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PEER RELATIONS

Participant Roles in Bullying Among Dutch Adolescents With Autism Spectrum Disorders

Inge Schrooten*, Ron H.J. Scholte, and Antonius H.N. Cillessen

Behavioral Science Institute, Radboud University Nijmegen

Shelley Hymel

Faculty of Education, University of British Columbia

This study investigated whether participant roles (i.e., bully, assistant, follower, defender, outsider, victim) identified in bullying among normative groups of adolescents educated in regular education could also be found among adolescents with autism spectrum disorders (ASD) educated in special education classrooms. Relationships between the participant roles and three social status measures (social preference, social impact, and popularity) were also examined. There were 260 Dutch adolescents with ASD, ages 12–18 ($M = 13.75$, $SD = 1.42$; 224 boys, 36 girls), and 743 Dutch typically developing (TD) adolescents, ages 11–17 ($M = 13.41$, $SD = 1.24$; 380 boys, 363 girls) who filled out questionnaires during classroom testing sessions conducted by the first author and trained (under)graduate students. Participant roles could be distinguished, although role distributions differed across groups and across sexes. There were more outsiders and defenders, and fewer followers among boys with ASD than among TD boys. Among girls with ASD, there were more victims than among TD girls. Students with ASD could more often be assigned multiple roles and were less often uninvolved than TD students. The relationships between participant roles and social status measures also differed across groups and across sexes. Whereas bullying is considered a universal social phenomenon, the existence of participant roles in bullying situations might be considered universal, as well. Apparently, the social difficulties of students with ASD do not seem to prevent them from taking on various participant roles in bullying situations. Additional practical implications are discussed.

Bullying in schools is a serious problem worldwide and has been extensively researched (Due et al., 2005; Lagerspetz, Björkqvist, Berts, & King, 1982). Bullying is defined as repeatedly carrying out negative actions on the part of one or more persons against an individual or individuals in a situation in which there is an imbalance of physical and/or psychological power (Olweus, 1993). Although rates vary across sex, age, schools, and

countries (e.g., Due et al., 2005; Nansel, Craig, Overpeck, Saluja, & Ruan, 2004; UNICEF, 2012), 15%–20% of children and youth report being victimized by peers (Craig, Schumann, Edge, & Teske, 2012; Due et al., 2005; Eslea et al., 2004), and 10%–15% report bullying peers on a regular basis (i.e., “sometimes” to “weekly”; Craig et al., 2012; Eslea et al., 2004). Negative consequences of being involved in bullying and/or victimization are well documented, with students reporting concurrent and future poorer physical and psychological health (Arseneault, Bowes, & Shakoor, 2010; Due et al., 2005; Stassen Berger, 2007). Bullying thus constitutes a major problem, and action needs to be undertaken to prevent the detrimental effects for the children involved.

Recently, research has shown that students receiving special education services are particularly vulnerable to victimization. That is, a population that is already at risk for worse later

*Current affiliation: De Ambelt Academie, Zwolle, the Netherlands

Correspondence should be addressed to Inge Schrooten, De Ambelt Academie, Dr. Hengeveldweg 9, 8025 AK Zwolle, the Netherlands. E-mail: i.schrooten@ambelt.nl

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adjustment is also at risk of being victimized at higher rates than typically developing (TD) students (e.g., Rose, Monda-Amaya, & Espelage, 2011). Among students receiving special education services, students with autism spectrum disorders (ASD) seem to be worst off for myriad reasons, including their impairments in social understanding (American Psychiatric Association, 2000; Baron-Cohen, 2000; Heerey, Capps, Keltner, & Kring, 2005). Recent reviews showed that, both in general and special education, students with ASD are considerably more likely to be bullied than both TD peers and students with other special needs (Humphrey & Hebron, 2015; Rose, Espelage, & Monda-Amaya, 2009; Rose et al., 2011; Schroeder, Cappadocia, Bebko, Pepler, & Weiss, 2014). In contrast, researchers suggested that students with ASD are also more vulnerable to show bully behavior themselves (Rose et al., 2009; Rose et al., 2011; Van Roekel, Scholte, & Didden, 2010). This indicates that bullying might constitute an even larger problem among students with ASD. To know how bullying can be prevented and targeted for intervention, more insight into the prevalence and nature of bullying is needed.

To our knowledge, only one study examined the prevalence and perception of bullying and victimization among groups in segregated educational settings solely consisting of adolescents with ASD (Van Roekel et al., 2010). Van Roekel et al. reported similar prevalence for groups of students with ASD in segregated settings (6%–46% for perpetration and 0.4%–30.4% for victimization) as for groups of TD students (i.e., prevalence of 5%–20% for perpetration and 5%–41.4% for victimization; e.g., Due et al., 2005; Nansel et al., 2004). This indicates that even in segregated settings aimed at educating vulnerable students, bullying constitutes a major problem. Given that bullying and victimization are associated with poorer physical and psychological health (Arseneault et al., 2010; Due et al., 2005; Stassen Berger, 2007), it is important to shed light on bullying in this special population. Moreover, given that bullying has recently been considered a group process (Salmivalli, 2010), it becomes important to consider more than just the roles of bully and victim in such research.

PARTICIPANT ROLES

Peers are present in 85% to 88% of all bullying episodes (Atlas & Pepler, 1998; Hawkins, Pepler, & Craig, 2001) and appear to play specific roles that have been referred to as participant roles (Goossens, Olthof, & Dekker, 2006; Salmivalli, Lagerspetz, Björkqvist, Österman, & Kaukiainen, 1996; Sutton & Smith, 1999). In addition to the bully and the victim, four other roles have been identified (Salmivalli et al., 1996; Salmivalli, Lappalainen, & Lagerspetz, 1998):

- *Assistants* eagerly join in the bullying and actively support the bully in attacking the victim.
- *Reinforcers* provide positive feedback to the bully by laughing, cheering, inciting, and/or providing an audience.

- *Outsiders* stay away from the bullying situation and do not take sides. Although they do not take action, outsiders may nevertheless encourage bullying by sending a silent message that bullying behavior is acceptable.
- Finally, *defenders* stand up for the victim and actively try to stop bullying.

Prevalence for these participant roles among TD youth (across sexes) are 4%–14% for bullies, 4.7%–14% for victims, 6.3%–12.6% for assistants, 15.2%–19.5% for reinforcers, 8%–32% for outsiders, and 5%–20.4% for defenders (Goossens et al., 2006; Salmivalli, 1999; Salmivalli et al., 1996; Salmivalli et al., 1998). These roles can vary significantly by sex (Camodeca & Goossens, 2005; Goossens et al., 2006; Monks, Smith, & Swettenham, 2003; Salmivalli et al., 1996; Salmivalli et al., 1998), with girls more likely to be defenders, outsiders, and victims and boys more likely to be bullies, assistants, and reinforcers. These sex differences are not observed consistently, however (Sutton & Smith, 1999; Sutton, Smith, & Swettenham, 1999). In addition, participant roles have been found to vary with age (Sutton & Smith, 1999; Sutton et al., 1999), with victims being older than participants who cannot be assigned any role and reinforcers being younger than outsiders and victims. Until now, nothing is known about the existence or prevalence of participant roles and their associations with sex and age among adolescents with ASD.

