



and is supposed to be the best way to provide the perpetrator's anonymity and to minimize possible retaliation [Bjorkqvist et al., 1992a]. This behavior is not easily observed, and hence the necessary information may be collected mainly by means of interviews and questionnaires. Similar phenomena were also described under the title "social aggression" or "relational aggression" [Galen and Underwood, 1997; Crick, 1996]. However, social and relational aggression may be accompanied by certain direct forms of non-physical aggression such as negative facial expressions in the case of social aggression, or excluding peers from the group in the case of relational aggression [Crick, 1996; Underwood et al., 2001]. Data collected in different countries (Finland, Israel, Italy, Poland) provide similar information attesting to a higher rate of peer-estimated indirect aggression in females than in males [Bjorkqvist, 1992; Bjorkqvist et al., 2001; Osterman et al., 1998]. Owens [1996] and Owens et al. [2000] came to the same conclusions based on Australian data, although in this case self-estimation was used. A higher rate of indirect aggression in females was demonstrated by cultural anthropologists in Zapotec Indians, Mexico, and in Argentina [Fry, 1992, 1998]. The North American study also suggests that relational aggression was more typical of young girls than of boys [Crick and Grotpeter, 1995; Crick, 1996]. Some researchers, however, found no gender differences in the rate of indirect aggression among children, adolescents, or adults [Richardson and Green, 1999; Rays and Bear, 1997; Walker et al., 2000]. In fact, one study even revealed a higher rate of indirect aggression in adolescent males than in females [Linderman et al., 1997].

It is now generally assumed that cultural patterns play an important role in the expression of aggression in both sexes. In most cultures, females are less physically aggressive and less inclined to conflict with others directly than males [Crook, 1992; LaFreniere, 2002; Fry, 1998]. Debates around gender differences in indirect aggression are ongoing. New data from other cultures are needed before definite conclusions can be reached.

New views of aggression have stimulated research into aggression and victimization at school. Children and adolescents spend most of their daytime at school, which sometimes provides a less than friendly social milieu. For example, according to Whitney and Smith [1993], as many as 27% of children of both sexes in the UK reported being bullied at least sometimes. Although the level of bullying varied from one British primary school to

another, it was nowhere less than 19%. Bullying is intrinsically collective and pupils frequently encourage others to act aggressively toward the victim, either actively or passively [Pikas, 1975; Lagerspetz et al., 1982]. Sutton and Smith [1999] have suggested that for a better understanding of bullying as a group process, several major roles should be explored under the same study: the bully, the reinforcer, the assistant, the defender, the outsider, and the victim.

Whether aggressive children are popular with peers and like to go to school remains unclear. Some authors suggested that male bullies were popular with peers in early adolescence, but became feared and disliked during late adolescence [Olweus, 1991]. At present, most researchers working with children and adolescents agree that aggression and bullying are practiced by both genders [Bjorkqvist et al., 2001; Butovskaya, 2001; Butovskaya and Kozintsev, 1999a; Osterman et al., 1998; Sutton and Smith, 1999]. Most children are involved in various forms of direct and indirect aggression during their school years and must acquire social skills necessary for conflict resolution and conflict avoidance [Butovskaya et al., 2000].

Girls are frequently said to be more socially competent than boys at all ages, but does this mean that they are more prosocial? Indeed, social skills may be used for hostile purposes. Bjorkqvist et al. [1992a] demonstrated that older schoolchildren use more indirect aggression than younger ones, and thus social intelligence correlates with indirect aggression after the age of 12. The period between 11 and 15 years is marked by rapid physiological and mental development. At this time, adolescents acquire major social skills and competence in social interactions with peers, which are critical for social success in adulthood.

Striking gender differences in attitudes toward third-party intervention were found in many cultures [Cowie, 2000; Cunningham et al., 1998; Hay et al., 1992; Osterman et al., 1997]. Boys are generally less involved in conflict resolution interventions than girls.

In Russian culture, as in most European cultures, gender roles have been traditionally different: females are more sociable and agreeable, whereas males are more dominant and self-confident [Butovskaya and Kozintsev, 1999a, b; Butovskaya and Demianovitch, 2002; Ember, 1981; Whiting and Edwards, 1988]. These differences are still evident in modern Russian society even though gender inequality has decreased with regard to prospects for education, job acquisition, and social success.

Different qualities of boys and girls are still appreciated by same-sex peers, different principles of structuring social groups are practiced by boys and girls, and even the mean group size in girls and boys is different [Butovskaya and Kozintsev, 1999b]. Popular peers seem to be more socially competent than other classmates, but such competence is gender biased. Boys may be more tolerant to aggression than girls, and skillful manipulation with aggressive and conflict resolution strategies may be more beneficial for them. Girls are probably less tolerant to hostility and invest more efforts to avoid open conflicts with peers, but this remains to be tested. It can also be asked if socially competent children like to attend school more than their less socially competent peers. Conflict management, being one of the indicators of social competence, seems to be an appropriate parameter for such analysis.

The following hypotheses will be tested: (1) physical aggression is more often practiced by boys and indirect aggression by girls; (2) girls are more oriented on constructive conflict resolution and third-party interventions; (3) physical aggression is not the principal instrument of social success for popular adolescents of either sex; (4) physical aggression decreases with age in both boys and girls whereas conflict management skills increase; (5) the popularity of boys and girls among same-sex peers increases with increase in their capacity for conflict management; and (6) adolescents having a higher capacity for conflict management like to attend school.

## METHODS

### Participants

Information on 212 Russian adolescents (101 boys, 111 girls) aged 11–15 years was collected in 2001–2003. Among these subjects, 38 were 11 years old; 29, 12 years old; 17, 13 years old; 106, 14 years old; and 22, 15 years old. Data were collected at Moscow schools selected by chance. The participants attended seven mixed-sex classes at three different schools. Before the study, we obtained both the children's and their parents' permission. We were unable to collect data at the fourth school due to a strong protest on the parents' part. They argued that interviews based on peer ratings stir up negative feelings among classmates and encourage sneaks. This attitude must be considered when peer-rating questionnaires are administered to school-children.

