

# Self-Concept and Social Status of Accelerated and Nonaccelerated Students in the First 2 Years of Secondary School in the Netherlands

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This study examined the self-concept and social status of accelerated and nonaccelerated students in their first 2 years of secondary school in the Netherlands. In 357 students from 18 secondary schools, we measured self-concept, sociometric status, and behavior reputations at three times. Accelerated students had more positive self-concepts concerning school in general and mathematics than nonaccelerated students, but a less positive social self-concept. In girls but not in boys, the difference in social self-concept of accelerated and nonaccelerated students was no longer present at the end of the 2nd year. Accelerated students had a lower social status than nonaccelerated students and were considered to be less cooperative, humorous, helpful, leading, and social. Peer ratings were more negative for accelerated boys than for accelerated girls. Implications for the education of accelerated students, including the social emotional development of accelerated students in their 1st years of secondary school, are discussed.

**Putting the Research to Use:** In this study, we found that accelerated students have a more positive academic self-concept than their nonaccelerated classmates. We also found, however, indications that accelerated students, especially boys, in their first two years in secondary school (Grades 7 and 8 in the U.S. secondary educational system), have a more negative social status than their classmates. Many empirical studies and practitioners' experiences with gifted students point at the benefits of acceleration and the negative consequences of not accelerating a child. So, to abolish acceleration is not a realistic option. We should, however, take into account that accelerated students might have a more negative social status than their classmates. Knowledgeable teachers, with a positive attitude toward accelerated students, should be alert about possible prejudices of classmates and should aim for an accepting, tolerating climate in the classroom.

**Keywords:** *self-concept; social status; academic acceleration; secondary school*

Because academic acceleration in primary school (in the form of early entrance or grade skipping) becomes more and more popular (Hoogeveen, 2000; Mönks & Pflüger, 2005; Reyero & Tourón, 2003), an increasing number of students who enter secondary school are younger than their classmates. Many people, especially educators and also parents, express their concerns about the implications of acceleration for children's cognitive development and academic achievement and for their social and emotional adjustment and well-being (e.g., Heinbokel, 1997; Reyero & Tourón, 2003; Southern & Jones, 1991a). Teachers and parents appear

particularly worried about accelerated students' social and emotional adjustment (e.g., Hoogeveen, van Hell, & Verhoeven, 2005; Southern, Jones, & Fiscus, 1989). They tend to assume that accelerated students' social and emotional maturity is related to their chronological age rather than to their mental age (Robinson, 2004; for evidence against this assumption see, for example, Robinson & Noble, 1992) and are afraid that the accelerated students will experience social and emotional problems at some point later in their school career. This is worded by a 51-year-old history teacher of a Dutch secondary school: "They will behave as solitaires, isolated,

having problems to socialize, behaving as little professors” Although the quotation is part of the collected data of the research, described in Hoogeveen et al., (2005), it is not cited in that article. (from corpus reported in Hoogeveen et al., 2005).

The moot question is, to what extent such worries about the anticipated harmful effects of acceleration are substantiated by empirical research? Studies on the cognitive and academic effects of acceleration generally report (strong) positive effects on academic achievement and educational career (for a review, see Kulik, 2004). Studies on the social and emotional effects of acceleration, though considerably smaller in number, also find no clear evidence that being younger than one’s classmates is associated with major social or psychological difficulties (Kulik, 2004; Robinson, 2004). In contrast to the overwhelmingly positive effects of acceleration on academic performance, findings on emotional and social effects of acceleration are less conclusive and more mixed, and vary from small negative effects to no effects to small positive effects (see for reviews, Cornell, Callahan, Bassin, & Ramsay, 1991; Kulik, 2004). In his discussion of the results of three meta-analytic studies on acceleration, Kulik (2004) concluded that the findings of the four studies on emotional and social effects of acceleration included in these meta-analyses are fragmentary. These studies found nil or small negative effects of acceleration on self-acceptance and personal adjustment (Cornell, Callahan, & Loyd, 1991; Robinson & Janos, 1986). Proctor, Black, and Feldhusen (1986) showed that children who were admitted to primary school at an earlier age (early entrants) had strong positive self-concepts; showed no emotional, social, and personality maladjustments; and were as well accepted and as popular as other, nonaccelerated students. In a recent study on the socioaffective impact of early entrance, Gagné and Gagnier (2004) also found no substantial differences in adjustment between early entrants and regularly admitted children (although teachers tended to rate early entrants as less well adjusted than their classmates). In their study of accelerated eighth-grade students, Sayler and Brookshire (1993) reached a similar conclusion. They found that accelerated students display levels of emotional adjustment and feelings of acceptance by others that are higher than those of regular students and are comparable to those of older students identified as gifted. Richardson and Benbow (1990) studied self-reported psychosocial indices of gifted students at ages 18 and 23 years and found no differences between accelerated and nonaccelerated students in their self-esteem, internal locus of control, self-acceptance, self-identity, or self-reported social interactions.

With respect to the studies on the effects of acceleration on gifted students’ social emotional development, two aspects have been widely cited as important: self-concept and emotional well-being. The relevance of these two variables will now be discussed.

## Self-Concept

It is widely acknowledged that self-concept has a considerable impact on the academic and social performance of a person. Several definitions of the term *self-concept* exist in the literature (see Byrne, 1996) of which the majority assumes that self-concept is a multidimensional concept (e.g., Swann, Chang-Schneider, & McClarty, 2007). In this study, we follow Shavelson, Hubner, and Stanton’s (1976) classical self-concept model, in which self-concept is conceptualized as a person’s self-perceptions that are formed through experiences with and interpretations of the environment. According to Shavelson et al., self-concept is multidimensional and hierarchical. The global or composite self-concept is composed of academic self-concept and nonacademic self-concept. The academic self-concept is subdivided according to different academic areas. The nonacademic self-concept is subdivided into social self-concept, emotional self-concept, and physical self-concept. Based on the Shavelson et al.’s model, Marsh developed the widely (but not exclusively) used self-description questionnaire (SDQ) to measure the multiple dimensions of self-concept.

Studies that investigated the self-concept of accelerated students show mixed findings. Sayler and Brookshire (1993) examined eighth-grade students and compared accelerated (hence, younger) students with students in gifted classes and in regular classes. Using a 6-item composite scale as a measure of global self-concept, they found that both the accelerated students and the students in gifted classes had a higher global self-concept score than the students in regular classes. In her narrative description of the school histories of five radically (three grades or more) accelerated children, Gross (1992) reported that these children display positive but moderate scores of self-esteem (as measured by the Coopersmith Self-Esteem Inventory). In a later study of students in selective high schools for academically gifted students in Australia, Gross (1996) found that accelerated students had a higher self-concept than nonaccelerated students. Other researchers, however, observed no differences in self-concept or self-esteem of accelerated and nonaccelerated students. Swiatek and Benbow (1991) found no difference between the self-concept of accelerated and ability-matched nonaccelerated

students, as measured by a 6-item self-esteem scale at least 5 years after acceleration had taken place. Lupkowski, Whitmore, and Ramsay (1992) observed no differences in the self-esteem scores (measured by the Coopersmith Self-Esteem Inventory) of early college entrants before and after their first semester in college. Likewise, Robinson and Janos (1986) observed that the psychosocial adjustment of early university entrants was comparable to equally gifted peers who were still in high school and regular-aged university students.

The contradictory findings of researchers examining the effect of acceleration on self-concept may be related to the definition and measurement of self-concept. The majority of studies tested students' global or composite self-concept, although most theories assume that self-concept is a multidimensional concept. In a meta-analysis on the self-concept of gifted children, Hoge and Renzulli (1993) found that gifted children had slightly higher self-concept scores than average children, but a breakdown by five types of self-concept scores showed that different results were obtained for the five self-concept types. Gifted children had more positive academic and a slightly more positive global/composite self-concept than average children. Gifted children's social self-concept was not different from that of average children, but their physical self-concept was more negative than that of average children.