Participant Roles and Social Status

With the transition from elementary to secondary school, students enter new peer groups and new status hierarchies are established. Gaining and maintaining social status becomes increasingly important (De Bruyn & Cillessen, 2006; LaFontana & Cillessen, 2002), as it reflects the relationship between an individual and the social context in which she or he functions. It is typically assessed using sociometric indices of acceptance and rejection (i.e., liking vs. disliking by peers) as well as social preference (acceptance minus rejection) and social impact (acceptance plus rejection; Cillessen, 2009; Parkhurst & Hopmeyer, 1998) and in reputation and social prominence (i.e., popularity; De Bruyn & Cillessen, 2006; Hymel, Closson, Caravita, & Vaillancourt, 2010; Lease, Kennedy, & Axelrod, 2002; Parkhurst & Hopmeyer, 1998). These indices of social status have been related to various indicators of social adjustment (Cillessen, 2009; Hymel et al., 2010; Newcomb, Bukowski, & Pattee, 1993) and the roles that students adopt regarding bullying.

Research with TD children and adolescents has shown that although the associations between social status and behavior differ by sex (Cillessen & Mayeux, 2004; Hymel et al., 2010; LaFontana & Cillessen, 2002) and can change substantially across age (Cillessen & Mayeux, 2004; LaFontana & Cillessen, 2002), the bully role is generally negatively related to social preference and positively associated with popularity (Caravita, DiBlasio, & Salmivalli,

2010; De Bruyn & Cillessen, 2006). The victim role is negatively associated with both social preference (Boivin & Hymel, 1997; Caravita et al., 2010; De Bruyn & Cillessen, 2006; Salmivalli et al., 1996) and popularity (De Bruyn & Cillessen, 2006). In contrast, the defender role is associated with higher social preference (Caravita et al., 2010; Salmivalli et al., 1996). Less is known about the associations between other participant roles and social status measures. Salmivalli and colleagues (1996) have shown that outsiders are generally neutral in social preference, whereas the social status of assistants and reinforcers is less clear; associations may be moderated by sex. Female assistants and reinforcers were found to be low in social preference, whereas male assistants were average and male reinforcers were high in social preference. Associations between perceived popularity and other participant roles have not been examined, to our knowledge, and the links between participant roles and social status have never been examined among youth with ASD.

PRESENT STUDY

To gain greater insight into the nature and complexity of bullying among adolescents with ASD, potential participant roles regarding bullying and victimization were examined in groups solely consisting of adolescents with ASD in special education settings and in groups of TD adolescents. Differences between TD students and students with ASD were the primary focus in the present study, whereas variations as a function of age and sex were not, given the limited sample of students with ASD. Yet as age and sex differences are suggested to be present among almost all the variables of interest, these could possibly confound the results. Therefore, sex and age were included as demographic variables in the present study. Although age would be considered as a control variable, specific hypotheses about possible sex differences were formulated, just in case any sex differences would be found.

With respect to the participant roles distribution, TD girls were expected to be more likely to be defenders, outsiders, and victims, and boys were expected to be more likely to be bullies, assistants, and reinforcers, as has been found in previous research (Camodeca & Goossens, 2005; Goossens et al., 2006; Monks et al., 2003; Salmivalli et al., 1996; Salmivalli et al., 1998). For students with ASD, we had different expectations. In general, bullying reflects a group process (Salmivalli, 1999; Sutton & Smith, 1999) in which social understanding is essential. Individuals on the autism spectrum, however, may find such social understanding particularly difficult (Baron-Cohen, 2000; Haxe, Nijboer, & Velderman, 2010; Heerey et al., 2005). Even though high-functioning children with ASD are more socially involved than their lower functioning counterparts, children with ASD find combined and complex social behaviors especially difficult, and they initiate and respond to peers at half the rate of TD children (Bauminger, Shulman, & Agam, 2003), resulting in different participant

roles. For example, it might be that children with ASD interact less with peers because they do not know how to interact even though they want to (Bauminger et al., 2003) or because of previous negative learning experiences (e.g., awkward social interactions with peers) leading to growing social anxiety (White & Roberson-Nay, 2009). As a result, bullying in this population might be more of an affair between the perpetrator and the victim while the remainder of the students stands aside. Because we do not know whether all participant roles can be found among students with ASD, no specific hypotheses were formulated about sex differences in the role distribution.

Of additional interest was an examination of the associations between participant roles and social status measures across general and special education settings. For TD students, consistent with previous research (Boivin & Hymel, 1997; Caravita et al., 2010; De Bruyn & Cillessen, 2006), victim roles were expected to be associated with negative indices of social status and bully roles were expected to be associated with both positive and negative indices of social status. Furthermore, the defender role was expected to be associated with positive indices of social status (Caravita et al., 2010; Salmivalli et al., 1996). Associations between the other participant roles and social status measures are less clear and might vary across sexes.

Little is known about participant roles or social status of students with ASD, especially not in groups consisting solely of students with ASD. Risk factors for low social status, such as poor social skills (Jones & Frederickson, 2010; Whitney, Smith, & Thompson, 1994), may be less “visible” when students with ASD are surrounded by other students with ASD as compared to when surrounded by TD peers. Accordingly, the relationship between participant roles and social status measures among students with ASD was considered exploratory.

METHOD

Participants

Two groups of Dutch adolescents were recruited for this study: (a) one group of adolescents with high-functioning ASD ($N = 367$) who attended schools for special secondary education ($n = 286$) or schools with special classrooms for students with ASD ($n = 81$), both of at least practical training level,¹ and (b) one group (control group) of TD adolescents with no known history of any psychiatric disorder ($N = 838$) who attended schools for general secondary education of at least practical training level. All schools were located in urban cities in the east and south of the Netherlands, and they provided education for the rural areas surrounding the cities.

