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## National campaign effects on secondary pupils' bullying and violence

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**Background.** Research on pupils' bullying (1991) and violence (1993) motivated the Dutch Ministry of Education, Culture and Science to initiate a national campaign on school safety. The government campaign was undertaken from 1995 to 2000.

**Aim.** To test for differences in secondary pupils' bullying and violence before and after the campaign while controlling for different contextual variables.

**Samples.** In 1991, a representative survey on bullying was conducted in 36 secondary schools with 1,055 pupils from Year 2 and 4 classes (age range 13–16 years). In 1993, a survey on violent behaviour took place in 71 secondary schools with 1,998 pupils from Year 3 and 4 classes (age range 14–16 years). In 2000, a survey on bullying and violence was conducted in 60 secondary schools with 9,948 pupils from Year 1 to 6 classes (age range 12–18 years).

**Methods.** The data from pupils in identical school years were compared with respect to bullying (1991–2000) and violence (1993–2000). The statistical relations were analysed in two stepwise multiple regression analyses. Year of investigation (1991–2000, 1993–2000) was the respective dependent variable. The independent variables were pupils' bullying or violence scores, sex, school year, contextual lesson, school, and community variables.

**Results.** In both regression analyses, the contextual lesson and school variables discriminated between the measurement years. Also, compared with 1991, the pupils in 2000 scored lower for being a bully and higher for being bullied directly. Compared with 1993, the pupils in 2000 scored lower for being a victim of intentional damage to property or emotional violence, lower for being a perpetrator of disruptive behaviour in school, and higher for being a perpetrator of intentional damage to property.

**Conclusions.** The differences between the contextual variables measured before and after the campaign reflect changes in educational and instructional situations. Independent of these differences, the national campaign appears to have helped improve the awareness of pupils' social behaviour and elicit, in particular, a decrease in pupils' violent behaviour. However, more specific pedagogical and preventative support for pupils socially at risk appears to be needed to have a more prosocial impact on the behaviour of secondary school pupils.

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Bullying and violent behaviour on the part of school pupils have been experienced as problematic for many years now (see, for example, Bayh, 1975; Olweus, 1978, 1984; US Department of Health, Education and Welfare, 1973). In general, bullying and violent behaviour are used to strengthen the individual's or group's own position or strategies, and to the detriment of one or more other individuals, groups, or aspects of the environment. The associated aggressive acts may take different forms of antisocial behaviour, for example, psychological, physical, sexual, criminal, or other aggressive acts aimed at property (Pellegrini, Bartini, & Brooks, 1999). More precisely, bullying is often characterized by the wilful and conscious desire to hurt another and place another under stress (Tattum, 1993). Bullying typically occurs repeatedly over time, with an imbalance of power existing between bully and victim (Olweus, 1987; Pellegrini & Long, 2002). With respect to pupils' bullying, Olweus (1991) differentiates between being bullied directly or the frequency and intensity of being bullied at school, and being a bully or the frequency and intensity of acting as a bully at school. Bully/victims are pupils who act as a bully and who are bullied themselves (Wolke, Woods, Stanford, & Schulz, 2001). During the last years of primary school and the first years of secondary school, bullying occurs most frequently and intensely (Farrington, 1993; Olweus, 1991). Moreover, research indicates that victimization in school is related to victimization in the workplace (Smith, Singer, Hoel, & Cooper, 2003).

According to Baumann (1992), violence pertains to the outward behaviour of individuals or social systems towards other individuals, social systems or property. Violence involves being physically, psychologically, or socially damaging or destructive to the object of the violence, and frequently also to the perpetrator of the violent behaviour. Baumann (1992) states that the use of violence implies breaking the will of the victim in a deliberate and conscious manner, although this need not mean that the perpetrator is always fully aware of the consequences of his or her actions. Violent behaviour may occur on only one occasion, and it is this which differentiates violence from bullying. Violent behaviour may also be much more aggressive or outwardly damaging than bullying. Criminal behaviour in this context refers to forms of violence which are unlawful and thus subject to judicial sanctions (Bol, Terlouw, Bles, & Verwers, 1998; Hirschi, 1969).

Attention has been paid to the bullying and violent behaviour of pupils in many countries (e.g. Lane, 1989; Moreno & Torrego, 1998; Ortega, 1997; Stevens, de Bourdeaudhuij, & van Oost, 2000; van der Meer, 1993; Wolke *et al.*, 2001). Theory and research have been largely concentrated on the descriptive and statistical aspects of a number of different variants of aggressive or victim behaviour, and the specification of the relations of such to various school and other contextual variables. Although the individual characteristics of the aggressive behaviour may be the focus of attention in such studies, various school and socio-cultural factors have also been recognized as being of importance. For example, Yoneyama and Naito (2003) have found certain school circumstances and cultural conditions to promote a group dynamic and, thereby, provide a catalyst for bullying between pupils or pupils and teachers in Japan. Among other factors, these authors assumed the following to contribute to the occurrence of bullying: stress as a result of achievement pressure and/or the meaninglessness of the way of studying; power-dominated relationships between teachers and pupils; and the social consequences of the use of corporal punishment by teachers.

Theory and research concerned with the bullying and violent behaviour of pupils have also been concerned with activities or programmes for its reduction (American Psychological Association, 1993; Lim & Deutsch, 1996). Socially corrective support and mediating activities addressing the behaviour of the bully or aggressor and the victim or

victims have been found to be effective. Along these lines, Howard and Jenkins (1970) paid systematic attention to the use of cooperative strategies by teachers and pupils for the formulation of, responsibility for, and control of, prosocial behavioural rules (see also Cowie & Wallace, 2000; Stephenson, Collinson, & Killeavy, 1998). Alschuler (1980) developed procedures to increase the self-respect and social responsibility of members of a class, group, or gang. Quantitative intervention research has further demonstrated the positive effects of such measures on pupils' social behaviour (e.g. Mooij, 1999a, 1999b; Olweus, 1991, 1993; Sharp & Smith, 1993; Smith & Sharp, 1994). The effectiveness of measures undertaken to diminish the incidence of bullying and violence appears to lie in the formulation and monitoring of positive behavioural rules by the pupils themselves and the anchoring of these rules within the content of the school curriculum, flexible groupings of pupils and socially stimulating work procedures during lessons (Ames, 1984; Kaplan, Gheen, & Midgley, 2002; National Education Association, 1994). It is interesting to note that Yoneyama and Naito (2003) have recently proposed very similar measures for the reduction of bullying in Japan.