A possible explanation for this finding can be found in the big-fish-little-pond effect (BFLPE), presented by Marsh (1987). Studies examining self-concept of academically advanced students in programs in gifted education (for a review and meta-analyses, see Hoozeveen, van Hell, Mooij, & Verhoeven, submitted) tend to show a decrease in gifted students' self-concept once they are enrolled in a specific type of gifted education. The decreased self-concept of students in special educational programs for gifted children may be related to the BFLPE (Marsh, 1987): Students compare their achievements with those of their classmates. If gifted students compare themselves with average intelligent students in their normal classroom situation, their self-concept will be more positive than when they compare themselves with other gifted students participating in the special educational program. Marsh and Hau's (2003) extensive cross-cultural research on this effect demonstrated the generalizability of the theory. Like students participating in a special program for gifted students outside their regular classroom (e.g., a pullout program), accelerated students are designated as academically advanced (by the very fact of being accelerated) and are pulled out of their original class. Being in a higher grade with older students, they will now compare

their social behavior with older and (physically) more mature students, which may lead to a lower physical self-concept, as found by Hoge and Renzulli (1993). This means that the global self-concept measures used in many earlier studies on accelerated students' self-concept may be conflated by the multidimensional character of self-concept. For example, a net outcome of no difference between accelerated and nonaccelerated students in their global self-concept may actually reflect that accelerated students have a more positive academic self-concept but a lower physical self-concept than nonaccelerated students.

To gain more insight into the self-concept of accelerated and nonaccelerated students in the different domains, we used the SDQ as developed by Marsh (1990) that measures multiple dimensions of self-concept.

## Social Status

Peers have a profound influence on children's behavior and development. A child's social status among peers affects his or her social and emotional development (e.g., Newcomb, Bukowski, & Pattee, 1993). Children who are actively disliked or rejected by their peers are at risk for developing problems in different areas, including academic achievement (e.g., Parker & Asher, 1987; Wentzel & Asher, 1995); social relations and interactions (e.g., Patterson, Kupersmidt, & Griesler, 1990); mental health, for example, loneliness (e.g., Cassidy & Asher, 1992); social anxiety (e.g., Inderbitzen, Walters, & Bukowski, 1997); or depression (e.g., Boivin, Poulin, & Vitaro, 1994).

Although intellectually advanced children tend to be socially and emotionally advanced as well (e.g., Neihart, Reis, Robinson, & Moon, 2002; Richardson & Benbow, 1990; Robinson, 2004), parents and teachers often express concerns about accelerated students' social interactions and relations with their older classmates. Conceivably, factors other than accelerated students' actual social behavior may be at work in determining their social status in a group.

Only a few studies are reported in the literature that examined the social status or peer interactions of accelerated students. Richardson and Benbow (1990) asked adults at the ages of 18 and 23 years to indicate on a 5-point scale the degree to which their acceleration in elementary or secondary school affected their ability to get along with age mates, mental peers, adults, and their social life. According to Richardson and Benbow, these self-reports indicated that acceleration had no effect on their social interactions. Sayler and Brookshire

(1993) also asked for self-reports on peer relations in their study of accelerated students, students in gifted classes, and students in regular classes, all in eighth grade. They found that accelerated students said that peers considered them to be good students more often than students in regular classes did, but less often than students in gifted classes did. Accelerated students reported they were less likely to be seen as troublemakers by their peers than regular students did. Accelerated students reported being seen as popular, athletic, and important by their peers equally often as the students in regular classes, but not as often as the students in gifted classes. These findings corroborate with a narrative description of the school histories of five radically (three grades or more) accelerated children by Gross (1992), who observed that these children were well accepted by their peers and had close and productive social relationships.

It is remarkable that the studies on peer relations and social status of accelerated children we just discussed are all based on accelerated students' self-reports, measuring how accelerated students think others perceive them. Because these studies reflect only the accelerated student's perspective on social interactions, they provide one-sided insight into accelerated students' social relations. These self-reports remain silent on how peers actually perceive accelerated students. In fact, as Saylor and Brookshire (1993) noted, such self-reports are more indicative of students' self-concept than of their social status among peers. One methodology that reflects peers' perceptions of the social status of an individual is the sociometric method.

Sociometric methods are widely used and approved tools to measure children's social status among peers (Jiang & Cillessen, 2005). This methodology measures a person's status in the peer group using procedures for peer nomination or peer rating (for more details, see Jiang & Cillessen, 2005; Newcomb et al., 1993). In the classic two-dimensional peer nomination approach, each child in a classroom is asked to nominate peers whom he or she likes most or least. A child's sociometric status is calculated by counting the nominations he or she received and can be further classified into different sociometric status groups (see Table 1 and Methods section for details on the classification procedures). In one frequently used sociometric variant, four continuous dimensions of social status are obtained: acceptance (reflecting a child's attractiveness to peers via the number of positive nominations), rejection (reflecting a child's negative nominations), social preference (reflecting the relative extent to which children are liked or disliked), and social impact (reflecting social salience, or

the relative degree to which children are noticed by their peers). A second, related, variant emphasizes the type of social status children may hold in their peer group and classifies children into one of five different sociometric status groups: popular, rejected, neglected, controversial, or average. By definition, popular children are frequently nominated as liked most and are rarely disliked by their peers. Rejected children are infrequently nominated as liked most but are frequently nominated as liked least. Neglected children are infrequently nominated as liked most but are also not disliked by their peers. Controversial children are both frequently nominated as liked most and as liked least. Finally, average children are those who do not fit into one of the four extreme-status groups.

Newcomb et al. (1993) performed a meta-analysis to evaluate behavioral differences among groups of children who have been categorized into these five sociometric status groups. They found that popular, rejected, neglected, and controversial children, when compared to average children, had distinct behavioral repertoires that influenced the quality of their social relations. Popular children demonstrated higher levels of sociability (e.g., positive social actions, positive traits, friendship skills) and lower levels of aggressive (e.g., disruptive, negative) behavior and withdrawal (e.g., loneliness). In contrast, rejected children demonstrated less sociable, more aggressive, and more withdrawn (i.e., depressive and anxious) behavior. The neglected children showed only a few, and small, behavioral differences from the average children: They showed somewhat less aggressive and less sociable behavior. Finally, the controversial children demonstrated not only higher levels of aggressive behavior (like the rejected children) but also higher levels of sociable behavior (like the popular children).

The sociometric method has been successfully applied to gain insight into the social status of exceptional children, including students with disabilities (e.g., Ochoa & Olivarez, 1995; Sale & Carey, 1995), children with autism (e.g., Campbell, Ferguson, Herzinger, Jackson, & Marino, 2005), or academically gifted children (Farmer & Rodkin, 1996; Norman, Ramsay, Roberts, & Martray, 2000). However, to our knowledge, this methodology has not been applied to examine accelerated students' social status among peers.

## Acceleration in the Netherlands

Children in the Netherlands enter kindergarten at the age of 4 years. Kindergarten, spanning 2 years, is



**Table 1**  
**Criteria of the Five Sociometric Status Types**

Status Type	Criteria
Popular	$z$ Preference $> 1$ and $z$ Acceptance $> 0$ and $z$ Rejection $< 0$
Rejected	$z$ Preference $< -1$ and $z$ Acceptance $< 0$ and $z$ Rejection $> 0$
Ignored	$z$ Impact $< -1$ and $z$ Acceptance $< 0$ and $z$ Rejection $< 0$
Controversial	$z$ Impact $> 1$ and $z$ Acceptance $> 0$ and $z$ Rejection $> 0$
Average <sup>a</sup>	$-1 < z$ Impact $< 1$ and $-1 < z$ Preference $< 1$

a. All children that do not fit one of the four extreme status groups.

obligatory and is integrated with primary school, which spans 6 years. If they do not repeat years or accelerate, after 6 years of primary school, students enter secondary school, typically at the age of 12 years. They can enter different levels of schooling, depending on the advice given by primary school. Many primary schools examine their students with a national test in the last grade of primary school. Early entrance in kindergarten is not allowed in the Netherlands. Early entrance in Grade 1 (i.e., 1st year of primary school) and acceleration throughout primary school are allowed. Most schools do not have a strict policy concerning the acceleration of students. Whether or not a student is accelerated depends on teachers' opinions (I do not know what else to do) or the parents' request (but only if school teachers and school management agree). However, recently, more and more schools are using an acceleration scale (Hoogeveen, van Hell, & Verhoeven, 2003), an instrument that helps in making the decision whether to accelerate a student or not.