All participants received parental consent for inclusion in the study (parents of eight students with ASD and 24 TD students declined) and the students themselves offered informed assent (three students with ASD declined). All participants in the group of adolescents with ASD met

established diagnostic criteria for ASD (APA, 2000), with diagnoses made by psychiatrists/psychologists. Data from students who did not meet established diagnostic criteria for ASD but who had psychiatric diagnoses other than ASD ($n = 47$) or undiagnosed psychological and/or behavioral problems ($n = 7$) were excluded in order to maintain a relatively homogeneous sample of students who had been formally diagnosed with ASD. Students with IQ scores lower than 70 ($n = 5$) were also excluded, leaving a sample borderline intellectual functioning to high-functioning students with ASD. Data of TD students who were registered in school administration as having a diagnosis or characteristics of a psychiatric disorder were excluded ($n = 4$). In addition, for both groups a minimum class participation rate was set in order to obtain acceptable sociometric scores. For TD students, a participation rate of at least 60% was set, which has previously been found acceptable (Cillessen & Marks, 2011), excluding data from 67 students. Because special education classrooms consisted of fewer students, a less stringent criterion was needed to prevent unnecessary data loss. Marks, Babcock, Cillessen, and Crick (2013) showed that reliability of sociometric items increased rapidly with participation rates from 0 to .50. With participation rates above .50, reliability continued to increase but not as rapidly. Following recommendations of Marks et al. to collect more data to increase reliability (by using unlimited nominations and multiple items; see Measures section), a participation rate of at least 50% was applied, excluding data from 42 students with ASD (instead of excluding data from 75 students with ASD, when applying a participation rate of at least 60%).

The final group size of adolescents with ASD was 260 students (224 boys, 36 girls), ranging in age from 12 to 18 years ($M = 13.75$, $SD = 1.42$).² The sample was predominantly Dutch (96.2% Dutch, 1.9% other ethnicities, 1.9% missing), and diagnoses were distributed as follows: ASD ($n = 6$), autism ($n = 44$), pervasive developmental disorders—not otherwise specified (PDD-NOS; $n = 161$), and Asperger syndrome ($n = 49$). Classes consisted of six to 14 students ($M = 8.95$, $SD = 1.82$). The final group size of TD adolescents educated in regular education classrooms was 743 students (380 boys, 363 girls), ranging in age from 11 to 17 years ($M = 13.41$, $SD = 1.24$). The sample was predominantly Dutch as well (96.8% Dutch, 0.4% Surinamese/Dutch Antillian, 2.4% other ethnicities, 0.4% missing), and classes consisted of 11 to 30 students ($M = 22.43$, $SD = 5.22$).

Procedure

Data were collected during single classroom testing sessions conducted by the first author and trained (under)graduate students. All classrooms were visited in the 2 months before Christmas break. In collaboration with practitioners in

special education, we developed a strict research procedure that would fit the needs of the lowest functioning students in our research population. In this procedure, students were given verbal general instructions regarding their completion of the survey. The following definition of bullying was read aloud in class and was printed on the questionnaire to ensure that students understood the concept of bullying:

Bullying is when one child is repeatedly exposed to harassment and attacks from one or several other children. Harassment and attacks may be, for example, shoving or hitting the other one, calling him/her names or making jokes about him/her, leaving him/her outside the group, taking his/her things, or any other behavior meant to hurt the other one. It is not bullying when two students with equal strength or equal power have a fight, or when someone is occasionally teased, but *it is bullying, when the feelings of one and the same student are intentionally and repeatedly hurt.* (Salmivalli & Voeten, 2004, p. 248)

After groupwise instructions, students got the opportunity to ask questions in class. Thereafter, students filled out their questionnaires individually and they were helped individually with questions when needed. Student completion of all study measures was supervised by the investigator or a teacher.

Measures

Participant roles. To determine students' participant roles in bullying, a Dutch translation of the short version of the Participant Roles Questionnaire (Salmivalli & Voeten, 2004) was administered using an unlimited peer nomination procedure (i.e., they could nominate as many peers as they liked). Specifically, participants were provided with 16 behavioral descriptions and a roster containing the names of all classmates, each with a unique number. Adolescents were asked to nominate peers for each of the 16 items by writing down the numbers corresponding to peers who best fit each description. If they did not feel that any student fit that description, they could leave the item blank. Self-nominations were discarded for the computation of peer-reported participant roles. The Participant Roles Questionnaire included (a) a bully scale (three items, e.g., "starts bullying"), (b) an assistant scale (three items, e.g., "joins in the bullying, when someone else has started it"), (c) a reinforcer scale (three items, e.g., "comes around to see the situation"), (d) a defender scale (three items, e.g., "tries to make the others stop bullying"), (e) an outsider scale (three items, e.g., "doesn't take sides with anyone"), and (f) a single-item victim scale ("is bullied by other children"). Cronbach's alpha coefficients ranged from .73 to .92 across scales in the sample of students with ASD and from .76 to .94 in the sample of TD students.

Following procedures established by Goossens et al. (2006), participant roles were assigned on the basis of percentage scores. Because we used fewer items to capture the various participant roles in this study than Goossens and colleagues did in their study, the most stringent criterion (20%) that Goossens et al. used was chosen for role assignment in our study. To assign participant roles, the possible maximum number of nominations per scale was calculated (i.e., number of items \times number of nominators). Students had to receive at least 20% of the possible maximum number of nominations of their classmates on a particular scale in order to be assigned a particular role. For each item of the Participant Roles Questionnaire, the number of peer nominations a student received of his or her classmates was summed and divided by the number of nominators in a classroom. For each separate item, a percent score was calculated. Percent scores for each scale were added and then divided by the number of items that the particular scale consisted of. The resulting mean percent scores were used to assign participant roles. If a participant was not nominated by at least 20% of the classmates on any of the scales, she or he was considered "not involved." If a student had been nominated by at least 20% of classmates for two or more roles, he or she was assigned the role with the highest score. However, if the difference between two or more roles was .01 or less, the participant was considered "unclassified," similar to the procedure adopted in other studies (Salmivalli, Huttunen, & Lagerspetz, 1997; Salmivalli et al., 1996; Salmivalli et al., 1998; Sutton & Smith, 1999).

Social status and popularity. Social status was assessed based on sociometric data collection, of which applicability in special education classrooms has been demonstrated in previous studies (Wolters, Knoors, Cillessen, & Verhoeven, 2011, 2012). Unlimited peer-nominations could be received on the following questions: "Who do you like most in your classroom?" (acceptance), "Who do you like least in your classroom?" (rejection), "Who is most popular in your classroom?" (popularity), and "Who is least popular in your classroom?" (unpopularity). Proportion

scores within classrooms were calculated for each participant by dividing the number of nominations received from peers by the number of nominators. Social preference and social impact scores were calculated by subtracting or summing the proportion score for rejection from the proportion score for acceptance, respectively. Popularity was computed by subtracting the proportion of unpopularity nominations from the proportion of popularity nominations received from classmates.