Yet another possibility for the reduction of bullying and violence is the organization of a national campaign. A first variant involves the extension and enlargement of school based interventions for use on a national scale. An example is the pre-test, intervention, and post-test research carried out in Norway by Olweus (1991, 1993). A second variant of a national campaign involves government policy in order to stimulate activities of different institutions to reduce pupils' bullying and violent behaviour in and around schools. This second variant can be illustrated by an example from The Netherlands.

## **A national campaign**

### ***National policies and activities***

#### *Ministry of Education, Culture and Science*

The results of national surveys on bullying in primary and secondary schools (Mooij, 1992) and violence in secondary schools (Mooij, 1994) stimulated the Dutch Ministry of Education, Culture and Science to formulate national policy aimed at establishing greater safety in and around schools. In 1995, the State Secretary for Education appointed a committee to develop an action programme to combat violence in schools in particular. The government programme was published under the title 'Preventing and combating violence in schools' (Ministry of Education, Culture and Science, 1995a). The main campaign goals were to stimulate awareness among pupils of social behaviour, and to support attempts by both institutions and professionals to make schools safer by stimulating pupils' prosocial behaviour (Ministry of Education, Culture and Science, 1995a, 1995b).

The government campaign was initiated in 1995. The National Secondary Educational Process Management Team (PMVO) served as coordinator, while the National Educational Advisory Centres (LPC) and the National Institute of Curriculum Development (SLO) were responsible for various executive activities. In 1996, the national campaign and instruments to be used were outlined to relevant institutions and schools (Secondary Educational Process Management Team, 1996). The main activities proposed in this paper were as follows:

- A national symposium and competition among pupils for the creation of videos, photographs, texts, comic strips, posters, music, and drama for pupils in order to combat bullying and violence.

- The introduction of a national help-line and the development of crisis support for pupils, parents and schools.
- The development of instruments to measure bullying and violence problems for schools.
- The dissemination of information regarding reduction models and examples of successful approaches in schools (e.g. a step-by-step strategy and the drafting of a range of social training and support measures for schools).
- The drafting of a health and safety plan in accordance with the legislation, including the appointment of confidential counsellors, the establishment of complaints procedures, and a 4-year policy plan for schools.
- Agreements (covenants) with cities and large towns (i.e. municipalities, school boards, welfare organizations, social services) including a section on 'safe schools'.
- Assimilation of integrated policies on young people and innovation into national policies.
- A conference of the European Community on 'Safer at school' in February 1997 initiated by the Ministry to stimulate the development of international policy at the European level.

Additional secondary school level materials and instruments were developed (Prior, 1998), as well as resources for primary schools (Prior, 1999a, 1999b). Many regional conferences and other activities to inform both school managers and teachers were organized by the PMVO during the period 1996–2000.

#### *Other ministries*

In 1994, the Ministry of Justice published a report from the Juvenile Delinquency Committee (Ministry of Justice, 1994) calling for early, swift, and consistent intervention to prevent the further spread of juvenile violence. On behalf of the Ministry of Health, Welfare and Sports, Schuyt (1995) examined the backgrounds and characteristics of young people at risk of school dropout and violence, and the current policies concerning them. There was an emphasis on early identification and effective support for such young people. Between 1995 and 1997, the Ministry of Interior drew up covenants on such issues with municipalities of cities and large towns. The important characteristics of a covenant are: a common action plan, appointing contact individuals at collaborating institutions, and tackling safety problems, which may be realized with the initiation of preventative sports or play projects (van Barlingen, 1999).

#### *Other national bodies*

In 1992, the National Health Education Centre produced a package on the reduction of bullying in schools. The package contained educational materials, children's books, audio-visual materials and drama productions, materials for parents, and background information (National Health Education Centre, 1992). In 1995 and 1998, the Institute for Non-commercial Advertising (SIRE) carried out campaigns against bullying. The confederation of National Parents' Associations has tackled the problem of bullying and violence in schools since the 1990s. The National Secondary School Pupils' Action Committee (LAKS) has drawn up a checklist for an 'ideal' school (National Secondary School Pupils' Action Committee, n.d.). The Netherlands Supply Teachers' Fund and Staff Health Service has studied the levels of aggression, violence, and sexual harassment

encountered by people in schools and has published a manual, a questionnaire entitled 'Safe in school', and an accompanying action plan (Kelder & van Lemette, 1996).

#### *Shift to regional and municipal policy*

Since 1998, the national campaign has been gradually adjusted towards the policy of allocating greater autonomy and responsibility to Dutch cities by giving them more money to find their own solutions to their problems. With this new community policy, the need for collaboration between education, youth health, and welfare services, and the police to promote greater safety also became apparent (Gilsing, Roes, Veldheer, & Vorthoren, 2000). For example, in 1994, the Education Department of the Municipality of The Hague published a report incorporating rules for teachers regarding the physical and legal aspects of violence (Education Department, 1994). Other cities and large towns have followed suit, although with slightly different emphases (e.g. the Municipality of Arnhem with the Activity Group Education [1998]). At the same time, consultations with, and cooperation between, educational institutions and organizations in the welfare sector have increased. Cooperation between schools and the police has resulted in some initiatives, including crime prevention lessons (e.g. Huigen, Oltmans, & Cornelissen, 1992).

#### **School policies and activities**

On the behalf of the Ministry of Education, Culture and Science, Mooij (2001) conducted an inventory of the materials and instruments available to, and used by, secondary school teachers. Many materials and instruments were available (see above), but little or no evidence was presented with regard to the reliability, validity, or effectiveness of the different tools. In addition, the use of the relevant materials and instruments was voluntary, which made the collection of information on the adoption, use, and effects of various strategies and instruments virtually impossible. At the school level, correlational analyses revealed significant cooperation between the school, regional health and welfare institutions, the police, and school safety policy in the form of support and prevention for pupils at risk. The degree of regional cooperation for the school was also found to correlate significantly with extra supervision in and around the school. The teachers' data also produced significant correlations for regional cooperation and support with prevention efforts for pupils at risk, on the one hand, and the undertaking of within-school initiatives to emphasize safety, on the other.