In this study, we did not address the question whether it is advantageous for gifted students to accelerate, despite the importance of that question (see Hoogeveen, van Hell, & Verhoeven, (submitted 2008), in which we address this question). Rather, in this study we examined the effects of acceleration in primary school on the development of self-concept and social status in secondary school of students in the Netherlands. Following a longitudinal design, we examined the self-concept and social status among peers of accelerated (probably gifted) students in comparison with their nonaccelerated classmates. To the best of our knowledge, accelerated students' self-concept has not been studied in combination with their social status among peers. Moreover, the longitudinal setup of our study on accelerated students' self-concept and social status will provide insight into the social and emotional consequences of acceleration over an extended period of time.

## Method

### Participants

Using data from the Center for the Study of Giftedness (CBO) of the Radboud University Nijmegen and putting calls in magazines for parents of gifted children, we traced accelerated children in their last year of primary school (United States: sixth grade) and asked their parents for cooperation. The future secondary schools of the participating children were also asked for cooperation. We do not have evidence that the decision to accelerate these students was due to the recognition of their giftedness; however, generally speaking, Dutch students are accelerated only if they perform very well in school or after their giftedness has been officially diagnosed. In the following school year, questionnaires were sent to these schools in the first and the last month of the academic year, to be filled in by students in the 1st year of secondary school (United States: seventh grade). A total of 998 students (of which 131 or 13.10% had been accelerated) who attended 36 first classes of 30 Dutch secondary schools filled in the questionnaires. To enlarge the accelerated group, we not only included the students we had initially selected but also their accelerated classmates. All students who did not reach the age of 12 years on the 1st of October in their 1st year of secondary school were considered as accelerated students. One year after the second measurement, we approached the same schools, asking for their cooperation once more. The accelerated students of the first two measurements and their classmates, who were now in the last month of the 2nd year (United States: eighth grade), completed the same questionnaires once again. A total of 357 students filled in the questionnaires at all 3 measurement moments. This group of 357 students was comparable to the first group of 998 students in terms of school type and gender. The data reported in this article are from these 357 students who attended 20 first classes of 18 Dutch secondary schools in 17 towns and cities spread over the Netherlands. Classrooms size varied from 17 to 31 students ( $M = 27.10$ ,  $SD = 3.67$ ). The amount of accelerated students in a class varied from 1 to 5 ( $M = 2.60$ ,  $SD = 1.50$ ), in percentages from 3.33% to 18.53% ( $M = 9.73$ ,  $SD = 5.34$ ). Furthermore, 53 students (31 boys and 22 girls) had been academically accelerated during primary school, and 11 of them (7 boys, 4 girls) accelerated more than once. The total amount of accelerants in the final data set (participants who filled in questionnaires all 3 times) was 14.85% of the participants,

so the response rate for accelerated students was comparable to the response rate in the complete data set at the first measurement, which was 13.10%. The mean age of the accelerated students at the first measurement was 11 years and 5 months ( $SD = 0.50$ ; Range = 9 years, 8 months to 12 years, 0 months). The mean age of the nonaccelerated students (162 boys, 141 girls) at the first measurement was 12 years and 7 months ( $SD = 0.31$ ; Range: 12 years, 0 months to 13 years, 10 months).

## Materials

*Self-concept.* The Dutch translation (Peters, 1998) of the SDQ = II (Marsh, 1990) was used to measure the self-concept of the participants. The SDQ-II is based on Shavelson et al.'s multifaceted self-concept model (Shavelson et al., 1976). The instrument consists of 102 statements (e.g., I often need help in mathematics). Students give their answer on a 6-point scale (1 = false, 2 = mostly false, 3 = more false than true, 4 = more true than false, 5 = mostly true, 6 = true; Marsh, 1990). Half the items are negatively worded to prevent positive response biases. The SDQ-II comprises 11 subscales, listed in Appendix A, and each scale is measured by 8 to 10 items. A higher score on a subscale represents a more positive self-concept. The summed score of the subscales indicates the total score (Marsh, 1990). Reliability of the different scales of the SDQ-II as measured by Cronbach's alpha varies from .83 to .91. The validity is also proved to be high (Marsh, 1990). The reliability of the different scales of the Dutch translation of the SDQ-II is comparable to that of the original version, with Cronbach's alpha ranging from .73 to .90 (Peters, 1998). In this study, we concentrate on the total Self-concept, the subscales general self-concept, academic self-concept (mathematic, verbal, and school), social self-concept (same-sex relations, opposite-sex relations), and physical self-concept (physical abilities, physical appearance).

*Social status and reputations.* We used the classic sociometric technique advanced by Coie, Dodge, and Coppotelli (1982) and Coie and Dodge (1983). We asked each student to name three classmates whom he or she likes most and then to name three classmates whom he or she likes least.

In addition to the sociometric questions, the questionnaire contained 10 behavior reputation descriptions (see Appendix B) as constructed by Van Boxtel (1992), based on a much longer list of Coie et al. (1982). Van Boxtel used discriminating capacity as the most important criterion in selecting the items. Items were formulated as positive or negative. For each behavior description, students were asked to

nominate three of their classmates who fitted best with the given description.

## Procedure

Participation of schools implied that the accelerated student and all his or her classmates would complete two questionnaires in September and in June of the following year. A year later, the participating schools were asked again to let the same students, who were now at the end of their 2nd year of secondary school, fill in the same two questionnaires.

Thirty Dutch secondary schools responded positively. These schools received letters addressed to the parents of the participating students. Parents who did not want their child to participate were asked to report this to the coordinator in the school and to ask for excluding these children from the investigation.

In September, the first month of the Dutch academic year, the SDQ-II and the sociometric questionnaire were sent to the participating schools with instructions for the teacher who handed out the questionnaires. These teachers decided when, in the month of September or October, the questionnaires were handed out to the students. The two questionnaires were filled in succession during one lesson. In June, the last month of the academic year, the same questionnaires were filled in. The third time the students filled in the questionnaires was a year later, when they were at the end of the 2nd year at secondary school.

## Scoring

SDQ data were scored according to the 11 scales presented by Marsh (1990). One-way analyses of variance (ANOVA) were conducted on the perceived raw scale scores to determine whether significant variations occurred among the different classes. Separate ANOVAs on each of the self-concept scores revealed significant differences on different dimensions. Consequently, the self-concept scores were standardized by class.

The sociometric questions were analyzed on item level. Acceptance scores were obtained by counting the number of times a student was positively nominated (liked most) by classmates and standardizing the resulting scores in the reference group (class). Likewise, rejection scores were obtained by counting the number of times a student was negatively nominated (liked least). Behavior reputation scores were obtained by counting the number of times a student was nominated as representative for a particular behavior reputation. These scores were also standardized within the reference group (class). We used Coie

et al.'s (1982) standard score approach and standardized by class by converting the acceptance and rejection scores into  $z$  scores for each class. Social impact and social preference were derived from these acceptance and rejection scores. Social impact is the standardized sum of acceptance plus rejection (Social Impact =  $z$  Acceptation +  $z$  Rejection), whereas social preference is the standardized difference of acceptance minus rejection (Social Preference =  $z$  Acceptation –  $z$  Rejection).

These dimensions were used to assign the students to one of the five sociometric status groups: popular, rejected, neglected, controversial, and average (Coie et al., 1982; Coie & Dodge, 1983). The specific criteria for classification, using Coie and Dodge's standard score approach, are presented in Table 1.

Multivariate analyses were used to investigate self-concept, social status, and behavior reputation of the accelerated students in their 1st and 2nd year of secondary school, taking gender into account and to compare them with nonaccelerated students.

## Results

Repeated-measure ANOVAs with acceleration (accelerated or nonaccelerated) and gender (male or female) as between-subjects factors and time of measurement (beginning and end of the 1st year and as end of the 2nd year in secondary school) as the repeated measure were carried out on the self-concept, social status, and behavioral reputation data. Because of the relatively small number of accelerants who accelerated two grades or more (11 students), we did not differentiate between students who accelerated one grade or more grades.