### Procedure

All the participants filled out the Russian version of the Peer-Estimated Conflict Behavior inventory (PECOBE) developed by Bjorkqvist and Osterman [1998]. The questionnaire was administered as a group test during school hours. Aggression (physical, verbal, and indirect), constructive conflict resolution, third-party intervention, withdrawal, and victimization were measured according to this inventory. For example, children were asked as to who was physically aggressive (i.e. hits, kicks, trips, shoves, pulls, takes things, and pushes). We also asked them who was verbally aggressive (i.e. yells, insults, calls names), and who was indirectly aggressive (i.e. gossips, spreads false stories, says bad things behind the other's back, tries to get others to dislike a person, and shuts the other out of the group). We estimated the rate of constructive conflict resolution by asking who tried to solve problems with others by calming down the situation and taking the over problems, and the rate of third-party intervention by asking who tried to stop fights between others or tried to solve others' conflicts. Adolescents were also asked as to who withdrew from conflicts or gave up. Finally, respondents were asked who were the victims of others' aggression (i.e. hit, teased, yelled at, gossiped about). Adolescents provided both peer ratings and self-ratings for all items. PECOBE presents an elaborate version of the Direct and Indirect Aggression Scales constructed by Bjorkqvist et al. [1992b], and is much easier to administer and work with. Participants evaluate on a five-point scale (0 = not at all, 4 = very often) how often their classmates behave in the way described in the items. In this study, same-sex peer-estimated data were collected only because same-sex conflicts are more common at school than are those between the sexes [Bjorkqvist and Niemela, 1992; Lagerspetz and Bjorkqvist, 1994; Butovskaya, 2001]. Besides, all respondents rated themselves on the same items using the five-point scale. Before the administration of the inventory, we prepared two separate lists (of boys and girls, respectively) for distribution in every class. The order of names was identical in all individual questionnaires.

The attributional discrepancy index (ADI), the difference between self- and peer estimates for each of the items [Osterman et al., 1994], was calculated for each subject.

We asked the respondents to rate their own popularity and that of their classmates of the same sex on a separate sheet. The question was formulated as follows: "Please assess the popularity of

each of the same-sex peers and your own on the five-point scale (0 = not at all, 4 = very popular).” A sociometric matrix was later constructed for boys and girls in each class based on these data. Also, all respondents were asked to evaluate their attitude to school on a five-point scale (1 = I really like school; 5 = I really hate school). In addition, data on height and weight were collected for each adolescent in order to find out to what extent, if at all, the individual’s size influences his/her popularity and behavior, specifically the rate of personal aggression, peacemaking and victimization. The inventory was administered for one class only at a time and the authors were personally present when the inventories were filled out. The whole procedure usually took 45 min.

Following the recommendations of Bjorkqvist and Osterman [1998], we listed each time those absent in the class when the inventory was filled out. Data on the behavior of these subjects were not used for the analysis. When the data were collected, the sum of scores concerning the same-sex children present was divided by the number of children of the same sex present minus one (the child him/herself).

The data were processed using SPSS 10.0 for Windows. To test the interactive effect of gender and age on aggression, peacemaking, and victimization, we conducted a  $2 \times 5$  (gender and age) multivariate analysis of variance (MANOVA). The effects of gender and age were tested separately using the univariate analysis of variance (ANOVA) for each of the items studied.

## RESULTS

The factor analysis of scores based on peer estimations yielded three factors: PCI (aggression), accounting for 35% of variance, PCII (peacemaking), accounting for 24.5%, and PCIII (victimization), accounting for 18.4%. The total share of variance explained by these factors was 77.9%. The internal consistency of PCI, measured by alpha, was 0.81; that of PCII was similar (0.82), and that of PCIII much lower (0.42).

### Gender Differences in Aggression, Conflict Resolution, and Victimization

The results of univariate ANOVA revealed significant gender differences for a number of items when the entire sample was analyzed (Table I). Boys were significantly more physically aggressive both by peer- and self-ratings, and more verbally aggressive by peer ratings. Girls scored significantly higher by both peer- and self-ratings on indirect aggression, constructive conflict resolution, third-party intervention, and withdrawal (Table I). No gender differences were found for victimization based on either peer- or self-ratings.

In boys, according to peer ratings, the level of verbal aggression was higher than that of physical aggression ( $z = -4.10$ ,  $P < 0.001$ ) (Table I). No significant differences were found between these two items according to self-ratings ( $z = -0.89$ , NS). The level of physical aggression was higher than that of indirect aggression according to both ratings

**TABLE I. Mean rating scores, standard errors, and results of the univariate analysis of variance (ANOVA) of aggression, peacemaking, and victimization based on peer estimation and self-estimation ( $n = 212$ )**

| Variables                                      | Boys |      | Girls |      | <i>F</i> | df    | <i>P</i> |
|------------------------------------------------|------|------|-------|------|----------|-------|----------|
|                                                | Mean | SE   | Mean  | SE   |          |       |          |
| Physical aggression                            | 2.32 | 0.07 | 1.72  | 0.06 | 41.03*** | 1.210 | 0.001    |
| Physical aggression (self-rating)              | 2.02 | 0.13 | 1.51  | 0.08 | 11.59*** | 1.210 | 0.001    |
| Verbal aggression                              | 2.52 | 0.07 | 2.11  | 0.07 | 16.02*** | 1.210 | 0.001    |
| Verbal aggression (self-rating)                | 1.88 | 0.12 | 1.91  | 0.10 | 0.04     | 1.210 | NS       |
| Indirect aggression                            | 1.85 | 0.06 | 2.09  | 0.07 | 6.87**   | 1.210 | 0.009    |
| Indirect aggression (self-rating)              | 1.25 | 0.07 | 1.52  | 0.07 | 7.47**   | 1.210 | 0.007    |
| Constructive conflict resolution               | 2.17 | 0.06 | 2.49  | 0.06 | 14.28*** | 1.210 | 0.001    |
| Constructive conflict resolution (self-rating) | 2.62 | 0.16 | 3.22  | 0.13 | 8.25**   | 1.210 | 0.004    |
| Third-party intervention                       | 1.87 | 0.05 | 2.05  | 0.05 | 6.43**   | 1.210 | 0.01     |
| Third-party intervention (self-rating)         | 2.20 | 0.15 | 2.63  | 0.13 | 4.81*    | 1.210 | 0.03     |
| Withdrawal                                     | 2.29 | 0.06 | 2.48  | 0.06 | 5.30*    | 1.210 | 0.02     |
| Withdrawal (self-rating)                       | 1.99 | 0.13 | 2.38  | 0.12 | 4.66*    | 1.210 | 0.03     |
| Victimization                                  | 2.06 | 0.07 | 2.03  | 0.07 | 0.06     | 1.210 | NS       |
| Victimization (self-rating)                    | 1.70 | 0.11 | 2.02  | 0.12 | 3.50     | 1.210 | NS       |
| Popularity                                     | 2.51 | 0.08 | 2.54  | 0.07 | 0.06     | 1.210 | NS       |
| Popularity (self-rating)                       | 2.75 | 0.15 | 3.01  | 0.13 | 1.65     | 1.210 | NS       |

\* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$ ; NS, not significant.

(peer ratings:  $z = -5.86$ ,  $P < 0.001$ ; self-ratings:  $z = -5.42$ ,  $P < 0.001$ ). The rate of verbal aggression was also higher than that of indirect aggression (peer ratings:  $z = -8.16$ ,  $P < 0.001$ ; self-ratings:  $z = -5.75$ ,  $P < 0.001$ ).

In girls, the situation was different. First, in no instance was the rate of physical aggression higher than, or equal to, the rate of verbal or indirect aggression (Table I). The rate of verbal aggression was much higher than that of physical aggression (peer ratings:  $z = -7.87$ ,  $P < 0.001$ ; self-ratings:  $z = -5.23$ ,  $P < 0.001$ ). Indirect aggression was more expressed than physical aggression by peer ratings ( $z = -5.52$ ,  $P < 0.001$ ) whereas self-ratings revealed no significant differences between these two items ( $z = -0.21$ , NS). Peer ratings evidence comparable levels of verbal and indirect aggression ( $z = -0.71$ , NS), whereas girls themselves believed that the rate of their verbal aggression exceeded that of indirect aggression ( $z = -3.65$ ,  $P < 0.001$ ).

No correlation was found between self- and peer ratings for any of the three types of aggression in boys, whereas in girls the correlation was positive for physical and verbal aggression (0.25,  $P < 0.01$  and 0.32,  $P < 0.001$ , respectively). No correlation between self- and peer ratings on indirect aggression was found in girls. Positive correlation between self- and peer ratings was found for constructive conflict resolution and third-party interventions in boys (0.21,  $P < 0.04$  and 0.31,  $P < 0.01$ ), but no such correlation was found in girls. Self- and peer ratings on withdrawal and victimization correlated positively in both gender groups (boys, 0.22,  $P < 0.05$  and 0.34,  $P < 0.001$ ; girls 0.20,  $P < 0.05$  and 0.45,  $P < 0.001$ ).

## Attributional Discrepancy Index

In both boys and girls, ADI scores were negative for three types of aggression, and for withdrawal and victimization (Table II; Fig. 1). They were positive for constructive conflict resolution, third-party intervention, and popularity in both gender groups (Fig. 1). This means that both boys and girls tended to understate their personal engagement in physical, verbal, and indirect aggression, and to exaggerate their own peacemaking activity (self- and peer ratings compared) (Table I).

ADI scores for all the variables studied were subjected to univariate ANOVA (Table II). No gender differences in ADI were found for either physical or indirect aggression. The scores for verbal aggression and victimization were significantly more negative in boys (Table II). No significant gender differences in ADI scores were found for other items, although ADI scores on constructive conflict resolution and third-party intervention in girls were much more positive than in boys.

## Aggression and Personal Abilities for Conflict Resolution

To evaluate the relationship between three types of aggression and personal propensities for conflict management and third-party control of others' aggression as well as for withdrawal and victimization, and to eliminate the effect of age and anthropometric variables, we calculated partial correlation coefficients (Tables III and IV). Only peer ratings were used in this case. Variables controlled for by partial correlation were age, height, and weight, because all these can affect the

**TABLE II. Results of the univariate analysis of variance (ANOVA) of attributional discrepancy indexes (ADI) based on aggression, victimization, conflict resolution, and popularity ( $n = 212$ )**

| Variables  | Boys       |      | Girls      |      | <i>F</i> | df    | <i>P</i> |
|------------|------------|------|------------|------|----------|-------|----------|
|            | ADI (mean) | SE   | ADI (mean) | SE   |          |       |          |
| PhA-PhAs   | -0.30      | 0.14 | -0.21      | 0.08 | 0.31     | 1.210 | NS       |
| VA-VAs     | -0.64      | 0.13 | -0.20      | 0.08 | 7.10**   | 1.210 | 0.008    |
| IA-IAs     | -0.60      | 0.09 | -0.57      | 0.07 | 0.06     | 1.210 | NS       |
| CCR-CCRs   | 0.46       | 0.16 | 0.72       | 0.11 | 1.58     | 1.210 | NS       |
| ThP-ThPs   | 0.33       | 0.14 | 0.58       | 0.10 | 1.67     | 1.210 | NS       |
| Wd-Wds     | -0.30      | 0.13 | -0.10      | 0.09 | 1.12     | 1.210 | NS       |
| Vict-Victs | -0.36      | 0.11 | -0.02      | 0.08 | 4.64*    | 1.210 | 0.03     |
| PP-PPs     | 0.23       | 0.16 | 0.47       | 0.10 | 1.49     | 1.210 | NS       |

Note: PhA = physical aggression, peer rating; VA = verbal aggression, peer rating; IA = indirect aggression, peer rating; CCR = constructive conflict resolution, peer rating; ThP = third-party intervention, peer rating; Wd = withdrawal, peer rating; Vict = victimization, peer rating; PP = popularity, peer rating. PhAs = physical aggression, self-rating; VAs = verbal aggression, self-rating; IAs = indirect aggression, self-rating; CCRs = constructive conflict resolution, self-rating; ThPs = third-party intervention, self-rating; Wds = withdrawal, self-rating; Victs = victimization, self-rating; PPs = popularity, self-rating. \* $P < 0.05$ ; \*\* $P < 0.01$ ; NS, not significant.

