Angry†

Variables	Girls		Boys		<i>t</i> -value	<i>P</i>
	Mean	SD	Mean	SD		
Tells teacher	.51	.49	.46	.35	.50	NS*
Goes away	.48	.39	.34	.29	1.97	<.052
Kicks/strikes	.15	.23	.61	.55	4.75	<.0001
Gossips	.39	.37	.32	.31	.91	NS*
Profanity	.09	.14	.30	.39	3.30	<.002
Sulks	.33	.34	.19	.24	2.35	<.05
Chases	.78	.15	.48	.46	5.25	<.0001
Says: "I'm not your friend."	.34	.38	.28	.26	.80	NS*
Shower abuse	.16	.22	.48	.49	3.80	<.0001
Becomes friendly with someone else as revenge	.34	.27	.22	.23	2.14	<.05
Pushes/shoves	.21	.36	.35	.39	1.70	NS*
Suggests shunning of the other	.35	.26	.32	.40	.35	NS*

†Means, standard deviation, *t*-values, and significance of the differences between groups.

*NS, not significant.

add direct verbal aggression, such as abusing and accusing, shouting and calling names, to their repertoire. The development of social skills gives the possibility of developing a third stage of aggressive strategies, indirect aggression, using the social network as a means of bringing harm to the target of one's aggression.

Accordingly, one should expect indirect aggression to be the most prevalent form of aggression among social groups of adults of both sexes. (Domestic violence is obviously a special case, which needs to be treated separately.) Also during adult life, however, females are perhaps more likely than males to rely on indirect aggressive strategies. In a study by Leymann and Tallgren [1989] on aggressive behaviour at the workplace, females were found to backbite and gossip about their enemies more than occurs among males.

Our research group decided to undertake the enterprise of investigating the development of indirect aggressive strategies in both sexes. Studies were conducted with schoolchildren of different age groups as subjects. Results from two age groups, 8 and 15 years, are presented and compared with the results of the 11-year-old age group, presented by Lagerspetz et al. [1988]. The research methods are similar for all three age groups.

METHOD

Study 1: 8-Year-Old Age Group

Subjects. This group consisted of 45 girls and 40 boys from three schools in Turku (a city with 168,000 inhabitants). The children were attending the second grade, as children start school at the age of 7 in Finland.

Measurements of aggressive behaviour. The rationale was exactly the same as described by Lagerspetz et al. [1988]: peer nomination of all other children of the same sex in the class and, in addition, self-ratings of one's own behaviour. The children were presented a picture of all the children in the class and asked about each child: "What does he/she do when angry with another boy/girl in the class?" (It might be argued that it is not necessary to be angry in order to act aggressively; this is true. However, if the question had been phrased: "Does he/she behave like this often?",

TABLE II. The 8-Year-Old Cohort: Result of a Three-Factor Solution (Maximum Likelihood Orthogonal Rotation) for Means of Aggression*

Variables	Factor I (Direct means)	Factor II (Indirect means)	Factor III (Withdrawal)
Tells teacher	—	—	.444
Goes away	—	—	.710
Kicks/strikes	.923	—	—
Gossips	—	.740	—
Profanity	.820	—	—
Sulks	—	—	.793
Chases	.754	—	—
Says: "I'm not your friend."	—	.525	—
Shower abuse	.780	—	—
Becomes friendly with someone else as revenge	—	.588	—
Pushes/shoves	.777	—	—
Suggests shunning of the other	—	.809	—

Factor	Eigenvalue	Percentage of variation explained	Cumulative percentage
I	4.463	37.2	37.2
II	2.501	20.8	58.0
III	0.850	7.1	65.1

*Only loadings high than .40 are presented.

nonaggressive, playful behavior may have been included and distorted the data.) The children were presented with a number of items describing different types of behaviour, aggressive and other, and asked to assess on a four-point scale to what degree each child displayed that particular type of behaviour (0 = not at all, 1 = a little, 2 = fairly much, 3 = very much). In order to facilitate the young children's capacity to grasp the difference between the degrees correctly, they were simultaneously presented with circles of different sizes, corresponding to each number or point at the scale.