RESULTS

Preliminary Analyses

Results of chi-square analysis showed that the group of students with ASD contained proportionately more boys than did the group of TD students, $\chi^2(1) = 98.55$, $p < .001$, Cramér's $\phi = .313$, and results of a t test showed that students with ASD ($M = 13.75$, $SD = 1.42$) were significantly older than TD students ($M = 13.41$, $SD = 1.25$), $t(403) = -3.38$, $p < .001$, Cohen's $d = -.337$. Descriptive statistics on the social status measures for both groups are presented in Table 1.

Although variations as a function of age and sex were not a primary focus in the present study, these demographic variables possibly confound the results. Therefore, the analyses are conducted for the complete groups (i.e., boys and girls together) and for boys and girls separately. If no differences are found between sexes, the results are reported for the complete groups. If sex differences are found, the results of the subsequent analyses are reported for boys and girls separately. In addition, age is controlled for statistically when possible.

Participant Roles

Sixty-five percent of all students could be assigned a singular participant role. Role assignment differed between the two groups and between sexes; boys (76.3%) and girls

TABLE 1
Descriptive Statistics for Social Preference, Social Impact, and Perceived Popularity Proportion Scores by Group

Social Status Index	1	2	3	M (SD)
1. Preference	—	-.022	.386*	.14 (.22)
2. Impact	.022	—	.200*	.39 (.15)
3. Popularity	.471*	.180*	—	.02 (.36)
<i>M (SD)</i>	.22 (.35)	.56 (.19)	-.01 (.39)	
Total Sample <i>M (SD)</i>	.16 (.26)	.43 (.18)	.02 (.37)	

Note: Correlations for typically developing students ($n = 743$) are presented above the diagonal, and correlations for students with autism spectrum disorders ($n = 260$) are presented below the diagonal. Means and standard deviations for typically developing students are presented in the vertical columns, and means and standard deviations for students with autism spectrum disorders are presented in the horizontal rows.

* $p < .01$.

(86.1%) with ASD could be assigned a participant role more often than TD students, $\chi^2(1) = 32.07, p < .001$, Cramér's $\phi = .230$, and $\chi^2(1) = 4.93, p = .026$, Cramér's $\phi = .111$, respectively, and TD girls (68.3%) could be assigned a participant role more often than TD boys (53.2%), $\chi^2(1) = 17.87, p < .001$, Cramér's $\phi = .155$, whereas no differences were found between boys and girls with ASD. Because the assistant role comprised only a small number of students, the assistant and reinforcer role were combined into a broader *follower* category, as has been done in previous research (Goossens et al., 2006; Sutton & Smith, 1999). Chi-square analyses indicated significant differences between the two groups in the distribution of participant roles for both boys, $\chi^2(6) = 111.19, p < .001$, Cramér's $V = .429$, and girls, $\chi^2(6) = 30.20, p < .001$, Cramér's $V = .275$ (see Table 2). For boys, there were significantly more defenders, outsiders, and unclassified boys and significantly fewer followers and uninvolved boys among the students with ASD than among TD students. For girls, however, there were significantly more victims and unclassified girls and fewer uninvolved girls among the students with ASD than among TD students. In addition, sex differences were found in the participant role distribution of TD students, $\chi^2(6) = 137.40, p < .001$, Cramér's $V = .430$, with boys being more often classified as followers, victims, and uninvolved and girls being more often classified as

defenders and outsiders. No sex differences were found in the participant role distribution of students with ASD.

Social Status and Popularity

Given that participant role distributions differed between boys and girls, relationships between role assignment and social status measures were examined for boys and girls separately. Furthermore, the subsequent analyses were conducted with the clearly defined participant roles only (i.e., bully, follower, defender, outsider, and victim), because the heterogeneous nature of the groups of uninvolved students and unclassified students would make the results of these groups difficult to interpret.

Because social preference, social impact, and perceived popularity were found to reflect distinct dimensions of peer status (Cillessen & Mayeux, 2004) tapping different behaviors and showing only modest overlap (LaFontana & Cillessen, 1999; Parkhurst & Hopmeyer, 1998), three distinct analyses of covariance (ANCOVA) were conducted for boys and girls separately to evaluate whether social status indices differed across participant roles for both sexes. Independent variables were group (ASD vs. TD) and participant roles (bully, follower, defender, outsider, victim); age was a covariate; and social preference, social impact, and popularity were dependent variables.

TABLE 2
Prevalence of Participant Roles by Group and Sex

Role	Typically Developing		ASD		Total Sample	
	n	%	n	%	N	%
Not Involved ^a	288	38.8%	38	14.6%	326	32.5%
Boys ^a	175	46.1%	36	16.1%	211	34.9%
Girls ^a	113	31.1%	2	5.6%	115	28.8%
Bully	29	3.9%	16	6.2%	45	4.5%
Boys	19	5.0%	15	6.7%	34	5.6%
Girls	10	2.8%	1	2.8%	11	2.8%
Follower	93	12.5%	27	10.4%	120	12.0%
Boys ^a	74	19.5%	24	10.7%	98	16.2%
Girls	19	5.2%	3	8.3%	22	5.5%
Defender ^a	75	10.1%	43	16.5%	118	11.8%
Boys ^a	12	3.2%	36	16.1%	48	7.9%
Girls	63	17.4%	7	19.4%	70	17.5%
Outsider	194	26.1%	82	31.5%	276	27.5%
Boys ^a	53	13.9%	67	29.9%	120	19.9%
Girls	141	38.8%	15	41.7%	156	39.1%
Victim ^a	59	7.9%	34	13.1%	93	9.3%
Boys	44	11.6%	29	12.9%	73	12.1%
Girls ^a	15	4.1%	5	13.9%	20	5.0%
Unclassified ^a	5	0.7%	20	7.7%	25	2.5%
Boys ^a	3	0.8%	17	7.6%	20	3.3%
Girls ^a	2	0.6%	3	8.3%	5	1.3%

Note: ASD = autism spectrum disorders.

^aSignificant differences between observed and expected values in a chi-square analysis (adjusted standardized residuals > 1.96).

For boys, the first ANCOVA examining differences in social preference revealed significant main effects of group, $F(1, 359) = 7.35, p = .007$, partial $\eta^2 = .020$, and participant roles, $F(4, 359) = 30.42, p < .001$, partial $\eta^2 = .253$, and a significant interaction of group by participant roles, $F(4, 359) = 2.70, p = .030$, partial $\eta^2 = .029$. The covariate, age, was not related to social preference. To understand the interaction term, two additional analyses were conducted. First, a series of five t tests (Bonferroni corrected $\alpha = .01$) was conducted to examine differences between groups for each role. Figure 1 shows the corresponding estimated marginal means for TD boys and boys with ASD, respectively. Boys with ASD received significantly higher social preference scores than TD students when classified as followers, $t(96) = -4.11, p < .001$, Cohen's $d = -.838$, and defenders, $t(46) = -3.30, p = .002$, Cohen's $d = -.972$. Second, two one-way analyses of variance (ANOVAs; Bonferroni corrected $\alpha = .025$) were conducted to evaluate differences in social preference across participant roles within each group. A significant main effect of participant role was found for both TD boys, $F(4, 197) = 16.81, p < .001, \omega = .238$, and boys with ASD, $F(4, 166) = 17.30, p < .001, \omega = .276$. Post hoc comparisons (Scheffé) showed that, irrespective of group, bullies and victims were significantly lower in social preference than followers and outsiders and that victims were also significantly lower in social preference than defenders. Among boys with ASD, bullies were also significantly lower in social preference than defenders.