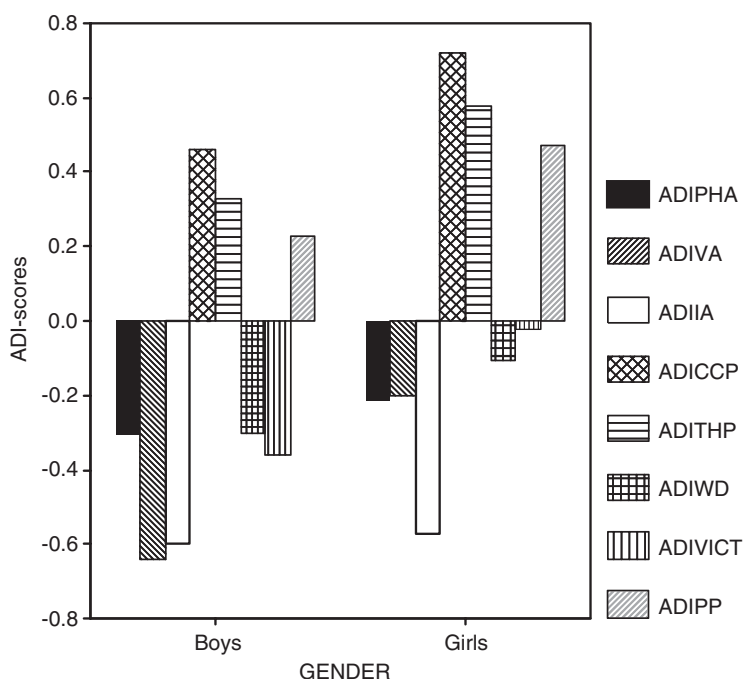


Fig. 1. Attributional discrepancy indexes (ADI) based on aggression, victimization, conflict resolution, and popularity in boys ( $n = 101$ ) and girls ( $n = 111$ ). ADIPHA—ADI for physical aggression; ADIVA—ADI for verbal aggression; ADIIA—ADI for indirect aggression; ADICCP—ADI for constructive conflict resolution; ADITHP—ADI for third-party interactions; ADIWD—ADI for withdrawal; ADIVICT—ADI for victimization; ADIPP—ADI for popularity.

behavioral variables in various ways. For example, tall and massive boys may be more physically aggressive because of being stronger. Or again, children with excessive body mass may more often become targets of bullying [Butovskaya et al., 1998; Opie, 1994]. Age, too, may influence the correlation between behavioral traits, so we eliminated its effect as well.

The examination of partial correlation coefficients (Tables III and IV) suggests that even when being controlled for these variables, the three types of aggression are positively correlated in both gender groups. In boys, physical aggression is positively correlated with withdrawal. Negative correlation was found between two other types of aggression (verbal and indirect), on the one hand, and constructive conflict resolution, third-party intervention, and withdrawal on the other hand. Constructive conflict resolution in boys is positively correlated with their third-party intervention activity and withdrawal, but negatively correlated with victimization. Correlation between withdrawal and victimization is positive.

In girls, all three types of aggression are positively correlated with victimization (Table IV). Indirect aggression is negatively correlated with constructive conflict resolution. Verbal and indirect aggression

are positively correlated with withdrawal. As in boys, a positive correlation exists between constructive conflict resolution and third-party intervention (Tables III and IV).

### Popularity, Aggression, and Conflict Resolution

We tested whether any connection exists between the person's popularity with same-sex peers and peer ratings on aggression and conflict resolution behavior. For this purpose, we calculated Pearson's correlation coefficients. No correlation between the three types of aggression and popularity was found in boys, and the same applies to physical and indirect aggression in girls. Verbal aggression, however, is positively correlated with popularity in girls (0.25,  $P < 0.01$ ). In both gender groups, popularity is positively correlated with personal abilities for constructive conflict resolution and third-party intervention (boys: 0.46,  $P < 0.001$  and 0.48,  $P < 0.001$ , respectively; girls: 0.44,  $P < 0.001$  and 0.54,  $P < 0.001$ , respectively). In both sexes, popularity is negatively correlated with withdrawal and victimization (boys:  $-0.22$ ,  $P < 0.03$  and  $-0.33$ ,  $P < 0.001$ , respectively; girls:  $-0.42$ ,  $P < 0.001$  and  $-0.24$ ,  $P < 0.02$ , respectively).

**TABLE III. Partial correlation coefficients between aggression, conflict resolution, withdrawal, and victimization scores in boys, controlled for age, height, and weight ( $n = 101$ )**

|      | PhA | VA      | IA      | CCR      | ThP      | Wd       | Vict     |
|------|-----|---------|---------|----------|----------|----------|----------|
| PhA  | —   | 0.77*** | 0.47*** | -0.24**  | NS       | 0.50***  | NS       |
| VA   |     | —       | 0.66*** | -0.31**  | -0.24*   | -0.41*** | NS       |
| IA   |     |         | —       | -0.35*** | -0.40*** | -0.21**  | NS       |
| CCR  |     |         |         | —        | 0.68***  | 0.21*    | -0.27*** |
| ThP  |     |         |         |          | —        | NS       | -0.35*** |
| Wd   |     |         |         |          |          | —        | 0.30***  |
| Vict |     |         |         |          |          |          | —        |

Note: PhA = physical aggression, peer rating; VA = verbal aggression, peer rating; IA = indirect aggression, peer rating; CCR = constructive conflict resolution, peer rating; ThP = third-party intervention, peer rating; Wd = withdrawal, peer rating; Vict = victimization, peer rating.

\* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$ ; NS, not significant.