Eight items were exactly the same as presented to the 11-year-old children in the Lagerspetz et al. [1988] study. These items were also presented to the 15-year-old age group of the present study (see Fig. 3a–h). Three other items were included, which were thought to represent age-specific behaviour. All items presented to this age cohort are presented in Table I.

Measurement of the social structure of the class. The social network of the class was assessed with an advanced form of sociometry adapted from Cairns et al. [1985], according to which each child rated the social relationships of all other pupils in the class. The subjects gave answers to the following questions: (1) Who in your class are friends? Mention groups or pairs. (2) Are there pupils in the class who do not belong to any group or pair? What are their names? (3) Do you have good friends in the class? If so, who are they? A child was assessed as belonging to a specific category (group, pair, or loner) if 30% (including the ratings of the child itself) of the peers rated him or her as such. The method was identical to that used by Lagerspetz et al. [1988].

Procedure. The ratings were made in the form of individual interviews, since group testing with questionnaires was considered too difficult for this specific age group. The

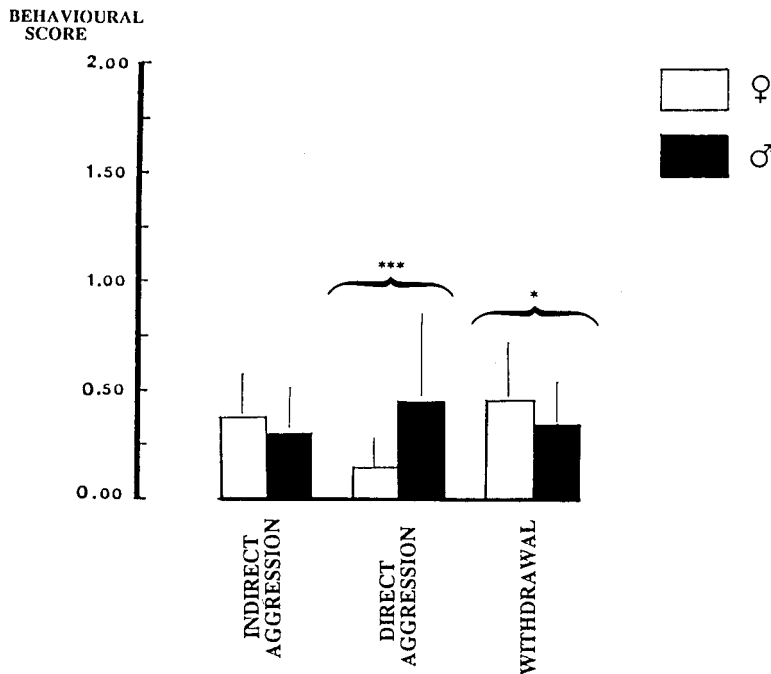


Fig. 1. Gender differences in three types of conflict behaviour within the 8-year-old cohort ($N = 85$).

interviews, which were conducted in the school during school hours, but in a room adjacent to the classroom, lasted 20–30 min each.

Study 2: 15-Year-Old Age Group

Subjects. The subjects were 64 boys and 63 girls, from the ninth grade of the same three schools as in the 8-year-old cohort.

Measurement of aggressive behaviour. The method was identical to that used for the two younger cohorts. The items used with this cohort were 34 in number, 23 of which proved to have discriminative value between the genders (see Table III). Eight of the items were identical to those used with the other cohorts (see Fig. 3a–h).

Procedure. The questionnaires were filled in during a normal school lesson. No interviews were conducted, as the case was with the younger cohort, as the questionnaires were considered clear enough to be understood by this age group. Otherwise, the procedure was identical.