### Self-Concept

Table 2 lists the self-concept data, that is, the eight SDQ-II subscales we focused on in this study and the total self-concept, at the three measurement times. Table 3 lists all results of the repeated measures analyses.

*Total self-concept.*<sup>1</sup> The three-way interaction effect between acceleration, gender, and time of measurement was not significant. The two-way interaction effect between gender and time of measurement was marginally significant (see Table 3). Table 2 shows that the total self-concept of boys increased between the first and second measurement, whereas the total self-concept of girls increased between the second and third measurement—test of within-subjects contrast: Level 2 versus Level 1,  $F(1, 198) = 3.55$ ,  $p = .06$ ,  $\eta^2 = .02$ . The remaining interaction effects and the main effects were not significant.

*General self-concept.* No significant main or interaction effects were found for general self-concept.

*Academic self-concept.* We analyzed the following academic self-concept scales: mathematics, verbal abilities, and school. Main effects of acceleration were significant for the scales mathematics and school (see Table 3). Accelerated students appeared to have a more positive self-concept concerning mathematics ( $M = 0.49$ ,  $SD = 0.78$ ) and school ( $M = 0.43$ ,  $SD = 0.69$ ) than nonaccelerated students ( $M_{\text{math}} = -0.03$ ,  $SD_{\text{math}} = 0.84$ ,  $M_{\text{school}} = 0.09$ ,  $SD_{\text{school}} = 0.74$ ). For the verbal self-concept scale, no significant main effect of acceleration was found.

The main effect of gender was significant for the mathematical self-concept, indicating that boys' mathematical self-concept was more positive ( $M = 0.23$ ,  $SD = 0.82$ ) than that of girls ( $M = -0.13$ ,  $SD = 0.84$ ). For the other academic self-concept scales, no significant main effects of gender or time of measurement were found.

The analyses on the mathematical self-concept yielded a three-way interaction between time of measurement, acceleration, and gender. Accelerated boys and girls both showed a more positive mathematical self-concept than nonaccelerated boys and girls at the beginning of their 1st year in secondary school. The difference between accelerated and nonaccelerated boys remained substantial up to the end of the 2nd year. In contrast, the mathematical self-concept of the accelerated girls approached that of the nonaccelerated girls at the end of the 1st year and the 2nd year—test of within-subjects contrasts: Level 2 versus Level 1,  $F(1, 207) = 5.02$ ,  $p = .026$ , partial  $\eta^2 = .02$ . The remaining interactions concerning the academic self-concept scales were not significant.

*Social self-concept.* We analyzed the social self-concept scales: same-sex relations and opposite-sex relations. Main effects of acceleration were significant for the SDQ scale, same-sex relations. Accelerated students appeared to have a less positive self-concept concerning same-sex relations ( $M = -0.41$ ,  $SD = 1.12$ ) than nonaccelerated students ( $M = 0.13$ ,  $SD = 0.69$ ). For the self-concept concerning opposite-sex relations, no significant main effect of acceleration (nor of gender or of time of administration) was found.

The main effect of acceleration on same-sex relations was qualified by a significant three-way interaction between time of measurement, acceleration, and gender. The self-concept concerning same-sex relations of accelerated boys and girls was lower than that of their nonaccelerated peers at the beginning and end of their 1st year in secondary school. For boys, this difference was even larger at the end of the 2nd year.

**Table 2**  
**Means and Standard Deviations of Self-Concept of Accelerated and Nonaccelerated**  
**Boys and Girls at the Beginning (Time 1) and End (Time 2) of First Grade and**  
**at the End of Second Grade (Time 3) of Secondary School**

Self-Concept	Accelerated				Nonaccelerated			
	Boys ( <i>N</i> = 18)		Girls ( <i>N</i> = 13)		Boys ( <i>N</i> = 91)		Girls ( <i>N</i> = 94)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Total self-concept								
T1	−0.02	1.00	0.06	1.06	0.13	1.01	0.00	0.91
T2	0.18	1.11	−0.27	0.77	0.21	0.96	0.02	0.96
T3	0.10	0.72	0.13	0.58	0.22	0.70	0.04	0.61
General self-concept								
T1	0.01	0.85	0.06	0.98	0.06	0.95	0.09	0.96
T2	0.29	1.16	−0.25	1.08	0.11	0.92	0.02	0.99
T3	0.25	1.12	0.07	0.87	0.33	0.77	−0.03	0.85
Academic self-concept								
Mathematics								
T1	0.70	0.54	0.31	0.80	0.26	0.98	−0.28	0.99
T2	0.86	0.60	0.08	1.27	0.09	0.92	−0.10	0.94
T3	0.79	0.77	−0.06	1.12	0.00	1.05	−0.12	0.96
Verbal abilities								
T1	−0.02	0.88	0.28	0.68	−0.06	0.97	0.12	1.09
T2	−0.04	0.96	0.21	0.90	−0.01	0.90	0.15	1.12
T3	−0.07	1.29	0.51	0.65	0.06	0.94	0.09	0.86
School								
T1	0.52	0.79	0.55	0.72	0.20	0.94	0.06	0.88
T2	0.51	1.06	0.39	0.62	0.21	0.85	0.04	1.01
T3	0.14	1.09	0.48	0.51	0.08	0.87	−0.03	0.89
Social self-concept								
Same-sex relations								
T1	−0.51	1.37	−0.42	1.60	0.02	1.02	0.13	0.87
T2	−0.49	1.48	−0.36	1.27	0.04	0.94	0.24	0.77
T3	−0.64	1.04	0.04	0.76	0.20	0.75	0.16	0.69
Opposite-sex relations								
T1	−0.32	0.91	−0.31	1.05	−0.09	1.05	0.10	0.90
T2	−0.10	0.95	−0.18	0.86	−0.01	1.02	0.11	0.92
T3	−0.31	1.04	0.12	0.95	0.24	1.04	0.06	0.90
Physical self-concept								
Physical appearance								
T1	−0.33	1.29	0.06	1.19	0.16	1.01	−0.09	0.88
T2	−0.13	1.29	−0.11	0.90	0.20	0.97	−0.10	0.89
T3	0.12	1.07	−0.01	0.63	0.32	0.93	−0.07	0.83
Physical abilities								
T1	0.05	0.85	−0.11	1.16	0.14	0.96	−0.14	0.98
T2	−0.10	1.04	−0.40	1.09	0.19	0.88	−0.19	0.98
T3	−0.06	1.05	−0.20	1.10	0.20	1.01	−0.15	0.99

Note: T1, T2, and T3 stand for Time 1, Time 2, and Time 3, respectively.

Interestingly, the self-concept of accelerated girls considerably increased at the end of the 2nd year and was no longer different from that of the nonaccelerated girls—test of within-subjects contrasts: Level 3 versus previous,  $F(1, 201) = 6.73$ ,  $p = .010$ , partial  $\eta^2 = .03$ .

A significant three way interaction between time of measurement, acceleration, and gender was also found for opposite-sex relations, with a similar pattern as that observed in same-sex relations. As can be seen in Table 2, at the beginning and the end of the 1st



**Table 3**  
**Results of Repeated Measures Analyses**  
**Concerning the Self-Concept of Accelerated**  
**and Nonaccelerated Students**