**TABLE IV. Partial correlation coefficients between aggression, conflict resolution, withdrawal and victimization scores in girls, controlled for age, height and weight ( $n = 111$ )**

|      | PhA | VA      | IA      | CCR    | ThP     | Wd      | Vict    |
|------|-----|---------|---------|--------|---------|---------|---------|
| PhA  | —   | 0.87*** | 0.51*** | NS     | NS      | NS      | 0.47*** |
| VA   |     | —       | 0.64*** | NS     | NS      | 0.48*** | 0.48*** |
| IA   |     |         | —       | -0.20* | NS      | 0.43*** | 0.43*** |
| CCR  |     |         |         | —      | 0.70*** | NS      | NS      |
| ThP  |     |         |         |        | —       | NS      | NS      |
| Wd   |     |         |         |        |         | —       | 0.20*   |
| Vict |     |         |         |        |         |         | —       |

Note: PhA = physical aggression, peer rating; VA = verbal aggression, peer rating; IA = indirect aggression, peer rating; CCR = constructive conflict resolution, peer rating; ThP = third-party intervention, peer rating; Wd = withdrawal, peer rating; Vict = victimization, peer rating.

\* $P < 0.05$ ; \*\* $P < 0.01$ ; \*\*\* $P < 0.001$ ; NS, not significant.

### Attitude to School and Ratings on Aggression and Conflict Resolution

We calculated correlation coefficients between personal attitude to school (whether or not one likes to attend it) and all items discussed above (aggression, abilities for conflict resolution, victimization, and popularity) in boys and girls (Table V). In both gender groups, a positive attitude to school is correlated with self-rating on constructive conflict resolution abilities: those who rated themselves higher on conflict resolution, liked school more. No correlation was found between attitude to school and any of the three types of aggression in boys based on either peer or self-rating. Popular boys like to visit school more than their unpopular classmates. In girls, attitude to school is negatively correlated with the individual's self-evaluation on physical, verbal and indirect aggression, and positively correlated with conflict-managing abilities. Girls who practice conflict resolution and third-party interventions more frequently than others have a more positive attitude to school. No correlation between attitude to school and popularity was found in girls.

### Age Differences in Aggression, Conflict Resolution, and Third-Party Intervention

A  $5 \times 2$  (age and gender) MANOVA was conducted with peer ratings on physical, verbal and indirect aggression, constructive conflict resolution, third-party intervention, avoidance, and victimization. The main effect of gender is significant ( $F [7, 195] = 13.40, P < 0.001$ ), and the same is true for the main effect of age ( $F [28, 704] = 2.02, P < 0.001$ ). The main differences in mean scores for most parameters were obtained between 11 and 13 from one side and 13 and 15 from the other side. The interaction effect between age and gender is also significant ( $F [28, 704] = 1.87, P < 0.004$ ). The univariate ANOVA assessment of physical aggression revealed a significant age effect ( $F [4, 207] = 3.51, P < 0.01$ ) (Fig. 2a). The scores for physical aggression were maximal for 11- and 15-year-old boys and minimal for 13–14-year-old boys. The level of physical aggression in girls demonstrated certain in pick at 12 and was basically the same in other age cohorts. The effect of age on other items was insignificant. The univariate ANOVA test revealed the effect of gender on physical aggression ( $F [1,$

**TABLE V. Pearson's correlation coefficients (*r*) between different peer and self-estimated types of aggression, conflict resolution, victimization and popularity, and attitude to school in boys and girls**

| Items                                           | Attitude to school |          |          |          |
|-------------------------------------------------|--------------------|----------|----------|----------|
|                                                 | Boys               |          | Girls    |          |
|                                                 | <i>r</i>           | <i>P</i> | <i>r</i> | <i>P</i> |
| Physical aggression                             | -0.17              | NS       | 0.13     | NS       |
| Physical aggression (self-ratings)              | -0.11              | NS       | 0.20*    | 0.03     |
| Verbal aggression                               | -0.10              | NS       | 0.20*    | 0.03     |
| Verbal aggression (self-ratings)                | -0.07              | NS       | 0.22*    | 0.02     |
| Indirect aggression                             | 0.03               | NS       | 0.01     | NS       |
| Indirect aggression (self-ratings)              | 0.05               | NS       | 0.26**   | 0.006    |
| Constructive conflict resolution                | -0.25**            | 0.01     | -0.29**  | 0.002    |
| Constructive conflict resolution (self-ratings) | -0.16              | NS       | -0.21*   | 0.03     |
| Third-party intervention                        | -0.16              | NS       | -0.27**  | 0.004    |
| Third-party intervention (self-ratings)         | -0.16              | NS       | -0.11    | NS       |
| Withdrawal                                      | 0.11               | NS       | 0.09     | NS       |
| Withdrawal (self-ratings)                       | 0.01               | NS       | 0.07     | NS       |
| Victimization                                   | 0.10               | NS       | 0.11     | NS       |
| Victimization (self-rating)                     | 0.18               | NS       | 0.03     | NS       |
| Popularity                                      | -0.29**            | 0.003    | -0.14    | NS       |
| Popularity (self-ratings)                       | -0.17              | NS       | 0.05     | NS       |

Strongest positive attitude to school was rated as 1, and strongest negative attitude as 5. Note that for other items lowest expression was scored as 0 and maximal expression as 4.

\* $P < 0.05$ ; \*\* $P < 0.01$ ; NS, not significant.

210] = 45.72,  $P < 0.001$ ), verbal aggression ( $F$  [1, 210] = 16.78,  $P < 0.001$ ), indirect aggression ( $F$  [1, 210] = 7.29,  $P < 0.01$ ), constructive conflict resolution ( $F$  [1, 211] = 13.14,  $P < 0.001$ ), third-party intervention ( $F$  [1, 211] = 5.99,  $P < 0.05$ ), and withdrawal ( $F$  [1, 211] = 4.91,  $P < 0.03$ ) (Fig. 2a–f). No gender effect was found for victimization (Fig. 2g).