The second ANCOVA explored variations in social impact across participant roles. Results indicated significant main effects of group, $F(1, 359) = 35.77, p < .001$, partial $\eta^2 = .091$, and participant roles, $F(4, 359) = 9.13, p < .001$, partial $\eta^2 = .092$, but no Group \times Roles interaction. The covariate, age, was not related to social impact. Figure 2 shows the corresponding means for TD

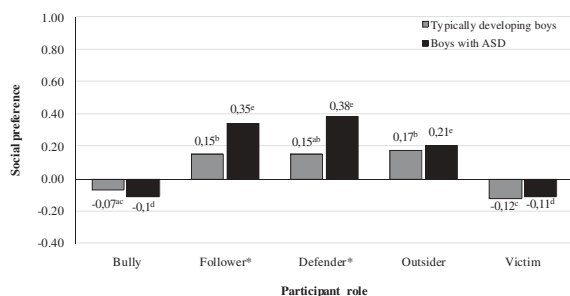


FIGURE 1 Estimated marginal mean levels of social preference per participant role for typically developing boys and boys with autism spectrum disorders (ASD). Note: Asterisk denotes significant differences in social preference between groups for each participant role at $p < .05$. Means having the same superscript are not significantly different at $p < .05$ with Scheffé's post hoc comparisons.

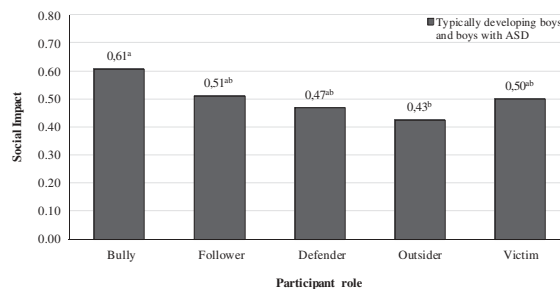


FIGURE 2 Estimated marginal mean levels of social impact per participant role for boys. Note: Asterisk denotes significant differences in social preference between groups for each participant role at $p < .05$. Means having the same superscript are not significantly different at $p < .05$ with Scheffé's post hoc comparisons. ASD = autism spectrum disorders.

boys and boys with ASD, respectively. Post hoc analyses (Scheffé) showed that boy bullies had significantly higher social impact scores than outsiders. A t test showed that, on average, boys with ASD ($M = .55, SD = .19$) had significantly higher social impact scores than TD boys ($M = .44, SD = .16$), $t(327) = -5.746, p < .001$, Cohen's $d = -.636$.

The final ANCOVA conducted on boys' popularity revealed a significant main effect of participant roles, $F(4, 359) = 73.81, p < .001$, partial $\eta^2 = .451$, and a significant interaction effect of group by roles, $F(4, 359) = 2.97, p = .020$, partial $\eta^2 = .032$. The covariate, age, was not related to popularity. To understand the interaction term, again two additional analyses were conducted. First, a series of five t tests (Bonferroni corrected $\alpha = .01$) was conducted to examine differences between groups for each role. Figure 3 shows the corresponding estimated marginal means for TD boys and boys with ASD, respectively. Results indicated that boy victims with ASD were significantly less unpopular than TD boy victims, $t(71) = -2.96, p = .004$, Cohen's $d = -.703$. Second, a series of two one-way ANOVAs (Bonferroni corrected $\alpha = .025$) were conducted, exploring differences in popularity across participant roles across the two groups. Significant main effects were found for participant roles among both TD boys, $F(4, 197) = 79.57, p < .001, \omega = .609$, and boys with ASD, $F(4, 166) = 18.14, p < .001, \omega = .286$. Post hoc comparisons (Scheffé) showed that, among TD boys, victims were perceived to be significantly more unpopular than any other role. Although less unpopular than victims, outsiders were more unpopular than bullies and followers. Bullies and followers were significantly more popular than defenders, outsiders, and victims. Among boys with ASD, victims were perceived to be significantly more unpopular than bullies, followers, and defenders but not outsiders. Outsiders were more unpopular than bullies and followers. Furthermore, followers were significantly more popular than defenders.

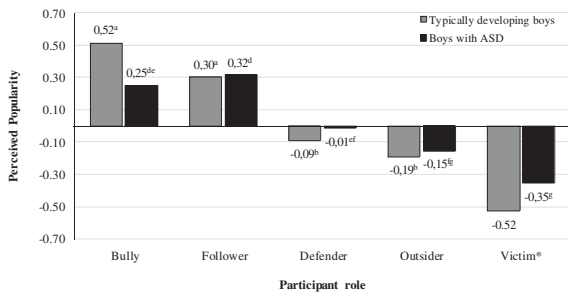


FIGURE 3 Estimated marginal mean levels of popularity per participant role for typically developing boys and boys with autism spectrum disorders (ASD). Note: Asterisk denotes significant differences in social preference between groups for each participant role at $p < .05$. Means having the same superscript are not significantly different at $p < .05$ with Scheffé’s post hoc comparisons.

For girls, the first ANCOVA examining differences in social preference revealed significant main effects of group, $F(1, 265) = 37.21, p < .001$, partial $\eta^2 = .123$, and participant roles, $F(4, 265) = 15.21, p < .001$, partial $\eta^2 = .187$, as well as a significant interaction of group by participant roles, $F(4, 265) = 2.81, p = .026$, partial $\eta^2 = .041$. The covariate, age, was not related to social preference. To understand the significant interaction term, two additional analyses were conducted using the roles that were sufficiently represented in the sample of girls with ASD (i.e., group size ≥ 5). Group sizes of the defender, outsider, and victim role were sufficiently large. However, group sizes were still relatively small, so the following results should be interpreted with caution. First, three t tests (Bonferroni corrected $\alpha = .017$) were run to examine differences between groups for each of the three roles. Figure 4 shows the corresponding means for TD girls and girls with ASD, respectively. No group differences in social preference were found for any of the roles. Second, two one-way ANOVAs (Bonferroni corrected $\alpha = .025$) were conducted to evaluate differences in social preference across participant roles within each group. A significant main effect of participant role was found for TD girls only, $F(4, 243) = 30.61, p < .001, \omega = .323$. Follow-up, post hoc comparisons (Scheffé) showed that victims were significantly lower and defenders were significantly higher in social preference than any other role. In addition, outsiders were significantly higher in social preference than followers.