Another finding revealed by the inventory was that both school managers and teachers generally had a positive image of the functioning of various pupil care activities and the pedagogical climate within their schools (Mooij, 2001). However, the lowest scores were assigned to such activities as having to implement a deliberate language policy for pupils from an ethnic minority group (i.e. high-risk pupils) and integration of this policy into daily lessons, attempts to involve parents of children from ethnic minority groups in school activities, and the checking of extra support efforts for pupils encountering learning or other problems (i.e. high-risk pupils).

#### **Pupil effects of the national campaign**

Given that one of the main goals of the national campaign was to influence pupils' bullying and violent behaviour in prosocial directions, the Ministry of Education, Culture and Science wanted to evaluate the national programme and its effects on

secondary pupils' social behaviour. However, such an evaluation was not an easy undertaking. First, the evaluation question was only raised at the end of 1999, which was very near the end of the national campaign. It was, therefore, not possible to use pre-intervention or process characteristics to describe or evaluate the campaign quantitatively. Second, very diverse and numerous safety actions and processes were initiated due to the increasing attention being paid to the issue. Third, other government innovation policies and regulations had led to a significant reorganization of both communities and schools between 1990 and 1998. Fourth, numerous educational innovations aimed at the differentiation and reorganization of the secondary teaching and learning process were also implemented during the same period as a result of new government policies on basic education (*'basisvorming'*) for pupils aged between 12 and 15 (Process Management Basic Education, 1991), and the creation of more educational responsibility for pupils aged between 15 and 18 in the 'study house' (Steering Group, 1996).

Despite the aforementioned obstacles to reliable evaluation, representative data were found to be available from earlier national surveys of pupil bullying in 1991, and of pupil violence in 1993. These surveys contained variables that could indicate, and also control for, contextual lesson changes and changes in the school and the community as a result of reorganization and amalgamation. What was needed was another survey in 2000 with at least the same variables as in 1991 and 1993. Information from such a survey would permit investigation of changes in pupils' bullying and violent behaviour over the period from 1995, while controlling for various lesson, school, and community changes. For instance, the survey on bullying (Mooij, 1992) had shown lower degrees of bullying by girls in schools with a greater number of pupils, and in schools characterized by higher educational types and by a religious affiliation. The survey on violence (Mooij, 1994) clarified that higher degrees of pupil violence were shown by boys in larger cities, in schools characterized by lower educational types in which lessons were oriented more towards social, organizational, and disciplinary activities (cf. Olweus, 1991). Pupil year or grade may also be relevant, as greater bullying and violent behaviour have been found to occur in lower (as opposed to higher) years of secondary school (Moffitt, 1993; Pellegrini & Long, 2002).

### **Hypothesis**

Pupils' bullying and violence seem related, then, to specific personal, lesson, school, and social environment variables, which may either promote or reduce the degree of antisocial behaviour of pupils. From a multi-level theoretical point of view, the national and regional campaign agencies and materials together with the other policy agencies, strategies and materials, are then hypothesized to influence schools, teachers and lesson characteristics and thereby pupils' bullying and violent behaviour (cf. Cronbach, 1983; Mooij, 1999a, 1999b). The national campaign is thus expected to influence secondary pupils' social behaviour in prosocial directions, both directly and indirectly.

### **Research question**

The research question is whether the scores of secondary school pupils for bullying and violence after the conduct of the national campaign will be lower than they were before the campaign began, while controlling for a number of relevant lesson, school and community changes, and the pupils' sex, and age (school year).

## Method

### Design

The 1991 national survey on bullying (Mooij, 1992) was conducted in 36 secondary schools with 1,055 pupils from 43 Year 2 and 4 classes (age range 13–16 years). The 1993 national survey on violent behaviour (Mooij, 1994) took place in 71 secondary schools with 1,998 pupils from 134 Year 3 and 4 classes (age range 14–16 years). In 2000, a new national survey on bullying and violence was conducted (see below). Methodologically, the 1991 and 1993 data samples can serve as two different pre-test cohorts, while the survey carried out in 2000 can function as a post-test cohort (cf. Anderson, Auquier, Hauck, Oakes, Vandaele, & Weisberg, 1980; Bock, 1975; Cook & Campbell, 1979).

### Procedure for the 2000 survey

In December of 1999, all of the secondary schools in The Netherlands were sent a letter with information on the goals and procedures involved in the present research. In each school, the managers were informed about the content of three questionnaires to be completed by the managers, and the teachers and pupils in the participating classes. As a result of school reorganization processes in the 1990s, most secondary schools consisted of different school locations (i.e. buildings located in different places). The school managers could assign one or more of their school locations to the study by completing a response card with information and the name of a contact person for each of the locations. In addition, the managers were asked to indicate the stage and levels of education offered, the curriculum provided for each level of education, and the numbers of teachers and pupils who were expected to participate. Four criteria for representativeness were then used to select school locations for participation in the study: stage and level of education, number of pupils or school/location size, distribution across the country, and religious affiliation of the school.

The managers of 60 different school locations completed the school questionnaire and a total of 291 class teachers and 9,948 Year 1 to 6 pupils (age range 12–18 years) participated. Inspection of the sample data showed it to be representative of Dutch secondary education (Mooij, 2001). The questionnaires for the managers, teachers, and pupils incorporated a number of the variables measured in 1991 and 1993.