## DISCUSSION

### Sex and Age Differences in Aggression, Conflict Resolution, and Victimization

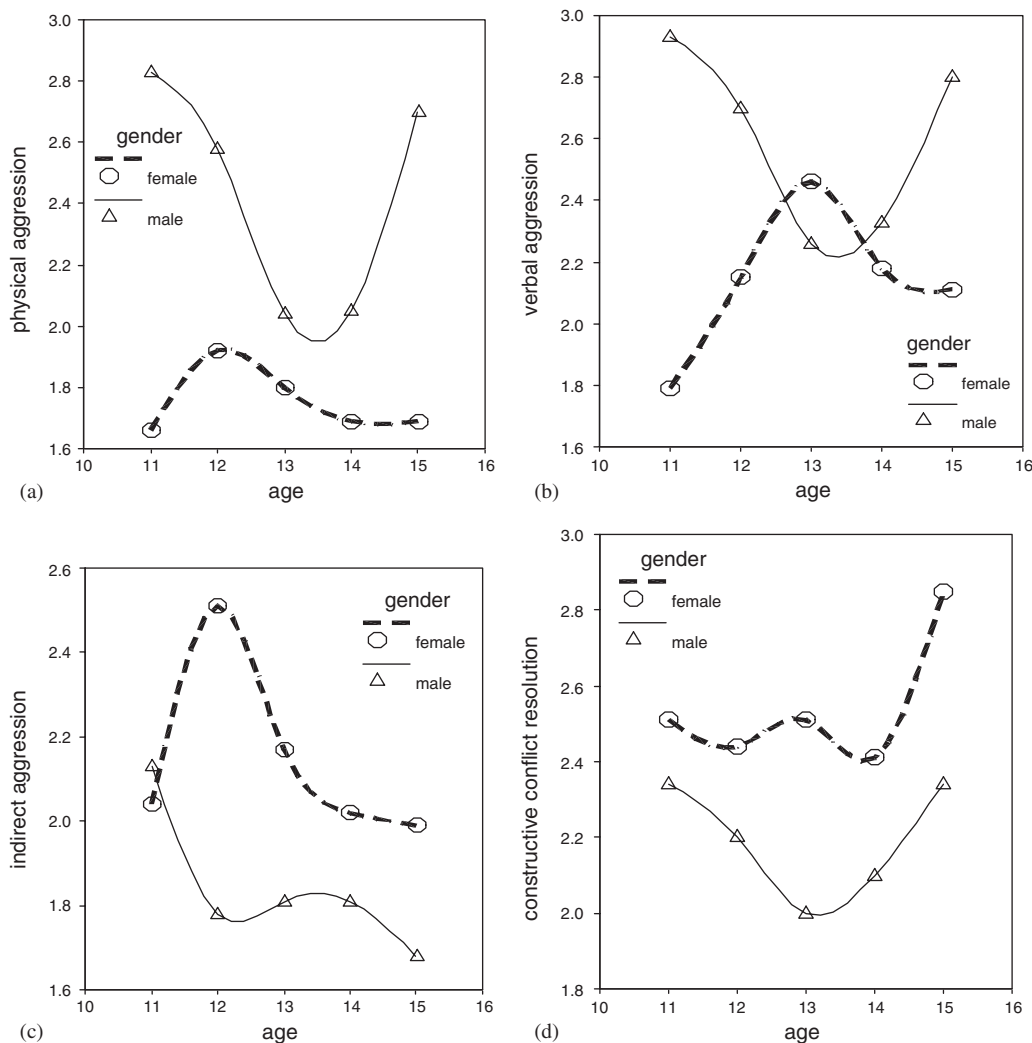
This study is among the few [Osterman et al., 1994] in which peer and self-assessment of aggression, conflict resolution, and victimization was recorded simultaneously using the same scale. In line with other studies of aggression, conflict management and withdrawal in Finnish, Polish, Israeli, Italian, Australian, and US cultures [Bjorkqvist et al., 1992a; Crick, 1996; Lagerspetz et al., 1994; Osterman et al., 1997; Owens et al., 2000; Underwood et al., 2001], we examined the same items in Russian adolescents aged 11–15 years. Significant gender differences were detected for both types of direct aggression—physical and verbal—and boys scored higher in both cases.

In the Russian sample, boys were able to estimate the rate of their constructive conflict resolution and

third-party interventions correctly; girls were unable to do so. Boys and girls were equally competent in estimating their withdrawal and victimization. These findings need to be examined in detail with regard to modern Russian socialization practices in order to understand the reasons underlying these patterns.

Usually in studies of adolescent aggression, peer estimation techniques are said to be more reliable, since self-estimations are likely to be substantially influenced by social desirability. However, peer estimations are dependent on social norms as well [Osterman et al., 1994]. In fact, what is measured by both methods is an aggression per se, an attributed aggression (by individuals or their peers). Earlier it was demonstrated that a discrepancy exists between self- and peer estimation for socially approved and disapproved behavioral traits. Cultures vary in their attitudes to different types of aggression [Osterman et al., 1994]. Also, males and females differ in the degree to which aggression is condemned [Butovskaya and Demianovitsch, 2002]. The ADI proposed by Osterman et al. [1994] proved to be a good indicator of the extent to which a certain type of aggression is accepted or restricted by social norms within the culture. The analysis of ADI scores in our study suggests that in Russia, norms regulating physical and indirect aggression are basically similar for both genders and that both types of aggression are equally condemned. Norms concerning verbal





**Fig. 2.** Mean scores on aggression, conflict resolution, victimization, and withdrawal in boys and girls by age (based on peer ratings). (a) physical aggression; (b) verbal aggression; (c) indirect aggression; (d) constructive conflict resolution; (e) third-party interactions; (f) withdrawal; (g) victimization.

aggression are significantly different in boys and girls; specifically, verbal aggression appears to be more disapproved in boys than in girls. Our findings are partly in line with data collected by Osterman et al. [1994]. Contrary to the situation in other cultures studied so far, physical aggression is equally condemned in Russian boys and girls. As in other cultures, indirect aggression in our sample was equally condemned in both genders. The comparison between our data and Polish ones is of special interest, because considerable changes have recently occurred in both societies. According to our data, Russian girls resemble Finnish girls rather than Polish ones in terms of ADI for all three types of aggression. In the Russian sample, both boys and girls show much higher self-scores on constructive conflict resolution and third-party intervention, but

ADI values for these items were more positive in boys. The difference may be due to the fact that the peacemaking tendency is more expressed in the Russian culture [Butovskaya et al., 2000; Butovskaya, 2001]. In the Russian sample, self-scores on withdrawal and victimization are lower than peer ratings in both genders, but because ADI scores for victimization are significantly more negative in boys, this may account for a higher self-esteem in boys. Generally, our findings suggest that Russian adolescents indeed rate their behavior in line with social desirability. The ADI method, then, may be very informative in cross-cultural studies [Osterman et al., 1994].