The second ANCOVA examined variations in social impact across participant roles. Results indicated significant main effects of group, $F(1, 265) = 13.41, p < .001$, partial $\eta^2 = .048$, and participant roles, $F(4, 265) = 4.65, p = .001$, partial $\eta^2 = .066$, but no Group \times Roles interaction. The covariate, age, was not related to social impact. Figure 5 shows the means for each role across

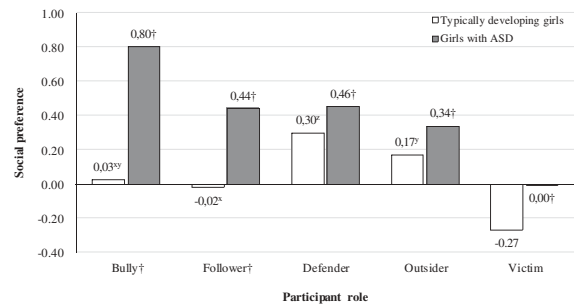


FIGURE 4 Estimated marginal mean levels of social preference per participant role for typically developing girls and girls with autism spectrum disorders (ASD). Note: Asterisk denotes significant differences in social preference between groups for each participant role at $p < .05$. Dagger denotes that follow-up tests could not be performed due to insufficient role representation. Means having the same superscript are not significantly different at $p < .05$ with Scheffé’s post hoc comparisons.

groups. Post hoc analyses (Scheffé) showed that girl defenders and victims had significantly higher social impact scores than outsiders. A t test showed that on average, girls with ASD ($M = .51, SD = .22$) had significantly higher social impact scores than TD girls ($M = .40, SD = .15$), $t(34) = -2.75, p = .010$, Cohen’s $d = -.942$.

The final ANCOVA conducted on girls’ popularity revealed significant main effects of group, $F(1, 265) = 4.01, p = .046$, partial $\eta^2 = .015$, and participant roles, $F(4, 265) = 16.34, p < .001$, partial $\eta^2 = .198$, but no Group \times Roles interaction. The covariate, age, was not related to social popularity. Figure 6 shows the corresponding means for each role across groups. Post hoc analyses (Scheffé) showed that victims were more unpopular than any other role. Although less unpopular than victims, outsiders were more unpopular than bullies, followers, and defenders. A t test did not show

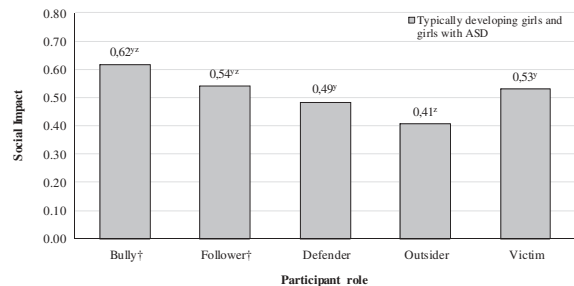


FIGURE 5 Estimated marginal mean levels of social impact per participant role for girls. Note: Dagger denotes that follow-up tests could not be performed due to insufficient role representation. Means having the same superscript are not significantly different at $p < .05$ with Scheffé’s post hoc comparisons. ASD = autism spectrum disorders.

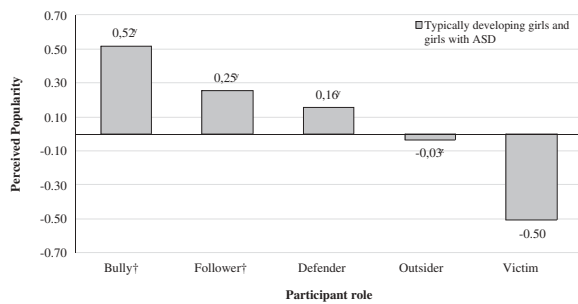


FIGURE 6 Estimated marginal mean levels of popularity per participant role for girls. *Note:* Dagger denotes that follow-up tests could not be performed due to insufficient role representation. Means having the same superscript are not significantly different at $p < .05$ with Scheffé's post hoc comparisons. ASD = autism spectrum disorders.

differences between groups in girls' average popularity scores.³

Secondary Roles

Although not the focus of this study, the possibility of secondary roles for both groups was investigated for boys and girls separately in order to clarify the significant difference in the prevalence of the unclassified role between TD students and students with ASD. For both boys and girls, the chi-square analysis indicated a significant difference between the two groups in the number of participant roles that students could be assigned to boys, $\chi^2(4) = 71.16$, $p < .001$, Cramér's $V = .343$; and girls, $\chi^2(3) = 20.31$, $p < .001$, Cramér's $V = .226$. There were significantly more TD students (45.8% boys, 30.3% girls) than students with ASD (16.1% boys, 5.6% girls) who could not be assigned any role. In addition, there were significantly more students with ASD who could be assigned to two (27.2% boys, 36.1% girls), three (14.3% boys, 8.3% girls) or even four roles (4.0% boys, 0% girls) than TD students (16.8% boys, 15.7% girls; 5.0% boys, 1.9% girls; and 0.3% boys, 0% girls, respectively).

DISCUSSION

The first aim of this study was to investigate whether the participant roles found in normative groups of adolescents in general education classrooms could also be found in groups of adolescents with ASD in special education classrooms and whether these roles were similarly distributed within these two groups. Results indicated that, like TD students (Goossens et al., 2006; Salmivalli, 1999; Salmivalli et al., 1996; Salmivalli et al., 1998), the majority of the students with ASD

could be assigned a participant role. Whereas bullying is considered a universal social phenomenon (Smith & Brain, 2000), the existence of participant roles in bullying situations might be considered universal as well. Apparently, the social difficulties of students with ASD do not prevent them from being perceived by peers as taking on various participant roles in bullying situations. This suggests that interventions based on the participant roles approach (Salmivalli, 1999) may be appropriate for students with ASD as well.

However, the distribution of the participant roles differed between groups and sexes. Among TD students, sex-specific participant role distributions were found, with boys being most frequently classified as uninvolved, follower, and victim and girls as defender and outsider. Although the hypothesized sex differences found in previous research (Camodeca & Goossens, 2005; Goossens et al., 2006; Monks et al., 2003; Salmivalli et al., 1996; Salmivalli et al., 1998) were not consistently found, these results suggest that among TD students, boys generally seemed to be perceived by peers to be somewhat more actively involved in the bullying process than girls.