RESULTS

8-Year-Old Cohort

Table I compares the boys and the girls of this cohort on each item included in the peer ratings of behaviour displayed when angry. As can be seen, the boys scored significantly higher on three items, all obviously related to direct aggression (two of the verbal type: *profanity* and *shows abuse*, and *kicks/strikes* representing physical aggression). The girls also scored significantly higher on three items, but they seemed to be equally

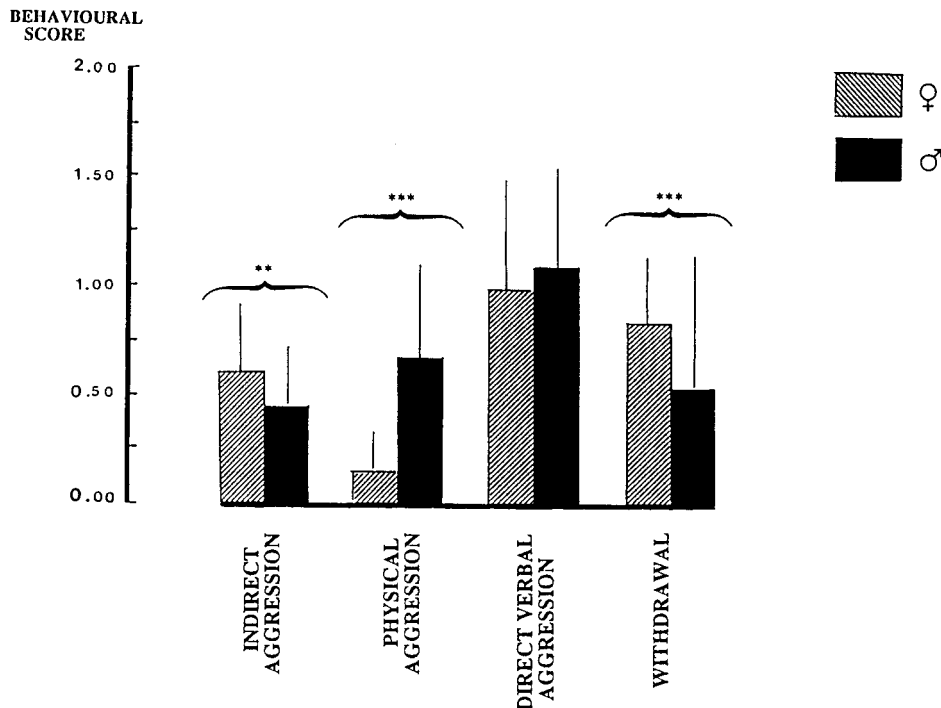


Fig. 2. Gender differences in four types of conflict behaviour within the 15-year-old cohort ($N = 127$).

much related to withdrawal (*goes away*) as to indirect aggression (*becomes friendly with someone else as revenge*). *Chases*, again, perhaps represents a type of girlish physical aggression.

Exploratory factor analyses were conducted to find out how the items grouped together. The results of a three-factor solution are presented in Table II. Factor I represents items connected with direct aggression, physical as well as verbal. By contrast, items having high loadings on factor II seem to represent typically indirect aggressive behaviour. Finally, factor III represents items connected with withdrawal from the conflict situation. On the basis of factor analysis, three summed variables were constructed: (1) *direct aggression*, based on the five items of factor I (Cronbach's $\alpha = .89$); (2) *indirect aggression*, based on the four items of factor II ($\alpha = .75$); and (3) *withdrawal*, based on factor III ($\alpha = .53$; very low, but based on only three items).

Figure 1 compares the male and female sample on the summed variables. As can be seen, there was a highly significant difference between the genders on direct aggression, the boys displaying much more of it. The girls, on the other hand, scored slightly higher on *withdrawal*. On *indirect aggression*, however, there was only a slight (insignificant) difference, the girls scoring somewhat higher.