### Operationalization of pupil-level variables

#### Bullying

In 1991, a national survey on pupils' bullying had been carried out with pupils completing the bullying instrument as originally developed by Olweus (1991) and by collecting data from teachers and managers. Olweus' questionnaire had been translated into Dutch by staff from the University of Nijmegen (The Netherlands). In primary education, 1,065 pupils completed the junior version. In secondary education, 1,055 pupils completed the senior version. In the questionnaire, the meaning of bullying was explained to the pupils by emphasizing that bullying refers to saying mean or annoying things to each other; or to beat, kick, threaten, or lock up each other; that these kinds of things occur regularly; for the pupil being bullied it is difficult to defend him/herself; and that if two pupils who quarrel or fight are of about the same strength, bullying is not at stake. The concept 'being bullied directly' was operationalized as how often and how intensely a pupil is bullied at school (during the school year, the last five days, the

previous school year, and on the way to school). 'Being a bully' was similarly operationalized as how often and how intensely a pupil bullied another pupil at school (during the school year, the last five days, the previous school year, and on the way to school). In addition, 'bullying the teacher' was operationalized as how many pupils in the class - including the respondent him/herself - had bullied the class teacher in the present or previous school year.

In order to conduct item reliability and homogeneity analyses, the response alternatives for the items were recoded along the following lines: *does not happen* = 1; *sometimes happens* = 2; *regularly happens* = 3; *frequently/always happens* = 4. For the three concepts, the reliability and homogeneity analyses across all primary and secondary pupils resulted in item groups and corresponding alpha coefficients acceptable for use in the next analyses (see Cronbach, 1970). The details are given in Appendix A.

In 2000, the secondary pupils completed only the part of the senior version of the bullying questionnaire which contained the same concepts as measured in 1991. The response alternatives were made identical to the recoded 1991 response alternatives. The results of the reliability and homogeneity analyses are presented in Appendix A and prove sufficient for use in subsequent analyses (Cronbach, 1970).

#### *Violent behaviour*

In 1993, a national survey on pupils' violent behaviour had been conducted with pupils, teachers, and managers in secondary education. Pupil violence had been operationalized as dichotomous items related to different aspects of victim and perpetrator behaviour. Principal components analyses had suggested the relevance of five different concepts. There were two conceptual variants of being the victim of violence: 'being a victim of physical violence' and 'being a victim of intentional property damage or emotional violence'. There were three conceptual variants of being a perpetrator of violence: 'being a perpetrator of disruptive behaviour at school'; 'being a perpetrator of intentional damage to property'; and 'being a perpetrator of premeditated physical violence'. Item reliability and homogeneity analyses had produced acceptable item-rest correlation results and alpha coefficients (see Appendix B for details for the 1993 survey). Appendix B also presents the results of comparable analyses with respect to the data for the 2000 survey.

#### *Other pupil variables*

Sex is coded as 'being a boy = 0' and 'being a girl = 1'. Pupil year or grade is coded as the school year actually attended by the pupil.

#### **Operationalization of contextual variables**

##### *Lesson or class level*

A teacher questionnaire was used to collect information on various didactic and social characteristics of the lessons in the relevant classes. The characteristics concerned the degree to which the lessons of the pupils in the study were task or content oriented, directed at organizational or learning supporting activities, directed at social or group relationships between pupils or pupils and teacher, order and discipline directed, or



concentrated on such other activities as an excursion or visit to a museum. The percentages had to sum to 100.

#### *School level*

In the questionnaire for school managers, information was collected on variables characterizing the school. The variables concerned the level(s) of education present in the school. Educational level could be coded as *i(v)bo-mavo* (practice-oriented education), which support secondary school pupils scoring in the lower half of the cognitive complexity scale (*not present* = 0, *present* = 1), or *havo-vwo*, which are meant for secondary school pupils scoring in the upper half of the cognitive complexity scale (*not present* = 0, *present* = 1). In addition, the school was assessed as being non-religious (scored 0) or religious (scored 1). Furthermore, information was gathered on the number of pupils in the school (1991, 1993) or the school location (2000). Finally, the managers provided information on the number of inhabitants in the community in which the school was situated.

## Results

### *1991–2000 univariate bullying results*

Attention is given to the secondary educational results from 1991 and 2000. All of the contextual variables were disaggregated to the pupil level, which means that pupils within an identical context were assigned the same value of the contextual lesson, school, or community variable. Given that the 1991 survey concerned Year 2 and 4 secondary school pupils ( $N = 1,055$ ), Year 2 and 4 secondary school pupils ( $N = 4159$ ) were selected for comparison from the 2000 survey. The univariate statistical characteristics and results of the *t* tests for significant differences between the means for the variables measured in 1991 and 2000 are presented in Table 1. As the statistical results with assumed equal variances and assumed unequal variances proved the same, only the results for assumed equal variances are presented in Table 1.

Compared with 1991, the pupils in 2000 score higher on being bullied directly, lower on being a bully, and lower on bullying the teacher. No significant differences were detected with respect to sex or school year. Other differences in Table 1 concern the contextual lesson and school variables. Compared with 1991, the pupils in 2000 experience less content and more organizational, social, order, and excursion activities during lessons. With respect to the school and community variables in 1991, the pupils in the 2000 sample attend schools with more variation in the level of education offered, attend fewer religious schools, attend schools with higher numbers of pupils on average (respective means of 698 versus 863), and live in much bigger cities on average (respective means of 84,000 versus 143,000). The latter results reflect the school and community reorganization and amalgamation processes occurring in the 1990s.

### *1993–2000 univariate violence results*

Because the 1993 survey concerned Year 3 and 4 secondary school pupils ( $N = 1,998$ ), Year 3 and 4 secondary school pupils ( $N = 4,615$ ) were selected for comparison from the 2000 survey. The univariate statistical characteristics and results of the *t* tests for significant differences between the means for the variables measured in 1993 and 2000 are presented in Table 2.