Self-Concept	<i>F</i>	<i>p</i>	Partial $\eta^2$
Total self-concept			
Acceleration	0.23	.630	.001
Gender	0.84	.362	.004
Time	0.82	.443	.008
Time $\times$ Acceleration	0.62	.540	.006
Gender $\times$ Acceleration	0.03	.856	<.001
Gender $\times$ Time	2.51	.084	.025
Time $\times$ Gender $\times$ Acceleration	1.83	.164	.018
General self-concept			
Acceleration	0.03	.866	<.001
Gender	1.52	.219	.007
Time	0.92	.401	.009
Time $\times$ Acceleration	0.06	.942	.001
Gender $\times$ Acceleration	0.07	.787	<.001
Gender $\times$ Time	1.83	.163	.018
Time $\times$ Gender $\times$ Acceleration	1.66	.193	.016
Academic self-concept			
Mathematics			
Acceleration	8.59	.004	.040
Gender	8.83	.003	.041
Time	0.63	.531	.006
Time $\times$ Acceleration	0.10	.907	.001
Gender $\times$ Acceleration	1.43	.232	.007
Gender $\times$ Time	0.01	.988	<.001
Time $\times$ Gender $\times$ Acceleration	2.87	.059	.027
Verbal abilities			
Acceleration	0.29	.594	.001
Gender	2.40	.123	.011
Time	0.35	.704	.003
Time $\times$ Acceleration	0.32	.727	.003
Gender $\times$ Acceleration	0.61	.435	.003
Gender $\times$ Time	0.18	.834	.002
Time $\times$ Gender $\times$ Acceleration	0.94	.392	.009
School			
Acceleration	5.29	.022	.026
Gender	0.04	.850	<.001
Time	1.73	.181	.017
Time $\times$ Acceleration	0.19	.825	.002
Gender $\times$ Acceleration	0.58	.446	.003
Gender $\times$ Time	1.23	.295	.012
Time $\times$ Gender $\times$ Acceleration	0.81	.447	.008
Social self-concept			
Same-gender relations			
Acceleration	11.74	.001	.055
Gender	1.58	.211	.008
Time	1.02	.361	.010
Time $\times$ Acceleration	0.17	.846	.002
Gender $\times$ Acceleration	0.46	.498	.002
Gender $\times$ Time	0.80	.449	.008
Time $\times$ Gender $\times$ Acceleration	3.89	.022	.037
Opposite-gender relations			
Acceleration	2.21	.139	.011
Gender	0.24	.626	.001

(continued)

**Table 3 (continued)**

Self-Concept	<i>F</i>	<i>p</i>	Partial $\eta^2$
Time	2.16	.118	.021
Time $\times$ Acceleration	0.44	.648	.004
Gender $\times$ Acceleration	0.05	.828	<.001
Gender $\times$ Time	0.30	.739	.003
Time $\times$ Gender $\times$ Acceleration	3.48	.033	.033
Physical self-concept			
Physical appearance			
Acceleration	0.77	.383	.004
Gender	0.47	.493	.002
Time	1.54	.216	.015
Time $\times$ Acceleration	0.22	.801	.002
Gender $\times$ Acceleration	1.63	.203	.008
Gender $\times$ Time	1.31	.273	.013
Time $\times$ Gender $\times$ Acceleration	0.47	.625	.005
Physical abilities			
Acceleration	0.72	.396	.003
Gender	2.56	.111	.012
Time	1.61	.203	.015
Time $\times$ Acceleration	1.38	.254	.013
Gender $\times$ Acceleration	0.17	.679	.001
Gender $\times$ Time	0.52	.598	.005
Time $\times$ Gender $\times$ Acceleration	0.10	.908	.001

year in secondary school, both accelerated boys and girls had a lower self-concept for opposite-sex relations than their nonaccelerated peers. A difference between accelerated boys and girls emerged at the end of the 2nd year: The self-concept of accelerated boys was considerably lower than that of nonaccelerated boys, whereas the self-concept of accelerated girls had increased and was no longer different from that of nonaccelerated girls at the end of the 2nd year—test of within-subjects contrasts: Level 3 versus previous,  $F(1, 207) = 6.74$ ,  $p = .010$ , partial  $\eta^2 = .03$ .

*Physical self-concept.* We analyzed the self-concept scales physical appearance and physical abilities. No significant main or interaction effects were found.

## Social Status

*Social status categories.* Students were divided into sociometric status groups (popular, rejected, neglected, controversial, and average) following Coie and Dodge's (1983) standard score approach (see Table 1). Chi-square tests indicated significant differences in the percentages of accelerated and nonaccelerated students in the different status groups at all 3 times of measurements (see Table 4). As can be seen in Figure 1, the largest difference between accelerated and nonaccelerated students can be found in the rejected status group: Accelerated students are relatively

**Table 4**  
**Results of Chi-Square Tests on the Social Status Data of Accelerated and Nonaccelerated Students**

	$\chi^2(4)$	$p$
Time 1	20.70	<.001
Time 2	19.44	<.001
Time 3	16.84	<.001

more often represented in the rejected group than nonaccelerated students.

Because of the low numbers of accelerated students in some of the status groups (popular, rejected, neglected, controversial, and average), it was not realistic to execute statistical analyses on these data; therefore, we decided to carry out further analyses on the acceptance, rejection, social impact, and social preference categories.

*Acceptance versus rejection.* Table 5 presents the social status data, that is, the acceptance, rejection, social impact, and social preference of accelerated and nonaccelerated students. Table 6 lists all the results of the repeated measures analyses.

Main effects of acceleration were significant for acceptance (number of liked most nominations) as well as for rejection (number of liked least nominations). Accelerated students were liked most less often ( $M = -0.39$ ,  $SD = 0.74$ ) than nonaccelerated students ( $M = 0.127$ ,  $SD = 0.764$ ). Also, they were liked least more often ( $M = 0.47$ ,  $SD = 1.25$ ) than nonaccelerated students ( $M = -0.12$ ,  $SD = 0.68$ ).

The main effect of gender was significant for rejection, but not for acceptance ( $p > .10$ ): Boys were liked least more often ( $M = 0.13$ ,  $SD = 0.90$ ) than girls ( $M = -0.23$ ,  $SD = 0.65$ ).

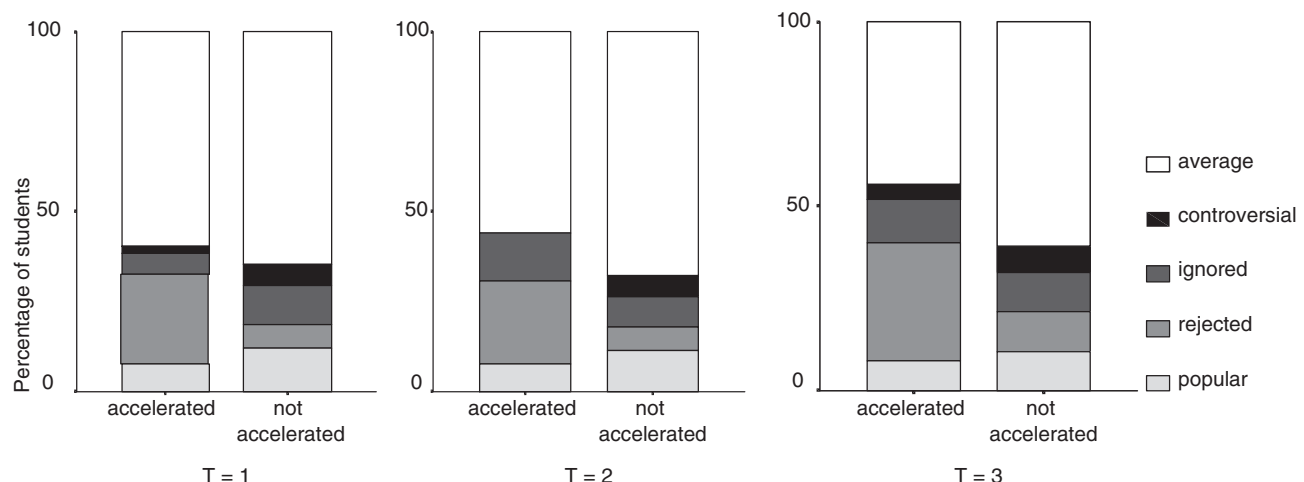
For both acceptance and rejection, none of the three- or two-way interactions were significant.

*Social impact.* As explained in the Methods section, social impact is the sum of the (standardized) acceptance and the (standardized) rejection score ( $z\text{Acceptance} + z\text{Rejection}$ ). The main effect of acceleration was significant. Accelerated students appeared to have higher social impact scores ( $M = 0.20$ ,  $SD = 0.12$ ) than nonaccelerated students ( $M = -0.04$ ,  $SD = 0.10$ ). The main effect of gender was significant: Boys had more social impact ( $M = 0.24$ ,  $SD = 0.08$ ) than girls ( $M = -0.08$ ,  $SD = 0.10$ ). None of the three- or two-way interaction effects were statistically significant.