Social network. When asked about the friendship patterns, no significant differences were found between the genders, in contrast to the 11-year-old cohort, described by Lagerspetz et al. [1988], in which the boys formed bigger and looser groups. Twenty-three percent of the pupils were rated as belonging to pairs, 15% were rated as members of three-person groups, and 8% were rated as members of groups consisting of

TABLE III. Gender Differences in Aggressive Behaviour in 15-Year-Old Schoolchildren: Results of a Stepwise Discriminant Analysis*

Variable	Discriminant function coefficients
1. Trying to irritate the other so as to cause a loss of temper	.969
2. Trying to make the other look stupid	.966
3. Backbiting (gossiping)	.956
4. Spreading vicious rumours as revenge	.893
5. Attempting to defame the other over a long period	.852
6. Gathering other friends to one's side	.699
7. Showering abuse	.672
8. Withdrawing from the situation	.605
9. Name-calling	.605
10. Attempting to make the other jealous	.508
11. Taking things from the other	.422
12. Attempting to seek revenge in games	.420
13. Being slow to anger	.412
14. Telling others not to associate with that person	.401
15. Dropping the matter entirely	.388
16. Attempting to make the other envious	.342
17. Remarking on the person's appearance	.332
18. Telling others about the matter	.317
19. Refraining from the display of anger	.287
20. Talking the matter over	.281
21. Kicking or striking	.274
22. Profanity	.237
23. Tripping	.187

*A high coefficient indicates a type of behaviour typical of girls, while a low coefficient indicates a type of behaviour typical of boys.

TABLE IV. Classification Results of the Discriminant Analysis Displayed in Table III†

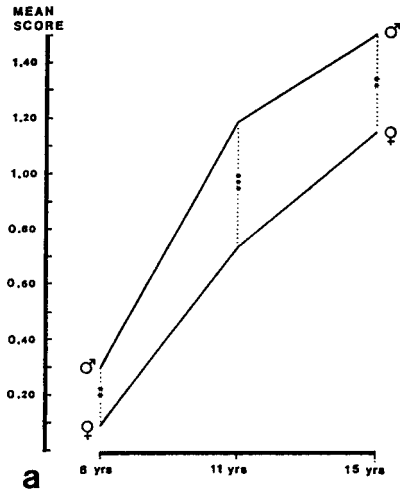
Actual group	No. of cases	Predicted group membership			
		Boy		Girl	
		N	%	N	%
Boy	74	73	98.6	1	1.4
Girl	73	1	1.4	98.6	

†Percentage of "grouped" cases correctly classified, 98.64; Eigenvalue, 6.184; Wilk's λ , 0.139; χ^2 , 263.35; $P < .0001$.

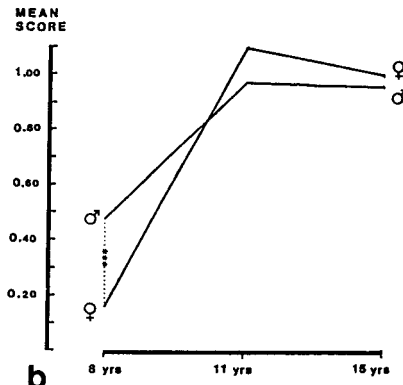
TABLE V. Numbers of Pupils of Both Sexes, Within the 15-Year-Old Cohort, Estimated by at least 30% of Peers as Members of Friendship Groups of Different Sizes†

Group size	Boys		Girls	
	%	N	%	N
Alone	40	29	20	15
In a group of two	16	12	49	36
In a group of three	16	12	12	9
In a group of four or more	27	20	19	14

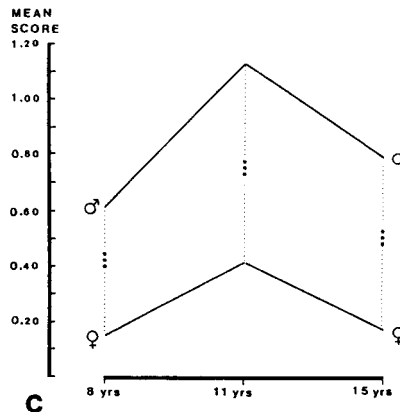
† $\chi^2(3) = 17.94; P < 0.001$.