Among students with ASD, no sex differences in role distributions were found. A possible explanation can be derived from group socialization theory (Harris, 2009). When classrooms contain (almost) no girls, there are no contrasting groups within the classroom based on sex. Specific sex role behavior might therefore be less salient, leading to more within-group differentiation based on boys' individual characteristics. That is, in boys-only classrooms one might expect boys to adopt any participant role, whereas in mixed classrooms sex-typical behavior patterns will be translated into the adoption of different participant roles for boys and girls (e.g., girls being defenders and boys being bullies). Students with ASD were most frequently classified as defenders and outsiders across sexes.

For boys with ASD, this implies differences with their TD counterparts: Boys with ASD were more often classified as defenders and outsiders and less often as followers than TD boys. Although TD students often fail to support the victim (Atlas & Pepler, 1998; Hawkins et al., 2001), boys with ASD in special education classrooms are perceived to be more likely to do so. It could be that students with ASD are more likely to adopt the defender role or to stay away from bullying because prosocial behavior is more explicitly valued in special education (Rodkin et al., 2006). Another possibility is that differences in role distributions are the result of the social difficulties that students with ASD face. For instance, students with ASD could adopt the outsider role more often because they do not know how to act even though they want to (Bauminger et al., 2003). Therefore, they might not undertake any action but staying away from the negative social situation. In contrast, the defender role might be adopted

more often, because students with ASD might not anticipate the potential costs of helping a victim (e.g., becoming picked on themselves). Because the current study assessed participant roles via reputational measures, more research is needed to examine both attitudes toward bullying and the actual frequencies of particular behaviors.

Irrespective of why students with ASD were classified more often as defenders and outsiders, these results seem encouraging, indicating that students with ASD are perceived by their peers as being somewhat less actively involved in the bullying process than TD students. This also seems promising for antibullying interventions, which try to make use of children in different participant roles to put bullying to an end (Salmivalli, 1999). Behaviors of outsiders may, for example, be easier to change than behaviors of active, initiative-taking bullies.

In contrast to these encouraging results, it was found that girls with ASD were more likely being classified as victims than TD girls. It could be that girls compose a minority group in special education and just being outnumbered by the boys could make them more vulnerable to victimization (Schumann, Craig, & Rosu, 2013). However, even though there were more victims identified among girls with ASD than among TD girls, victimization rates of both boys and girls with ASD attending special schools or schools with special classrooms for students with ASD were lower than those reported among students with ASD in general education (Little, 2001; Rose et al., 2009; Rose et al., 2011). Yet the difference in prevalence and the respective possible explanation should be interpreted with caution because of the limited number of girl victims with ASD.

Finally, students with ASD were more often “unclassified” and TD students were more often classified as uninvolved. Both results might be related to the same explanation. Operationally, categorization of students as “unclassifiable” reflected peer nominations for multiple roles rather than a single role. Given that special education classrooms consisted of fewer students, students with ASD might take on multiple roles more frequently (i.e., different roles in different situations) than their TD peers who reside in larger classrooms. If students take on different roles in different bullying situations, they logically would be nominated for multiple behavioral descriptions, resulting in more multiple roles and a higher percentage of unclassified students. In larger regular education classrooms, students probably will be nominated only if they stand out on the behaviors described, resulting in more singular roles, more uninvolved students, and fewer unclassified students. The supplementary analysis indeed showed this.

The second aim of the study was to examine relationships between the participant roles and social status. In addition, possible sex differences were explored. For the bully and victim role, consistent associations with social status were found across groups and sexes. In line with

previous research (Boivin & Hymel, 1997; Caravita et al., 2010; De Bruyn & Cillessen, 2006), bullies were not well liked but were considered highly popular by their peers, whereas victims were disliked and unpopular. This indicates that among both groups, bullies enjoy a high degree of social status, despite the fact that they are generally disliked, whereas victims are a distinct group of students of low social status, leaving them vulnerable and without peers to protect them from bullying.

For the defender role, the associations with social status differed by group and sex. Whereas consistent with previous research (Caravita et al., 2010; Salmivalli et al., 1996), girl defenders (both TD and with ASD) and boy defenders with ASD are highly liked, TD boy defenders are average in social preference. Among TD students, defenders are suggested to be more accepted by peers either because they address bullying in prosocial ways (see Newcomb et al., 1993; Rubin, Bukowski, & Parker, 1998; Salmivalli et al., 1996) or because their high social status enables defending victims (Caravita et al., 2010; Salmivalli et al., 1996). The interpretation that addressing bullying in prosocial ways is related to being well liked might be more characteristic of girls because girls are expected to reject violence and to act unaggressively (Camodeca & Goossens, 2005). Yet, as prosocial behavior is more explicitly valued (Rodkin et al., 2006) and sex-typical participant role assignment is less prominent in special education, that interpretation might be characteristic of boys with ASD too.

Clear associations between other participant roles and social status measures were not expected, as previous research has shown inconsistent results. Although differences between groups and sexes were found with respect to the social preference of outsiders, outsiders were consistently found to have lower social impact and lower popularity across groups and sexes. Outsiders were less unpopular than victims, however. Passivity and social withdrawal have been associated with low popularity (Lease et al., 2002; Rubin et al., 1998), and such behavior may well characterize outsiders, as well as victims of bullying. It seems that “outsider behavior” is related to lower social impact and lower popularity among both groups.

The follower role, in contrast, was consistently associated with high impact and high popularity across groups and sexes, whereas inconsistent results were found with respect to social preference. Boy followers were quite well liked, whereas girl followers were neither liked nor explicitly disliked. Although boy followers did not receive low social preference scores like bullies, they resembled bullies with respect to their high popularity in both special and general education contexts. Because followers do not show active, initiative-taking antisocial behavior that is characteristic of the bully, but “merely” join in or passively encourage the bullying, they might not be as distinctly disliked by peers. Yet researchers have shown that among TD adolescents, aggressive behavior plays an important role in gaining and maintaining popularity in the peer group (LaFontana & Cillessen, 2002), especially among boys

(Cillessen & Mayeux, 2004). Although this pattern might be more characteristic of the bully role, followers might try to increase their popularity by affiliating with popular bullies (Salmivalli et al., 1997).