**Table 1.** Univariate differences (1991 – 2000) for bullying, personal, and contextual variables

Variables	1991 = 0, 2000 = 1	N	Mean	SD	t-test for equality of means																																																																																																																																																																						
					t	df	p (two-tailed)																																																																																																																																																																				
Being bullied directly <sup>a</sup>	0	699	1.33	0.37	-2.95	4,577	.00																																																																																																																																																																				
	1	3,880	1.39	0.51				Being a bully <sup>a</sup>	0	704	1.48	0.55	3.42	4,670	.00	1	3,968	1.40	0.54	Bullying the teacher <sup>a</sup>	0	701	1.78	0.79	2.32	4,667	.02	1	3,968	1.71	0.77	Sex: boy = 0, girl = 1	0	714	0.51	0.50	-.94	4,831	.35	1	4,119	0.53	0.50	Secondary school year (2, 4)	0	714	2.82	0.98	-1.15	4,871	.25	1	4,159	2.87	0.99	Mean % content during lesson	0	714	71.29	15.92	22.10	4,454	.00	1	3,742	61.82	9.11	Mean % organizational during lesson	0	714	9.51	6.25	-17.98	4,454	.00	1	3,742	13.06	4.51	Mean % group/social during lesson	0	714	9.29	8.61	-9.23	4,454	.00	1	3,742	11.22	4.12	Mean % order, discipline in lesson	0	714	7.35	5.05	-16.82	4,454	.00	1	3,742	10.21	3.98	Mean % excursions, museum	0	714	2.36	5.11	-18.28	4,340	.00	1	3,628	4.46	2.07	lvbo-mavo (0, 1; lower levels of education)	0	689	0.63	0.48	-3.97	4,846	.00	1	4,159	0.70	0.46	Havo-vwo (0, 1; higher levels of education)	0	689	0.69	0.46	-13.23	4,846	.00	1	4,159	0.88	0.32	Religious affiliation (non-religious = 0, religious = 1)	0	714	0.80	0.40	6.15	4,871	.00	1	4,159	0.69	0.46	School/location size (number of pupils)	0	714	698.72	389.88	-8.92	4,871	.00	1	4,159	863.12	465.15	Community size (number of inhabitants)	0	702	84062.49	155209.50	-8.23	4,859	.00
Being a bully <sup>a</sup>	0	704	1.48	0.55	3.42	4,670	.00																																																																																																																																																																				
	1	3,968	1.40	0.54				Bullying the teacher <sup>a</sup>	0	701	1.78	0.79	2.32	4,667	.02	1	3,968	1.71	0.77	Sex: boy = 0, girl = 1	0	714	0.51	0.50	-.94	4,831	.35	1	4,119	0.53	0.50	Secondary school year (2, 4)	0	714	2.82	0.98	-1.15	4,871	.25	1	4,159	2.87	0.99	Mean % content during lesson	0	714	71.29	15.92	22.10	4,454	.00	1	3,742	61.82	9.11	Mean % organizational during lesson	0	714	9.51	6.25	-17.98	4,454	.00	1	3,742	13.06	4.51	Mean % group/social during lesson	0	714	9.29	8.61	-9.23	4,454	.00	1	3,742	11.22	4.12	Mean % order, discipline in lesson	0	714	7.35	5.05	-16.82	4,454	.00	1	3,742	10.21	3.98	Mean % excursions, museum	0	714	2.36	5.11	-18.28	4,340	.00	1	3,628	4.46	2.07	lvbo-mavo (0, 1; lower levels of education)	0	689	0.63	0.48	-3.97	4,846	.00	1	4,159	0.70	0.46	Havo-vwo (0, 1; higher levels of education)	0	689	0.69	0.46	-13.23	4,846	.00	1	4,159	0.88	0.32	Religious affiliation (non-religious = 0, religious = 1)	0	714	0.80	0.40	6.15	4,871	.00	1	4,159	0.69	0.46	School/location size (number of pupils)	0	714	698.72	389.88	-8.92	4,871	.00	1	4,159	863.12	465.15	Community size (number of inhabitants)	0	702	84062.49	155209.50	-8.23	4,859	.00	1	4,159	143272.14	179583.71								
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<sup>a</sup> Mean score of the items involved in the concept: See Appendix A.

**Table 2.** Univariate differences (1993 – 2000) for violence, personal, and contextual variables

Variables	1993 = 0, 2000 = 1	N	Mean	SD	t-test for equality of means		
					t	df	p (two-tailed)
Victim of physical violence <sup>a</sup>	0	1,701	0.15	0.18	5.38	5,852	.00
	1	4,153	0.13	0.17			
Victim of intentional damage <sup>a</sup>	0	1,655	0.43	0.21	10.05	5,362	.00
	1	3,709	0.36	0.22			
Perpetrator of disruptive behaviour <sup>a</sup>	0	1,725	0.51	0.31	14.15	5,909	.00
	1	4,186	0.38	0.31			
Perpetrator of intentional damage <sup>a</sup>	0	1,783	0.07	0.13	-2.98	5,958	.00
	1	4,177	0.08	0.18			
Perpetrator of premeditated physical <sup>a</sup>	0	1,678	0.15	0.20	5.20	5,694	.00
	1	4,018	0.12	0.19			
Sex: boy = 0, girl = 1	0	1,848	0.51	0.50	-1.82	6,425	.07
	1	4,579	0.54	0.50			
Secondary school year (3, 4)	0	1,998	3.45	0.50	5.01	7,304	.00
	1	4,615	3.39	0.49			
Mean % content during lesson	0	2,602	70.30	17.81	24.86	6,474	.00
	1	3,874	61.80	9.56			
Mean % organizational during lesson	0	2,601	9.70	6.56	-24.72	6,473	.00
	1	3,874	13.21	4.85			
Mean % group/social during lesson	0	2,601	8.13	6.48	-23.77	6,473	.00
	1	3,874	11.28	4.20			
Mean % order, discipline during lesson	0	2,601	7.32	5.73	-23.08	6,473	.00
	1	3,874	10.09	3.93			
Mean % excursions, museum	0	2,598	3.61	3.48	-14.88	6,225	.00
	1	3,629	4.65	2.02			
lvbo-mavo (0, 1; lower levels of education)	0	1,998	0.84	0.37	7.87	7,304	.00
	1	4,615	0.76	0.43			
Havo-vwo (0, 1; higher levels of education)	0	1,998	0.36	0.48	-62.71	7,304	.00
	1	4,615	0.91	0.28			

Table 2. (Continued)

Variables	1993 = 0, 2000 = 1	N	Mean	SD	t-test for equality of means		
					t	df	p (two-tailed)
Religious affiliation (non-religious = 0, religious = 1)	0	2,644	0.79	0.41	10.18	7,257	.00
	1	4,615	0.68	0.47			
School/location size (number of pupils)	0	1,998	609.65	508.88	-27.91	7,304	.00
	1	4,615	937.48	469.46			
Community size (number of inhabitants)	0	1,998	111538.92	173712.86	-5.17	7,304	.00
	1	4,615	132703.55	165606.00			

<sup>a</sup> Mean score of the items involved in the concept: See Appendix B.