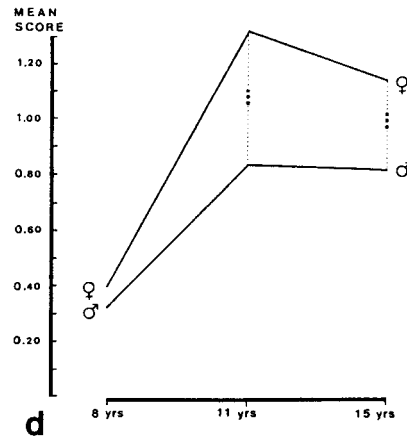
PROFANITY



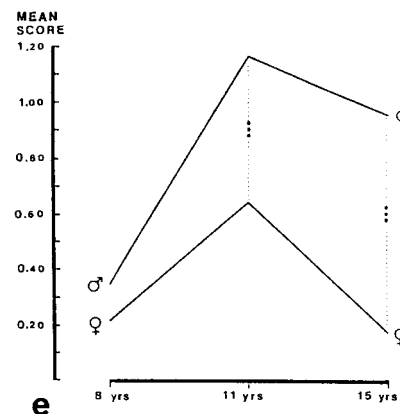
SHOWERING ABUSE



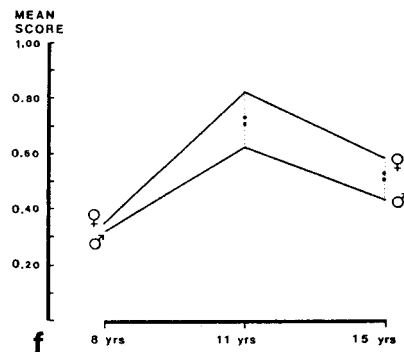
KICKING AND STRIKING



GOSSIPING



PUSHING AND SHOVING



SUGGESTING SHUNNING OF THE OTHER

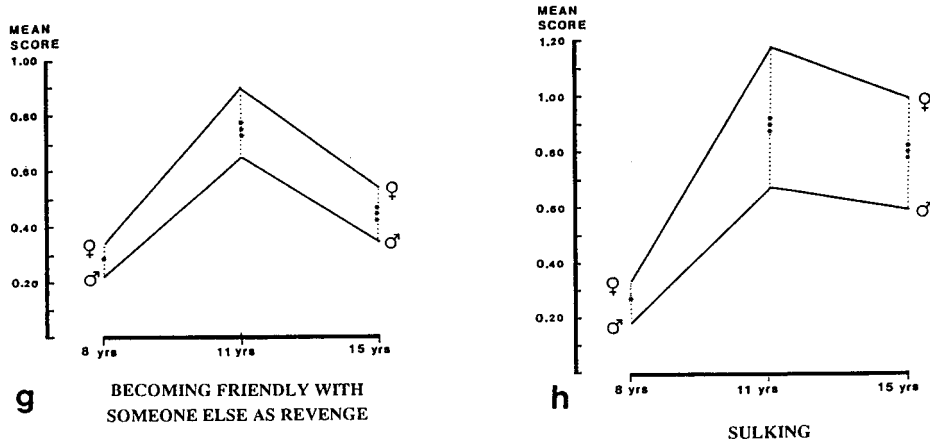


Fig. 3. Developmental trends in regard to different types of conflict behaviour. a. Profanity. b. Showering abuse. c. Kicking and striking. d. Gossiping. e. Pushing and shoving. f. Suggesting shunning of the other. g. Becoming friendly with someone else as revenge. h. Sulking.

four persons or more. The rest (54%) were not rated (by at least 30% of the pupils) as members of any group.