*Social preference.* As explained in the Methods section, social preference is the difference between the (standardized) acceptance and the (standardized) rejection score ( $z\text{Acceptance} - z\text{Rejection}$ ).

The main effect of acceleration was significant. Accelerated students were preferred less often ( $M = -0.53$ ,  $SD = 1.17$ ) than nonaccelerated students ( $M = 0.15$ ,  $SD = 0.72$ ). A main effect for gender was also found: Girls were preferred more often ( $M = 0.22$ ,  $SD = 0.70$ ) than boys ( $M = -0.09$ ,  $SD = 0.91$ ). No three- or two-way interactions were statistically significant.

**Figure 1**  
**Percentages of Accelerated and Nonaccelerated Students in the Different Status Groups at Time 1, Time 2, and Time 3**



**Table 5**  
**Means and Standard Deviation of Acceptance, Rejection, Social Impact, and Social Preference**  
**Nominations of Accelerated and Nonaccelerated Boys and Girls at the Beginning (Time 1) and End**  
**(Time 2) of First Grade and at the End of Second Grade (Time 3) of Secondary School**

	Accelerated				Nonaccelerated			
	Boys ( <i>N</i> = 27)		Girls ( <i>N</i> = 17)		Boys ( <i>N</i> = 140)		Girls ( <i>N</i> = 125)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Acceptance								
T1	−0.28	0.81	−0.44	0.71	0.16	1.01	0.14	1.00
T2	−0.40	0.74	−0.45	1.04	0.15	1.07	0.10	0.81
T3	−0.54	0.92	−0.16	1.11	0.02	1.02	0.20	0.94
Rejection								
T1	0.46	1.33	0.38	1.38	−0.02	0.83	−0.37	0.66
T2	0.47	1.51	0.25	1.05	0.03	0.89	−0.35	0.54
T3	0.79	1.68	0.27	1.13	0.10	1.04	−0.17	0.82
Social impact								
T1	0.32	1.16	0.11	1.19	0.08	0.89	−0.29	0.77
T2	0.25	1.38	−0.07	0.83	0.14	0.92	−0.27	0.71
T3	0.55	1.57	0.05	1.08	0.12	1.08	−0.04	0.83
Social preference								
T1	−0.47	1.27	−0.46	1.23	0.08	0.87	0.36	0.76
T2	−0.57	1.37	−0.40	1.09	0.05	0.96	0.33	0.60
T3	−0.88	1.56	−0.25	1.11	−0.06	1.01	0.22	0.84

Note: T1, T2, and T3 stand for Time 1, Time 2, and Time 3, respectively.

*Behavior reputations.* Table 7 presents the behavioral reputation data of the accelerated and nonaccelerated students. Table 8 lists all results of the repeated measures analyses. Main effects for acceleration were found for the behavior reputations: humorous, helpful, leader, conceited, and the social reputation; accelerated students, compared to nonaccelerated students, were nominated more frequently as conceited and less frequently as cooperative, humorous, helpful, leading, and social.

The main effect of gender was statistically significant for the reputations humorous, helpful, and conceited, and was marginally significant for social reputation. Table 8 shows that boys, compared to girls, were nominated more frequently as humorous and conceited, whereas girls were nominated more frequently as helpful and somewhat more frequently as social.

The two-way interaction between acceleration and gender was significant for the social reputation and was marginally significant for reputation of being a leader. Table 8 shows that accelerated and nonaccelerated girls had about the same number of nominations concerning being social, whereas accelerated boys received this nomination far less frequently than nonaccelerated boys. Moreover, accelerated boys were nominated less frequently for the reputation of

being a leader than accelerated girls, whereas nonaccelerated boys were nominated for being a leader more frequently than nonaccelerated girls.

The two-way interaction between gender and time of measurement was significant for the reputation of being a leader. Contrast tests indicated a significant difference between the third time of measurement and the previous ones,  $F(1, 302) = 5.78, p = .017$ , partial  $\eta^2 = .02$ . Table 8 shows that the number of nominations of being a leader for boys increased over time. For girls, there was an increase between the beginning and the end of their 1st year in secondary school. At the end of their 2nd year, however, the number of nominations decreased below the level of the first measurement at the beginning of the 1st year. The three-way interaction between acceleration, gender, and time of measurement was not significant for any of the reputations.

## Discussion

In the study reported in this article, which is part of an ongoing and more extensive research project on acceleration in gifted education in the Netherlands, we compared accelerated students in Dutch schools with their nonaccelerated classmates in the first 2

**Table 6**  
**Results of Repeated Measures Analyses**  
**Concerning the Social Status of Accelerated**  
**and Nonaccelerated Students**

Social Status	<i>F</i>	<i>p</i>	Partial $\eta^2$
Acceptance			
Acceleration	15.98	<.001	.50
Gender	0.14	.709	<.001
Time	0.14	.874	.001
Time $\times$ Acceleration	0.15	.858	.001
Gender $\times$ Acceleration	<0.01	.953	<.001
Gender $\times$ Time	2.69	.070	.017
Time $\times$ Gender $\times$ Acceleration	0.49	.613	.003
Rejection			
Acceleration	19.33	<.001	.06
Gender	5.51	.020	.02
Time	2.25	.108	.015
Time $\times$ Acceleration	0.25	.782	.002
Gender $\times$ Acceleration	0.06	.803	<.001
Gender $\times$ Time	0.56	.573	.004
Time $\times$ Gender $\times$ Acceleration	1.36	.259	.009
Social impact			
Acceleration	3.85	.051	.013
Gender	6.95	.009	.022
Time	1.75	.175	.011
Time $\times$ Acceleration	0.72	.488	<.001
Gender $\times$ Acceleration	0.01	.919	<.001
Gender $\times$ Time	0.15	.865	.001
Time $\times$ Gender $\times$ Acceleration	0.99	.373	.007
Social preference			
Acceleration	25.72	<.001	.078
Gender	4.38	.037	.014
Time	1.31	.270	.009
Time $\times$ Acceleration	0.04	.963	<.001
Gender $\times$ Acceleration	0.004	.951	<.001
Gender $\times$ Time	2.24	.108	.015
Time $\times$ Gender $\times$ Acceleration	2.12	.122	.014

years of secondary school, focusing on their self-concept, social status, and behavioral reputation.

As expected, no difference was found in the general self-concept and total self-concept of accelerated and nonaccelerated students. We did find some differences (albeit small) on specific self-concept scales. As for the academic self-concept, accelerated students have a more positive self-concept concerning their mathematical abilities and school in general. Considering the social self-concept, however, accelerated students show a more negative self-concept concerning same-sex relations than their nonaccelerated peers. Especially, accelerated boys maintain this more negative self-concept up until the end of their 2nd year in secondary school, and also show, unlike the accelerated girls, a more negative self-concept concerning

opposite-sex relations. The accelerated girls' social self-concept was lower than that of nonaccelerated girls in their 1st year of secondary school; however, at the end of the 2nd year, the social self-concepts of accelerated and nonaccelerated girls were no longer different. A possible explanation for this gender difference could be that puberty starts earlier for girls than for boys, for many girls when they are still in primary school. So in secondary school (which, in the Netherlands, children normally enter at the age of 12 years), the visible (physical and social) differences between accelerated boys and their nonaccelerated classmates will be larger and will last longer than the differences between accelerated girls and their classmates. Marsh (1987) and Marsh and Hau (2003) showed how the BFLPE causes lower academic self-concepts of gifted students participating in a special gifted education program. If we apply the BFLPE to accelerated students, being in class with older students, the accelerated students will compare their social behavior with older and more mature students. This may lead to a lower social self-concept (at least during the period in which these differences are most notable). Following this reasoning, we can also expect, as Hoge and Renzulli (1993) found, a lower physical self-concept of the accelerated students, especially the boys. The data indeed suggest that accelerated boys have a lower physical self-concept than nonaccelerated boys. However, their physical self-concept does not significantly deviate from nonaccelerateds.

The lack of differences we observed between accelerated and nonaccelerated students in their total and general self-concept and the accelerated students' more positive self-concept concerning school and mathematics are in line with what other researchers found (see, for example, Swiatek & Benbow, 1991).