Compared with 1993, the pupils in 2000 score lower on the two victim scales, and lower on two of the three perpetrator scales. They score higher on being a perpetrator of intentional damage to property. The contextual differences prove most significant. Compared with 1993, the pupils in 2000 spend less time on content-related lesson activities and more time on organizational, social, disciplinary, and excursion activities (see Table 2). In 2000, there were fewer pupils who attend lower level schools and more who attend higher level schools than in 1993. Pupils from the 2000 sample attend fewer religious schools, attend schools with more pupils on average, and live in bigger cities on average. Relative to 1993, slightly more Year 3 pupils participated in the 2000 survey. No significant differences were found with respect to sex.

### **Multiple regression results**

#### *Analysis*

Linear multiple regression analysis can be used to determine the combination of pupil variables and contextual variables that optimally differentiate between the secondary pupils before and after the national campaign. For a specific variable, such a multivariate analysis may produce results that differ from the results of a univariate analysis. In the multivariate regression analysis, the pupil and contextual variables are entered as the independent or predictor variables, and the year of investigation (e.g. 1991 versus 2000) constitutes the dichotomous dependent variable (Cohen & Cohen, 1975). This kind of regression analysis also resembles a discriminant analysis with year of investigation as the grouping variable (Tatsuoka, 1971). Given the inclusion of contextual variables in addition to the bullying or violence variables, the analysis can be characterized as a contextual analysis (Boyd & Iversen, 1979).

To avoid analysis complications due to forced negative or ipsative relations between the mean percentages for the lesson characteristics, the mean percentage lesson time spent on excursions was eliminated from the analyses (Tatsuoka, 1971). The multivariate analysis was then conducted in a stepwise manner with the statistically most predictive independent variable included first, followed by the next most important independent variable, and so on. When a predictor variable became non-significant it was removed from the analysis (maximum significance of  $F$  for entry was 0.050; minimum significance of  $F$  for removal was 0.051). A removed variable could always be included again at a later point. The relatively large number of pupils included allowed the pairwise exclusion of missing values.

#### *Bullying results 1991–2000*

The stepwise multiple regression analysis for bullying was conducted on the combined data from 1991 and 2000. The results are presented under in Table 3. The standardized beta coefficients are accompanied by their  $t$  coefficients to indicate the significance of the beta value.

The results for bullying show that the pupils in 2000 differ significantly from those in 1991 with respect to the following combination of variables in decreasing order of importance (as indicated by the  $t$  coefficients in Table 3):

- More frequent attendance at a school or location with a higher level of education.
- Involvement in a lower mean percentage of content activities during lessons.
- Involvement in a lower mean percentage of group/social lesson activities.

**Table 3.** Results of stepwise multiple regression analyses for bullying and violence<sup>a</sup>

Variables	Bullying 1991–2000		Violence 1993–2000	
	$\beta$	<i>t</i>	$\beta$	<i>t</i>
Being bullied directly	0.07	4.46**		
Being a bully	–0.06	–4.08**		
Bullying the teacher	–	–		
Victim of physical violence			–	–
Victim of intentional damage			–0.07	–5.40**
Perpetrator of disruptive behaviour			–0.08	–6.24**
Perpetrator of intentional damage			0.10	8.45**
Perpetrator of premeditated physical			–	–
Sex: boy = 0, girl = 1	–	–	–	–
Secondary school year	–	–	–0.03	–2.54*
Mean % content during lesson	–0.80	–13.70**	–	–
Mean % organizational during lesson	–0.13	–4.77**	0.07	5.02**
Mean % group/social during lesson	–0.46	–13.20**	0.16	10.90**
Mean % order, discipline in lesson	–0.06	–2.13*	0.18	14.03**
Ivbo-mavo (0, 1; lower levels of ed.)	–	–	–0.03	–2.88**
Havo-vwo (0, 1; higher levels of ed.)	0.23	14.10**	0.56	49.88**
Religious affiliation (0, 1)	–0.09	–5.81**	–	–
School/location size (number of pupils)	–0.08	–4.64**	–	–
Community size (number of inhabitants)	–	–	–	–
Number of significant predictors	9		9	
<i>R</i>	.43		.69	
<i>R</i> <sup>2</sup>	.19		.48	
Std. error of the estimate	0.32		0.35	

<sup>a</sup> Dependent variable: Year of investigation (bullying: 1991 = 0, 2000 = 1; violence: 1993 = 0, 2000 = 1). With bullying, the numbers of secondary pupils were in 1991: 1,055, and in 2000: 4,159. With violent behaviour, the numbers of secondary pupils were in 1993: 1,998, and in 2000: 4,615. Pairwise deletion of missing values has been used in the analyses.

\*.01 ≤ *p* ≤ .05; \*\**p* < .01.

- More frequent attendance at a non-religious school or location.
- Involvement in a lower mean percentage of organizational lesson activities.
- More frequent attendance at a smaller school or location.
- Higher scores for being bullied directly.
- Lower scores for being a bully.
- Involvement in a lower mean percentage of order and disciplinary lesson activities.

No significant differences were found with respect to bullying the teacher, being a boy or girl, school year attended, attending school in a location with lower levels of education, or community size. The multiple correlation coefficient was .43, which means that the nine significant predictor variables and year of investigation had 19% variance in common.