15-Year-Old Cohort

Exploratory factor analyses were conducted in order to determine how the 4 items grouped together. On the basis of the analyses, it was considered most reasonable to group 18 of these items together into four summed variables instead of three, as was the case with the 8-year-old cohort and the 11-year-old cohort of Lagerspetz et al. [1988]. The summed variables were as follows:

Indirect aggression ($\alpha = .84$): Consisted of the items *gossiping, suggesting shunning of the other, spreading vicious rumours as revenge, breaking contact with the person in question, and becoming friend with someone else as revenge.*

Direct physical aggression ($\alpha = .86$): Consisted of the following items: *tripping, taking things from the other, kicking and striking, taking revenge in games, and pushing and shoving.*

Direct verbal aggression ($\alpha = .89$): Consisted of the items *name-calling, profanity, trying to make the other look stupid, showering abuse, and arguing.*

Withdrawal ($\alpha = .88$): Consisted of the following items: *sulking, withdrawing from the situation, and pretending not to know the person.*

The two genders were compared on basis of the summed variables. The results are presented in Figure 2. As shown, the boys scored significantly higher on *physical aggression*, while the girls scored higher on *indirect aggression* and *withdrawal*. On *direct verbal aggression*, there was no significant difference between the sexes.

A stepwise discriminant analysis was conducted on all individual peer-rated items, in an effort to find out which of them discriminated the best between the genders. The

result is presented in Table III, giving the discriminant function coefficients for the variables left in the solution. A high coefficient indicates a type of behaviour typical for the females, while a low coefficient indicates behaviour typical for males. As can be seen, items representing indirect aggression do indeed obtain overall high coefficients, while typically physical means of aggression receive low coefficients.

Social network. The girls stayed together in pairs significantly more than the boys did (Table V). More pupils were mentioned as outsiders than in the 11-year-old cohort of Lagerspetz et al. [1988]. In this cohort, a few friendship groups including members of both sexes existed, which was not the case in the younger cohorts.

Comparison of the three age cohorts: 8, 11, and 15 years. Eight items were identical for all three age cohorts: the two cohorts mentioned in the present study and the one of the Lagerspetz et al. [1988] study. It made comparisons between the age groups possible. The results are presented in Figure 3a–h.

The results reveal typical age trends in the development of aggressive behaviour. Physical aggression seems to be more general among the boys during all age groups. Indirect aggression, however, appears more frequently among the girls but is not fully developed yet at the age of 8. At ages 11 and 15, it is clearly more prevalent among girls. Direct verbal aggression (as a summed variable) appeared equally frequently among the genders at the age 15 (see Fig. 2). Figure 3a and 3b (*profanity* and *showering abuse*) reveal that the boys of some cohorts displayed certain kinds of direct verbal aggression more frequently than did the girls. Again, withdrawal seems to be a kind of behaviour more typical for girls of all age groups.

DISCUSSION

The results of the two studies presented here, in combination with the study of the 11-year-old cohort presented by Lagerspetz et al. [1988], suggest that the gender difference regarding the utilization of direct and indirect methods of aggression is a definite phenomenon, at least during adolescence. The studies also suggest that the usage of indirect methods is dependent on maturation and on the existence of a social network that facilitates the usage of such means for inflicting pain on one's enemy. At age 8, the structure of the boys' and the girls' groups in the classes did not differ significantly. During ages 11 and 15, they did, the girls forming tighter groups and developing more "pairs". This fact facilitates the use of manipulation of friendship patterns as an aggressive strategy. Girls are also known to mature faster verbally than boys do, which probably in its own way facilitates the usage of indirect means of aggression by increasing the verbal skills needed for the manipulations in question.

Aggressive behaviour has its highest "peak" at age 11, among these three cohorts. This trend is more clearly seen among the girls than among boys, but it seems to be the case for most of the aggressive behaviours investigated (except for profanity, which is not even a true aggressive behaviour). A possible interpretation is that, during puberty, the interest of the adolescents turns toward other matters, such as dating; the focus is less on the social structure and the hierarchy of the class than before.

A matter for future study is the question of whether boys later catch up, and begin to imply indirect means of aggression as much as girls do. Alternatively, are back-biting, gossiping, and manipulative means still more typically female strategies during adult life?

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