In our sample, verbal aggression was used most frequently of all three types of aggression in boys, which is similar to boys aged 15 in the study of

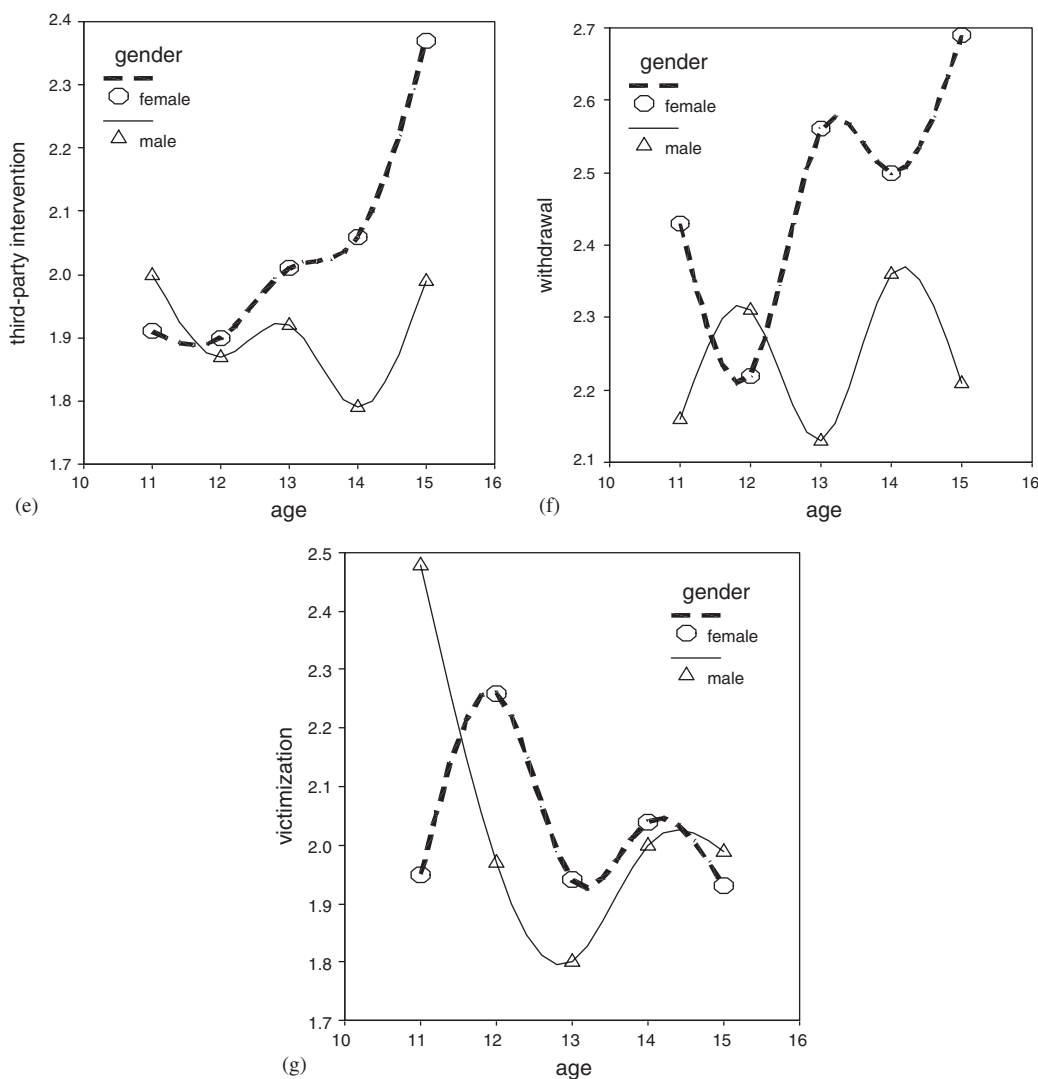


Fig. 2. Continued.

Osterman et al. [1998]. Unlike the above-mentioned study, our data revealed a similar rate of verbal and indirect aggression in girls. All the three forms are correlated in boys and girls. This means that physically aggressive adolescents tend to use more verbal and indirect aggression.

Patterns of correlation between aggression, conflict resolution abilities, withdrawal, and victimization reveal gender differences. Aggressive boys are less skillful in conflict resolution and less inclined to intervene in conflicts between others. No correlation was found between aggression and conflict resolution skills in girls except for indirect aggression. We obtained similar results in our ethological studies of Russian and Kalmyk children [Butovskaya, 2001; Butovskaya and Kozintsev, 1999a,b]. Aggressive boys do not normally avoid conflicts, but they

become targets of aggression as often as their non-aggressive peers. This is not surprising because aggression in children is frequently reciprocated [Vermande et al., 2000]. Also, redirected aggression is quite common in boys: recent targets of aggression frequently attacked weaker children after having lost the conflict [Butovskaya and Kozintsev, 1999a]. Those who regularly become victims appear to show less skill in reconciling their conflicts with others and in third-party interventions. Aggressive girls are mainly victims, and those who exhibited a high level of verbal and indirect aggression frequently withdraw from conflicts.

Russian data are in keeping with Finnish data [Lagerspetz and Bjorkqvist, 1994] in terms of gender differences in indirect aggression: in both samples, boys scored lower on this item both by peer and self-

ratings. Whereas gender differences in patterns of indirect aggression are hardly universal [Tapper and Boulton, 2000], they seem to be typical of many industrial and postindustrial European cultures, USA, and Australia [Bjorkqvist et al., 2001; Crick, 1996; Osterman et al., 1998; Owens et al., 2000]. The same findings were reported for more traditional cultures (Zapotec Indians, Mexico, and Argentina) [Fry, 1992, 1998].