The (null) hypothesis that there would be no differences between the social status and reputations of accelerated and nonaccelerated students had to be rejected. Differences were found, though the effect sizes were small to medium. Accelerated students are mentioned less often as most-liked and more often as least-liked classmates. They are significantly less socially preferred compared to their nonaccelerated classmates and they are overrepresented in the rejected group. Their behavioral reputations are also less positive: they are seen as less cooperative, humoristic, helpful, leading or social, and as more conceited. With regard to the accelerated students' reputation concerning social behavior, we found a gender difference. Accelerated girls do not differ in their reputation



**Table 7**  
**Means and Standard Deviation of Behavior Reputations of Accelerated**  
**and Nonaccelerated Boys and Girls at the Beginning (Time 1) and End (Time 2)**  
**of First Grade and at the End of Second Grade (Time 3) of Secondary School**

Behavior Reputations	Accelerated				Nonaccelerated			
	Boys ( <i>N</i> = 27)		Girls ( <i>N</i> = 17)		Boys ( <i>N</i> = 140)		Girls ( <i>N</i> = 125)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Cooperative								
T1	-0.36	1.08	-0.46	0.82	0.09	0.94	0.29	1.00
T2	-0.41	0.73	-0.34	1.17	0.10	0.95	0.25	0.93
T3	-0.63	0.72	-0.16	1.18	-0.07	0.98	0.23	0.98
Boasting								
T1	-0.05	0.75	-0.08	0.90	0.16	1.09	-0.35	0.56
T2	-0.04	0.80	-0.05	0.65	0.20	1.11	-0.27	0.67
T3	-0.04	0.62	0.29	1.11	0.22	1.13	-0.20	0.81
Humorous								
T1	-0.39	0.60	-0.62	0.50	0.35	1.16	-0.19	0.72
T2	-0.15	0.90	-0.20	0.88	0.30	1.08	-0.14	0.76
T3	-0.37	0.90	-0.35	0.79	0.25	1.13	-0.18	0.77
Starts fights								
T1	0.11	1.07	-0.03	1.16	0.11	0.92	-0.43	0.45
T2	0.07	0.92	-0.08	1.12	0.19	1.02	-0.41	0.32
T3	0.14	1.02	0.27	1.44	0.40	1.12	-0.43	0.44
Helpful								
T1	-0.35	0.91	-0.16	0.86	-0.06	0.88	0.44	1.05
T2	-0.66	0.55	-0.13	1.07	-0.09	0.85	0.50	1.02
T3	-0.61	0.72	-0.03	1.08	-0.21	0.88	0.44	0.97
Disruptive								
T1	0.20	1.21	0.34	1.31	0.02	0.96	-0.35	0.63
T2	0.13	1.12	-0.05	1.18	0.13	1.04	-0.24	0.66
T3	0.37	1.14	0.64	1.30	0.19	1.07	-0.20	0.86
Leader								
T1	-0.55	0.37	-0.26	0.45	0.15	1.03	-0.10	0.93
T2	-0.45	0.26	0.00	0.98	0.21	1.15	-0.04	0.77
T3	-0.21	0.78	-0.41	0.60	0.26	1.08	-0.12	0.81
Conceited								
T1	0.86	1.60	0.87	1.63	0.07	0.92	-0.33	0.68
T2	0.88	1.74	0.42	1.27	-0.07	0.79	-0.21	0.59
T3	1.08	1.78	0.21	0.68	-0.11	0.91	-0.08	0.81
Social								
T1	-0.18	0.81	-0.21	0.89	0.15	0.97	0.08	1.06
T2	-0.56	0.60	0.18	1.02	0.09	1.00	0.12	1.03
T3	-0.51	0.80	0.17	1.22	0.11	1.01	-0.02	0.95
Help seeking								
T1	0.05	0.97	-0.11	0.73	-0.19	0.79	-0.02	1.03
T2	0.07	1.25	0.33	1.31	-0.20	0.78	-0.11	0.91
T3	0.18	1.14	0.31	0.98	0.00	0.90	0.01	1.07

Note: T1, T2, and T3 stand for Time 1, Time 2, and Time 3, respectively.

concerning social behavior from nonaccelerated girls. This contrasts with the accelerated boys, whose reputation concerning social behavior is lower than that of nonaccelerated boys as well as the accelerated and nonaccelerated girls. According to Kerr (2000), gifted adolescent girls focus their intelligence and creativity

on socially accepted themes, “become social experts, working their peer group in such a way as to increase their status and popularity” (p. 654), which could explain this phenomenon. Unfortunately, this does not seem to lead to a general positive social status; despite the fact the accelerated girls’ reputation concerning

**Table 8**  
**Results of Repeated Measures Analyses**  
**Concerning Behavior Reputations**  
**of Accelerated and Nonaccelerated Students**

Behavior Reputations	<i>F</i>	<i>p</i>	Partial $\eta^2$
Cooperative			
Acceleration	18.31	<.001	.057
Gender	2.04	.155	.007
Time	0.28	.757	.002
Time $\times$ Acceleration	0.25	.781	.002
Gender $\times$ Acceleration	0.07	.790	<.001
Gender $\times$ Time	2.12	.122	.014
Time $\times$ Gender $\times$ Acceleration	0.85	.430	.006
Boasting			
Acceleration	0.11	.740	<.001
Gender	1.83	.177	.006
Time	2.18	.115	.014
Time $\times$ Acceleration	0.51	.599	.003
Gender $\times$ Acceleration	4.32	.038	.014
Gender $\times$ Time	1.43	.242	.009
Time $\times$ Gender $\times$ Acceleration	0.66	.516	.004
Humorous			
Acceleration	9.97	.002	.032
Gender	4.65	.032	.015
Time	2.67	.071	.017
Time $\times$ Acceleration	2.70	.069	.017
Gender $\times$ Acceleration	2.19	.140	.007
Gender $\times$ Time	0.85	.428	.006
Time $\times$ Gender $\times$ Acceleration	0.10	.905	.001
Starts fights			
Acceleration	2.07	.152	.007
Gender	8.62	.004	.028
Time	2.48	.085	.016
Time $\times$ Acceleration	0.50	.608	.003
Gender $\times$ Acceleration	6.24	.013	.020
Gender $\times$ Time	0.05	.954	<.001
Time $\times$ Gender $\times$ Acceleration	1.86	.157	.012
Helpful			
Acceleration	16.79	<.001	.052
Gender	17.82	<.001	.055
Time	0.36	.701	.002
Time $\times$ Acceleration	0.77	.463	.005
Gender $\times$ Acceleration	0.359	.550	.001
Gender $\times$ Time	1.13	.325	.007
Time $\times$ Gender $\times$ Acceleration	0.31	.731	.002
Disruptive			
Acceleration	7.12	.008	.023
Gender	1.32	.251	.004
Time	6.48	.002	.041
Time $\times$ Acceleration	5.55	.004	.035
Gender $\times$ Acceleration	3.00	.084	.023
Gender $\times$ Time	1.38	.253	.009
Time $\times$ Gender $\times$ Acceleration	1.49	.226	.010
Leader			
Acceleration	7.91	.005	.026
Gender	0.177	.674	.001
Time	1.43	.242	.009

(continued)

**Table 8 (continued)**

Behavior Reputations	<i>F</i>	<i>p</i>	Partial $\eta^2$
Time $\times$ Acceleration	0.38	.683	.003
Gender $\times$ Acceleration	3.24	.073	.011
Gender $\times$ Time	3.33	.037	.022
Time $\times$ Gender $\times$ Acceleration	1.48	.230	.010
Conceited			
Acceleration	42.04	<.001	.121
Gender	5.55	.019	.018
Time	1.67	.191	.011
Time $\times$ Acceleration	1.47	.232	.010
Gender $\times$ Acceleration	1.06	.304	.003
Gender $\times$ Time	0.75	.473	.005
Time $\times$ Gender $\times$ Acceleration	6.78	.001	.043
Social			
Acceleration	5.55	.019	.018
Gender	3.05	.082	.010
Time	0.02	.977	<.001
Time $\times$ Acceleration	0.10	.906	.001
Gender $\times$ Acceleration	4.86	.028	.016
Gender $\times$ Time	2.53	.081	.016
Time $\times$ Gender $\times$ Acceleration	1.87	.155	.012
Help seeking			
Acceleration	2.96	.087	.010
Gender	0.40	.528	.001
Time	2.55	.080	.016
Time $\times$ Acceleration	1.91	.149	.012
Gender $\times$ Acceleration	<0.01	.972	<.001
Gender $\times$ Time	0.74	.476	.005
Time $\times$ Gender $\times$ Acceleration	1.69	.187	.011

social behavior does not differ from that of their nonaccelerated female classmates, they are, as discussed earlier, nominated less frequently as the liked-most classmate when compared with the nonaccelerated girls. More specifically, Table 3 indicates that accelerated girls have a relatively low acceptance score, a high rejection score, and a low social preference score compared to nonaccelerated girls. This difference seems particularly notable in the 1st year of secondary school, although interactions with the factor time of measurement did not reach statistical significance.