#### Violence results 1993–2000

As with the regression analysis of bullying, the mean percentage lesson time spent on excursions was omitted to avoid complications due to ipsative data. This time, stepwise

multiple regression analysis aimed to investigate which combination of independent variables best discriminated between the 1993 and 2000 pupils. Nine significant predictors were detected, as can be seen in Table 3. The results for pupil violence show that the pupils in 2000 differ significantly from those in 1993 with respect to the following combination of variables in decreasing order of importance (see Table 3):

- More frequent attendance at a school or location with a higher level of education.
- Involvement in a higher mean percentage of order and disciplinary lesson activities.
- Involvement in a higher mean percentage of group/social lesson activities.
- Higher scores for being a perpetrator of intentional damage to property.
- Lower scores for being a perpetrator of disruptive behaviour in school.
- Lower scores for being a victim of intentional property damage or emotional violence.
- Involvement in a higher mean percentage of organizational lesson activities.
- More frequent attendance at a school or location with a lower level of education.
- More frequent attendance at a lower school year.

No significant differences were found with respect to being a victim of physical violence, being a perpetrator of premeditated physical violence, being a boy or girl, mean percentage content activities during lessons, religious affiliation of the location or school, number of pupils or school/location size, and community size. The multiple correlation coefficient is .69, which means that the overlap in variance between the nine significant predictor variables and year of investigation was 48%.

## **Discussion**

Previous research on pupil bullying (1991) and violence (1993) stimulated the Dutch Ministry of Education, Culture and Science to initiate a national campaign to make schools safer. The campaign was conducted between 1995 and 2000. The main goals of this campaign were to increase awareness of social pupil behaviour, and to reduce pupil bullying and violence. Many different agencies at many different levels within the educational system were involved in the campaign. A broad range of strategies, materials, and instruments were developed for the purposes of the campaign. From a multi-level theoretical point of view, the national campaign agencies and materials were hypothesized to influence schools, teachers, and lesson characteristics and, thereby, to effect a shift in pupils' bullying and violent behaviour towards more prosocial ways. The research question was directed at investigating whether the scores of secondary school pupils for bullying and violence, after the conduct of the national campaign, would be lower than they were before the campaign began, while controlling for a number of relevant lesson, school and community changes, and the pupils' sex and age (school year). This question could be answered by analysing data from representative surveys with secondary pupils, teachers, and school managers carried out in 1991, 1993, and 2000.

Using stepwise multivariate regression analysis, a number of pupil bullying, lesson, school, and community variables were compared for 1991 and 2000. The results show the differences in the level of education, and various lesson and school characteristics to be relatively more important than changes in pupils' bullying behaviour. It should be noted, however, that these significant changes in pupil bullying were detected while controlling for relevant changes in the lessons, schools, and communities. From this perspective, the higher scores for being bullied directly and the lower scores for being

a bully may reflect increased social awareness of bullying between 1991 and 2000. In 2000, pupils appear to be more sensitive to the act of being bullied, and perhaps more reluctant to admit that they, themselves, have bullied.

Similarly, stepwise multivariate regression analysis was used to compare a number of pupil violence variables and lesson, school, and community variables for 1993 and 2000. The results show changes in the level of education, lesson characteristics, and aspects of pupils' violent behaviour to be most important for characterizing the differences between the secondary school pupils in 1993 and 2000. As with bullying, these changes in violence occurred while controlling for the changes in relevant lesson, school, and community characteristics. In 2000, the pupils score higher for being the perpetrator of intentional damage to property but lower for being the perpetrator of disruptive behaviour at school, and lower for being the victim of intentional property damage or emotional violence. The lower scores may reflect the behavioural correlates of increased social awareness and social control at school. The higher score for victimization may indicate that victims do fear retaliation less than before the campaign, and are aware that they can count on someone to help them. Thus, it may be that victimization did not actually increase, but was reported more by pupils in 2000 compared with before the campaign.

Within each multiple regression analysis, the weights of the independent variables are dependent on each other. Therefore, the signs of corresponding variables between the two analyses may differ, as is the case with the lesson variables (see Table 3). In this respect, the outcomes of a multivariate analysis may differ from the results of a univariate analysis (see Tables 1 and 2). In line with the multivariate theorizing, however, a common finding for both multivariate analyses is that relevant contextual and educational variables, but also pupils' social behaviour variables, differ significantly between scores obtained prior to the national campaign and those obtained after its completion. As hypothesized, these changes appear to reflect the influence of both the national campaign and other educational and reorganization or amalgamation policies. A first conclusion is, therefore, that the national campaign - in conjunction with the other policies (and while controlling for the changes in the contextual and educational variables) - positively influenced secondary pupils' social behaviour. The improvement in pupils' behaviour may be due to heightened social awareness and increased social control of undesirable behaviour, in particular, violent behaviour. This is in agreement with the main aims of the national campaign.

A second conclusion is that although the goal of stimulating social awareness of pupils' bullying and violent behaviour appears to have been met, changing the behaviour of pupils socially at risk will require much more concentrated and preventative effort. To reach such pupils, further changes to pedagogical and curricular procedures seem necessary - starting as early as kindergarten and primary school (see also Bennathan & Boxall, 1996; Hepler, 1998; Walker *et al.*, 1998). In this respect, educational policy can adopt a supportive role by ensuring that educational materials and instruments, and the organizational conditions needed to stimulate and adequately monitor each pupil, are sufficiently in place, both within and around the school. Such conditions appear to be important not only for secondary education (Beirn, Kinsey, & McGinn, 1972; Glover, Gough, Johnson, & Cartwright, 2000), but also for primary education (e.g. Jones, Gullo, Burton-Maxwell, & Stoiber, 1998; Raver & Zigler, 1997; Skinner, Bryant, Coffman, & Campbell, 1998), and teacher education (Nicolaidis, Toda, & Smith, 2002).

A third, methodological conclusion is that empirical evaluation of the impact of a national government campaign can be improved by stipulating, prior to its initiation,



which agencies are going to monitor which schools and which teachers; which (reliable and valid) pre-test and post-test instruments are going to be used to evaluate the effects of the planned intervention; and which specific intervention procedures and teacher or pupil behaviours are going to be assessed. Timely and precise multi-level measurement of behaviour within a longitudinal research design can enable adequate and detailed interpretation of the changes in the behaviour of teachers and pupils (see also Collier, 1994; Cronbach, 1983). With respect to the Dutch government campaign conducted between 1995 and 2000 to enhance safety in schools, the foregoing requirements were not met, although it has been possible to investigate its effectiveness.