Certain problems with obtaining objective data on indirect aggression must be mentioned. They stem from the covert nature of this behavior. Girls, compared with boys, may be more sensitive to what their peers say about them. Girls tend toward an expressive (emotional) representation of aggression, and their attitude toward aggression is negative, whereas boys often represent aggression as mainly instrumental and thus warranted [Archer and Parker, 1994; Tapper and Boulton, 2000]. Because of these differences, girls may be more sensitive to indirect aggression (although this type was found to be equally condemned by Russian adolescents regardless of gender). Several studies revealed no gender differences in indirect aggression [Richardson and Green, 1999; Rays and Bear, 1997; Walker et al., 2000].

Most writers studying the behavior of children and adolescents suggest that girls are more socially intelligent than boys of the same age [Osterman et al., 1997; LaFreniere et al., 2002]. Our data on sex differences in constructive conflict resolution and third-party intervention support this idea. Girls scored higher on conflict resolution and third-party intervention, and were able to evaluate themselves more objectively. Boys appeared to overstate self-engagement in these socially approved activities. A better social competence in girls may as well be used by them for the escalation of aggression. In fact, in many cultures girls use more indirect aggression than boys [Bjorkqvist et al., 1992a]. It is likely that a higher social competence in girls is due to their better non-verbal communicative skills [Hyde, 1990]. Women seem to be universally more skillful in encoding and decoding non-verbal signals [Hall, 1990; Hall and Briton, 1993]. However, alternative explanations may apply [Osterman et al., 1997].

Significant gender differences were found for withdrawal: girls withdraw at a higher rate. Withdrawal rate may reflect a gender-specific and a culture-specific pattern. As demonstrated by Osterman et al. [1997], Finnish-speaking children withdraw from conflicts significantly more often than Swedish-speaking children living in Finland, or Polish, Italian, or Israeli children. In all these

cultures, the tendency for withdrawal is higher in girls. No gender differences in victimization rate were found in Russian adolescents. Both boys and girls are equally competent in peer and self-ratings of victimization. This may be attributed to the overt nature of this behavior.

Bjorkqvist et al. [1992a] report that aggressive behavior attains its peak at the age of 11. Our data partly support this observation. Significant age differences, however, were only found for physical aggression. Perhaps other age differences were not revealed due to the nature of our sample.

### **Aggressiveness and Popularity with Adolescents**

Whether aggressive children are popular with their peers is disputable. Some writers suggested that male bullies were popular with peers in early adolescence, but became feared and disliked during late adolescence [Olweus, 1991]. Clearly, aggression and bullying are used not only by boys. Girls, too, can be aggressive (although they may prefer to use indirect aggression), so the relationship between popularity and aggressiveness is relevant for them as well [Bjorkqvist et al., 2001; Butovskaya, 2001; Butovskaya and Kozintsev, 1999a; Osterman et al., 1998; Sutton and Smith, 1999]. In the present study, no correlation between popularity and aggression was found in boys, but verbal aggression in girls was positively correlated with their self-ratings on popularity. Certain girls seem to believe that popularity is associated with a high level of verbal aggression. Peer ratings, however, contest these beliefs. Importantly, individual abilities for constructive conflict resolution and third-party intervention were highly appraised by both boys and girls, and those adolescents who were able to demonstrate such qualities were very popular with same-sex peers. Popular children of both sexes were rarely victimized by peers and rarely withdrew from conflicts, possibly because they were competent enough to regulate the situation and restore good relationships with opponents by reconciliation.

### **Who Likes To Go To School?**

In both sexes, a positive attitude to school was associated with high self-ratings on constructive conflict resolution skills. In other words, adolescents who believe that they are able to control the social situation and to overcome conflicts with peers assess their schooling more positively. Gender differences exist with regard to the correlation between attitude to school and aggressiveness. In boys, no such

correlation was found. Popular boys like to attend school more than their unpopular peers. Socially competent girls (those with highly developed conflict resolution and third-party intervention skills) usually like school. However, girls tended to evaluate their aggressive propensity more critically. Possibly for that reason popular girls rated themselves lower on physical, verbal, and indirect aggression. In contrast to the situation in boys, high popularity was not a good predictor of attitude to school in girls. The difference may be due to the fact that girls are generally less straightforward than boys. They prefer to establish closer relationships with a few same-sex classmates and to spend most time with them, whereas boys tend to form larger groups [Bjorkqvist et al., 1992a; Butovskaya and Kozintsev, 1999b].

## CONCLUSIONS

Generally, our data support the idea that certain universals exist with regard to patterns of adolescent social behavior. This primarily concerns gender differences in physical and indirect aggression, constructive conflict resolution, and third-party intervention. Russian boys appear to be more physically aggressive than girls, whereas the opposite is true of indirect aggression. The general statement that “males are more aggressive than females” needs to be specified, because in most cultures males are more physically aggressive whereas females tend to indirect aggression. Different socialization practices and learned scripts may determine the modes of male and female aggressive behavior in a particular society, but basic biological differences between the sexes should not be underestimated. Earlier, in a comparative study of eight cultures, it was demonstrated that gender differences in the social behavior of preschoolers follow the same patterns and can hardly be attributed solely to basic similarities in socialization [LaFreniere et al., 2002]. Ethological studies of children’s behavior revealed sex differences in aggression and affiliation [Blurton-Jones and Koner, 1973; Butovskaya et al., 2000; Munroe et al., 2000; Omark et al., 1975]. Differences are evident already in 2-year-olds: boys behave in a more aggressive and dominant manner than girls [Maccoby, 1990; Butovskaya et al., 2000] and remain more physically aggressive at all ages.

No correlation between aggression and popularity was found in either gender group in this study. Popular boys and girls demonstrate higher rates of constructive conflict resolution and third-party

interventions, implying that in Russian culture the individual’s popularity with same-sex peers is at least partly dependent on his/her integrative social skills. A Positive attitude to school in both gender groups is correlated with higher peacemaking skills. Besides, a positive attitude to school in girls is negatively correlated with all three types of aggression. These findings may have some practical relevance because they suggest ways of improving attitudes to school in adolescents.

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