Strengths, Limitations, and Implications for Practice

The major strength of this study is that it is the second study to examine bullying among adolescents with ASD, extending the literature by exploring participant roles that students adopt within segregated special education classrooms. This study is limited in its reliance on peer reports for participant roles and social status measures for several reasons. First, we did not assess students' understanding of the concept of bullying, and it has been found that students' definitions of bullying differ from the definition often used by researchers (Vaillancourt et al., 2008). That is, students mainly focus on negative behaviors, whereas researchers focus on three definitional criteria—repetition, power imbalance, and intentionality. Vaillancourt et al. (2008) found that the provision of a definition led to lower self-reported victimization rates among students and higher self-reported bullying rates among boys as compared to students who were not provided with a definition, yet they advocate that providing a definition of bullying likely increases precision in measurement. Therefore, we provided the students with an extended definition to make it clear what is being measured. Second, we do not know whether students with ASD provide equally accurate peer reports as TD adolescents. Van Roekel et al. (2010) showed that adolescents with ASD were equally able to perceive and report on bullying in video fragments as TD adolescents. We assumed that because we used concrete behavioral descriptions, the adolescents with ASD provided equally accurate peer reports as TD adolescents. Yet it is not known whether students with ASD are equally able to perceive and report on bullying situations that they participate in themselves. Investigating how students with ASD perceive bullying in real-life situations would therefore be an interesting topic for future research. Third, with peer-reported data it can only be examined how students are perceived by their peers as being involved in bullying. Directions for future research would be to include direct observations of behavior to validate the peer perception measures among students with ASD and to document the behavioral characteristics of students with ASD and TD students who are classified in the same participant roles. Fourth, students with ASD were in smaller classrooms than TD students, which might have affected role assignment and proportion scores for social status measures. Applying the same 20% role assignment criterion to both groups might result in producing too many false positives among students with ASD. However, as students with ASD are particularly vulnerable to both bullying and victimization (Rose et al., 2009; Rose et al., 2011), producing too many false positives, possibly resulting in more students being enrolled in antibullying interventions,

does not seem as detrimental as producing too many false negatives. In addition, receiving one more nomination for the social status measures led to higher increases in proportion scores for students in smaller classrooms than for students in large classrooms. Examining how classroom size affects peer-reported social status measures in small classrooms and investigating which assignment criterion to apply would be interesting topics for future research.

Another limitation is the sex distribution in the sample, with diagnoses of ASD being more prevalent among boys than among girls (Fombonne, 2005). Our subgroup of girls with ASD was too small to compare TD girls with girls with ASD and to draw conclusions about the associations between the various participant roles and social status measures among girls. Future research would benefit from a more in-depth consideration of variations across boys and girls in larger samples. Also, the students with ASD who participated in our study were significantly older than their TD peers. Although we controlled for this age difference in our main analyses, age could not be controlled for in all follow-up analyses. Yet age differences have been found in other studies as well (Ledoux & Roeleveld, 2010; Ledoux, Roeleveld, Langen, & Smeets, 2012). It has been suggested that students in special education cognitively perform worse than their TD peers because of the psychiatric and/or social-emotional problems they are facing. Many students with ASD lose a school year because of the transition from regular education to special education, or just because they need relatively more time to finish their education. It is plausible that these factors also apply to the sample of students with ASD. However, these possible confounding variables reflect real differences between the educational contexts, and as the focus of our study was to make a comparison that would be as ecologically valid as possible, these variables confirm the ecological validity of our study.

Of additional interest in future research would be efforts to distinguish individual (personal) and contextual (school) factors in understanding the social experiences of students with ASD. In the present study, it is insufficiently clear whether the differences observed are attributable to the disorder or to the segregated setting in which the participants were educated (Rose et al., 2009) and/or to other factors that vary across both educational contexts. Besides, differences could exist between the group of students with ASD who attended schools for special secondary education and the group of students with ASD who attended schools with special classrooms for students with ASD. For example, the social interactions of the latter group do not have to be exclusively limited to their classmates with ASD because they might interact with other peers during breaks, in between classes, and/or before and after school. Examining the perpetration and victimization of students with ASD in schools where they also have the opportunity to interact with TD students or students with other

psychological and/or behavioral problems is an interesting topic for future research.

Several implications for practice can be derived from this study. First, although more research is needed to validate the peer perception measures among students with ASD, the fact that the participant roles were also found among students with ASD seems to suggest that interventions based on the participant roles approach (Salmivalli, 1999) may be appropriate for students with ASD as well. Second, the associations between participant roles and social status found among students with ASD resemble those often found among TD students. This suggests that bullying is a complex social process in this special population as well, even though students with ASD find social understanding particularly difficult (Baron-Cohen, 2000; Haxe et al., 2010; Heerey et al., 2005). Third, it is encouraging that students with ASD appear to be perceived by their peers as being somewhat less actively involved in the bullying process than TD students by staying away from bullying situations (i.e., outsiders) or by even trying to stop bullying (i.e., defenders) more often. In addition, outsiders, but defenders in particular, are well liked among students with ASD. This could indicate that students with ASD value prosocial behavior, and this might provide chances to make use of children in the different participant roles to put an end to bullying by helping them to change their behavior. On the other hand, the difficulties in social understanding that students with ASD face might pose additional challenges when trying to establish behavioral change. Fourth, even though there were more victims identified among the girls with ASD than among TD girls, victimization rates of both boys and girls with ASD who attend special schools or schools with special classrooms for students with ASD were lower than those reported among students with ASD in general education settings (Little, 2001; Rose et al., 2009; Rose et al., 2011). We agree with Van Roekel et al. (2010) that for adolescents with ASD who get victimized in a general education classroom, a transition to special education or a special classroom for students with ASD could lead to a decrease in victimization. Finally, more research should focus on special populations. There is high variability in the prevalence of bullying and victimization across different special needs populations (Little, 2001; Rose et al., 2009; Rose et al., 2011; Van Roekel et al., 2010). The distribution of participant roles across populations could shed more light on these differences.

Notes

1. After attending elementary education, Dutch children directly go to secondary education. Secondary education is divided in streams for different educational levels, ranging from practical training (*PRO*) and different streams of preparatory vocational

secondary education (*VMBO*) to university preparatory education (*VWO*). *PRO* and *VMBO* last 4 years and differ in the ratio of practical vocational training and theoretical education in languages, mathematics, history, arts, and sciences. *VWO* lasts 6 years. Students follow the same theoretical subjects in the first 3 years, after which they specialize by choosing subject clusters. For more information on the Dutch education system, see <http://www.government.nl/issues/education>.

2. Our research population encompassed secondary school students in regular and special education, with ages varying from 11 to 18. In order to be clear and concise, throughout the paper we consistently use the terms adolescents for all participants and boys and girls for male and female participants, respectively, despite varying ages.
3. Based on one of our anonymous reviewer's concern about the relatively large age range, we also conducted all our analyses on a subsample of students ages 12 to 16 to see whether these results would differ from what we found when we used the full age range of 11 to 18 years. The subsample contained 730 TD students (372 boys, 358 girls) and 247 students with ASD (213 boys, 34 girls). When applying the same criteria to the analyses for the sample containing only students ages 12 to 16 (i.e., conventional alpha levels for the univariate ANOVAs and Bonferroni corrected alpha levels for the follow-up *t* tests and one-way ANOVAs), the same results were found as when conducting the analyses on the sample including the full age range, except for girls' perceived popularity, in which no significant main effect of group was found.

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