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## Appendix A

Results of item reliability and homogeneity analysis for pupil bullying in 1991 and 2000

	1991 Survey			2000 Survey		
	Item rest <sup>a</sup>	$\alpha$ coeff.	N <sup>b</sup>	Item rest <sup>a</sup>	$\alpha$ coef.	N <sup>c</sup>
<i>Concept: Being bullied directly</i>		.82	1,565		.83	9,219
7: How often have you been bullied by other pupils this school year?	.74			.71		
8: In which ways have you been bullied?	.66			.69		

## Appendix A. (Continued)

	1991 Survey			2000 Survey		
	Item rest <sup>a</sup>	$\alpha$ coef.	N <sup>b</sup>	Item rest <sup>a</sup>	$\alpha$ coef.	N <sup>c</sup>
11: How often have you been bullied at school during the last five days?	.54			.60		
17: How often were you bullied at school last year?	.57			.55		
18: How often have you been bullied on the way to school this year?	.48			.51		
20: How often do other pupils say mean and irritating things to you?	.56			.56		
<i>Concept: Being a bully</i>		.81	1,591		.84	9,450
26: How often have you participated in bullying of other pupils at school this school year?	.71			.71		
27: How often have you participated in bullying of other pupils at school during the last five days?	.61			.64		
31: How often did you participate in bullying of another pupil during the last school year?	.61			.64		
32: How often have you participated in bullying of another pupil on the way to school this year?	.54			.66		
33: Do you enjoy annoying other pupils?	.56			.57		
<i>Concept: Bullying the teacher</i>		.59	1,583		.75	9,434
36: How many pupils in your class have tried to bully the teacher?	.35			.51		
37: How often have you participated in the bullying of the class-teacher?	.57			.69		
39: How often did you participate in the bullying of the class-teacher during the last school year?	.31			.56		

<sup>a</sup> Item-rest correlation. Numbers in front of items correspond to the items of Olweus' bullying instrument. All items are responded to by indicating the frequency of the specific behaviour. The only exception is Item 8, which requires the pupil to indicate the degree of being hurt physically and/or emotionally along a scale of increasing values.

<sup>b</sup> Analysis of data of 2,120 pupils in primary and secondary education (age range: 9–16); N differs because of missing values.

<sup>c</sup> Analysis of data of 9,948 secondary pupils, in years 1–6 (age range 12–18); N differs because of missing values.

**Appendix B**

Results of item reliability and homogeneity analysis for pupil violence in 1993 and 2000

Since the summer holidays, I have (been) . . .	1993 Survey			2000 Survey		
	Item restc <sup>a</sup>	$\alpha$ coeff.	N <sup>b</sup>	Item restc <sup>a</sup>	$\alpha$ coeff.	N <sup>c</sup>
<i>Concept: Victim of physical violence</i>		.70	1,701		.70	8,952
Called names by one or more pupils	.39			.37		
Threatened with violence at school	.45			.43		
Beaten or kicked at school	.48			.47		
Hurt with a weapon	.21			.30		
Blackmailed by another pupil	.30			.36		
Bothered by a group of pupils	.48			.49		
Bothered by a group outside school	.32			.35		
Bothered by other pupils at school	.43			.36		
Treated violently by other pupils at school	.39			.35		
<i>Concept: Victim of intentional property damage or emotional violence</i>		.66	1,655		.70	8,027
Called names by one or more teachers	.30			.32		
Seen a possession of mine disappear at school	.35			.37		
Robbed of something at school	.29			.37		
Seen property destroyed on purpose at school	.32			.35		
Received detention work at school	.28			.21		
Seen other pupils disturbed during a lesson	.22			.27		
Seen pupils be truant unnecessarily	.24			.34		
Seen pupils destroy school furniture	.38			.46		
Seen pupils destroy things outside the school	.45			.48		
Seen boys become aggressive	.25			.35		
Seen girls become aggressive	.27			.37		
<i>Concept: Perpetrator of disruptive behaviour in school</i>		.65	1,725		.67	9,057
Called one or more pupils names	.46			.49		
Called one or more teachers names	.41			.46		
Received detention work	.38			.40		
Disturbed a lesson	.41			.45		
Bothered other pupils at school	.38			.30		
<i>Concept: Perpetrator of intentional damage to property</i>		.66	1,783		.81	9,030
Made away with another person's property	.34			.53		
Stolen another person's property	.40			.61		
Destroyed another person's property	.39			.61		
Hurt another person with a weapon	.26			.51		
Blackmailed another pupil	.34			.45		
Destroyed school furniture	.39			.58		
Destroyed things outside the school	.44			.51		
Bothered a group of pupils	.31			.42		
<i>Concept: Perpetrator of premeditated physical violence</i>		.82	1,678		.84	8,627
Threatened another person with violence	.49			.52		
Beaten or kicked another person	.47			.47		
Become aggressive towards girls	.35			.39		
Bothered a group outside the school	.35			.45		

**Appendix B. (Continued)**

Since the summer holidays, I have (been) . . .	1993 Survey			2000 Survey		
	Item rest <sup>a</sup>	$\alpha$ coeff.	N <sup>b</sup>	Item rest <sup>a</sup>	$\alpha$ coeff.	N <sup>c</sup>
Estimated whether violence would be profitable	.42			.42		
Estimated how big the chances of getting caught are	.41			.44		
Prepared an act of violence	.54			.58		
Prepared violence with a group	.55			.60		
Involved in violence at school	.51			.53		
Taken a weapon to school	.54			.55		
Involved in violence outside the school	.49			.55		
Armed outside the school	.56			.56		
Used violence against other pupils at school	.42			.44		

<sup>a</sup> Item-rest correlation, in this case, a biserial correlation.

<sup>b</sup> Analysis of data of 1,998 pupils in secondary education (age range: 13–16 years); N differs because of missing values.

<sup>c</sup> Analysis of data of 9,948 secondary pupils (age range: 12–18 years); N differs because of missing values.