The negative findings concerning the negative social status of accelerated boys and girls seem to contradict findings in the literature about accelerated students, in which almost no evidence is found that they have social emotional problems. We already mentioned at the beginning that previous studies on peer relations and social status of accelerated children were all based on accelerated students' self-reports, measuring how accelerated students think (or report they think) others perceive them. The findings of this study suggest that the way peers actually perceive

accelerated students is more negative than accelerated students think or (want to) report us.

Most researchers in the field seem to assume that intellectually advanced children are also socially and emotionally advanced (e.g., Neihart et al., 2002; Richardson & Benbow, 1990) and that acceleration could provide a means to align both intellectual as well as social and emotional development to the mental rather than to the chronological age of gifted students. We should consider the possibility that we rely too much on self-reports assuming this. Despite indications that intellectually advanced children are also socially and emotionally advanced, and that, consequently, accelerated gifted students are socially and emotionally equal to their older classmates, those classmates still seem to consider them as outsiders. Consequently, they do reject their accelerated classmates more often and do not consider them as preferred classmates but rather as persons who are little cooperative, humoristic, helpful, leading, or social, and more conceited than the average student is.

Besides the possible bias of self-reports, the number of empirical studies concerning social-emotional competence of accelerated students is limited, even more so for the European situation. The majority of studies on social and emotional implications of acceleration have been performed in the United States (the work of Gross is a marked exception). This is remarkable, as academic acceleration is an educational intervention used in many countries, including countries in Europe. Moreover, the findings of North American studies do not necessarily generalize to other countries. First of all, the United States has a much longer tradition of gifted education, including acceleration, than other countries, and this also holds good for the Netherlands, where current study was performed. Furthermore, because countries differ in their educational system, policy, and philosophy, the findings obtained in one country may to some extent reflect educational specificities of this particular country.

In any case, the relatively high percentage of rejected accelerated students in this study is alarming. Data of Newcomb et al.'s (1993) meta-analysis (not on accelerated children) showed that rejected children are at risk in their social development. They show higher levels of negative behavior, higher levels of withdrawal (depression, anxiety), and lower levels of social behavior (less social interactions, less positive social interactions and traits, and less friendship skills; see also Asher & Coie, 1990). If we can assume that accelerated students are not less socially competent, and this assumption is

corroborated by empirical studies (e.g., Galloway & Porath, 1997; Gross, 2000), their generally low social status and behavior reputations suggest that some other factor(s) exert(s) an influence. One such factor could be prejudiced attitudes of peers and teachers. In an earlier study (Hoogeveen et al., 2005), we found that the general attitude of secondary school teachers concerning accelerated students is not accurate and rather negative. Cornell (1990) also mentioned prejudicial attitudes in the classroom or school as a possible cause for unpopularity.

The relationship between acceleration, self-concept, social status, and other factors like giftedness and possible prejudicial attitudes are complex, depending on situations and circumstance (Dodge & Feldman, 1990). Research focusing on these interactions will be necessary to fully understand why accelerated and nonaccelerated students judge themselves and each other the way they do. The indications of a time effect on self-concept differences between accelerated and nonaccelerated boys and girls asks for a longer-lasting longitudinal approach as we currently undertake (Hoogeveen & van Hell, 2006). It is also important to take into account at what moment a student has accelerated (Was it an early entrance in first grade or skipping grades at the end of primary school?) and on what grounds. At this moment, most Dutch schools do not seem to have any policy concerning the acceleration of students, which entails the risk of accelerating the wrong students and not accelerating the right ones, those students who would need acceleration.

Proctor et al. (1986) stated that the appropriateness of a research design depends on the question being asked. In this study we were concerned with whether young students who had been accelerated in primary school are, in comparison with their older classmates, functioning well socially and emotionally, as expressed in their self-concepts and social status. Preliminary results from the study of Hoogeveen et al. (submitted 2008) in which children of equal ability, half of whom have been accelerated, are compared, indicate that there are no statistically significant differences in the social functioning of the two groups. This strengthens the suggestion that it is not acceleration per se that causes differences between accelerated and nonaccelerated students, but other factor(s).

Until more research has been done, we should take into account that accelerated students in their first 2 years of secondary school have a more negative social status than their classmates. To abolish acceleration will not be the solution: Too many studies indicate the benefits (Collangelo, Assouline, & Gross, 2004) and other studies (Southern & Jones, 1991b) as well as

experiences with clients in the Center for the Study of Giftedness<sup>2</sup> show the negative consequences of not accelerating. Apart from aiming to inform teachers about giftedness and acceleration, which will lead to a more realistic attitude toward accelerated students (see also Hooegeveen et al., 2005), there should be more attention for the social-emotional development of the young accelerated students and their classmates. Teachers should be alert about existing prejudices among students and aim for an accepting, tolerating climate in the classroom.

### Appendix A

#### Subscales and Examples of Items of the Self-Development Questionnaire (SDQ-II)

Scale	Example Item
Physical abilities	I enjoy things like sports, gym, and dance (positive).
Physical appearance	Nobody thinks that I'm good looking (negative).
Opposite-sex relations	I have lots of friends of the opposite sex (positive).
Same-sex relations	I have few friends of the same sex as myself (negative).
Parent relations	I get along well with my parents (positive).
Honesty–trustworthiness	I sometimes tell lies to stay out of trouble (negative).
Emotional stability	I am usually relaxed (positive).
Math	I often need help in mathematics (negative).
Verbal	I look forward to Dutch classes (positive).
General school	I get bad marks in most school subjects (negative).
General self	Overall, I have a lot to be proud of (positive).

### Appendix B

#### Behavior Reputation Questions of the Classmates Questionnaire

1. There are classmates you like to have in your group. Those classmates are nice and do things with other classmates. You can trust these classmates: they take good into consideration what others want.
2. There are classmates who show of a lot about themselves, or they try to attract attention.
3. There are classmates who have a good sense of humor and who can stand a joke themselves. In general they are in a good mood and stay calm, also when things do not go as they had expected.

(continued)

### Appendix B (continued)

4. There are classmates who are quarrelsome. They say mean things to other classmates or push or hit other classmates.
5. There are classmates to whom you can go if you need help or if you are troubled by something. They are nice classmates who really are interested in your feelings.
6. Some classmates mess up everything if they are in a group. They never want to share, do not take into consideration the others, and always want to have it their way.
7. There are classmates, who others choose as their leader. The other classmates like it when these leaders indicate what has to be done.
8. Some classmates prefer not to participate with the others. They are arrogant, isolate themselves, and pretend to be better than others.
9. Some classmates prefer to be with others than being alone. In general, they participate with the rest of the class.
10. Some classmates always want somebody else to help them. They want help before they tried hard themselves.

### Notes

1. The total self-concept is the sum of all self-concept scales of the self-description questionnaire (SDQ-II), whereas the general self-concept is one of the scales of the SDQ-II, presenting more general self-concept statements.

2. The Center for the Study of Giftedness (CBO) is part of the Radboud University Nijmegen (Netherlands), and the activities involved assessment of (gifted) children and adolescents, counseling parents, teachers and social workers, offering classes for gifted children, teacher training (in cooperation with the European Council for High Ability [ECHA]) and scientific research on giftedness and education.

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