

HARTER'S SELF-PERCEPTION PROFILE FOR CHILDREN: Factor structure, reliability, and convergent validity in a Dutch-speaking Belgian sample of fourth, fifth and sixth graders

Bea R.H. VAN DEN BERGH

Population and Family Study Centre

Alfons MARCOEN

Catholic University of Leuven

The aim of this study was to evaluate the psychometric qualities of the scores of a Dutch version of Harter's Self-Perception Profile for Children (SPPC) and to examine gender and grade differences. Participants were 760 Dutch-speaking Belgian fourth, fifth and sixth graders. Harter's Teacher Rating Scale of Child's Actual Behaviour (TRS) was used to test one aspect of the convergent validity of the SPPC scores. Factor analyses supported the five-factor solution of the SPPC and the TRS. The internal consistency values of the SPPC and TRS subscale scores indicate that each dimension could be reliably measured. Significant cross-informant correlations (convergent validity) were found for almost all subscale scores in all gender and grade groups. ANOVAs conducted on subscale means revealed significant main effects for gender and grade. Boys had higher scores on all subscales except Behavioural Conduct. Younger children scored higher on Physical Appearance and Behavioural Conduct. Physical Appearance was the best predictor of Global Self-worth for boys and girls and for each grade group.

Introduction

Considering oneself as a competent and worthy person is an important aspect of the optimal development of children and adolescents. Lack of sufficient self-esteem often underlies psychological problems and can interfere with successful development in the adult years.

Research in developmental psychology as well as clinical psychological practice with children need reliable and valid psychometrically sound instruments for the assessment of self-concept, self-esteem, and perceived competence. Studies of children's self-concept have been dominated by a focus on the self, studied as a unidimensional concept and without taking into consideration

Bea R. H. Van den Bergh, Population and Family Study Centre (CBGS), Brussels; Alfons Marcoen, Centre for Developmental Psychology.

This study was conducted as part of a project funded by the Population and Family Study Centre of the Flemish Government, Brussels, in co-operation with the Centre for Developmental Psychology of the University of Louvain. The authors would like to express their gratitude to Prof. R. Cliquet, Head of the Population Family Study Centre, M. Callens for his help with the sampling procedure, Dr. Nancy Van Ranst for her assistance with statistical analysis, Prishnee Datta for her helpful linguistic suggestions, the secretary of the Population and Family Study Centre for her help in several parts of the study, and all children, parents, teachers, school directors, and students for their co-operation.

Correspondence concerning this article should be addressed to B.R.H. Van den Bergh, CBGS, Markiesstraat 1, 1000 Brussels. Electronic mail may be sent to: cbgs@wvc.vlaanderen.be.

developmental changes. Among others Wylie (1961/1974, 1979, 1989) and Shavelson, Hubner and Stanton (1976) are very frequently cited as authors who extensively criticized the research literature from earlier periods, pointing to theoretical and methodological limitations in definition, measurement and interpretation of the self. Today, empirical research is available which clearly supports the multidimensionality of the self-concept (see Byrne, 1996; Harter, 1983; Marsh & Holmes, 1990; Marsh, Relich & Smith, 1983). Changes in the design of self-concept instruments contributed a lot to this development. Unlike earlier frequently used measures (e.g., Coopersmith, 1967; Piers, 1984; Piers & Harris, 1964), recently developed instruments are designed to measure a priori dimensions that are based on a theoretical model or have a clear rationale and are established through factor analysis (Harter, 1983; Marsh & Holmes, 1990). The multidimensional self-concept instruments for different age groups of Harter (1982, 1985, 1988; Harter & Pike, 1984), developed in the U.S.A., and those of Marsh and coworkers (e.g., Marsh, 1988; Marsh et al., 1991 and see Byrne, 1996 for an overview) developed in Australia, became more and more important in the international self-concept research of the last 15 years. Their scales have been cross-validated on several populations (for an overview see Van den Bergh & Van Ranst, 1998). In the present study we focus on the Harter scales which are used in the Netherlands and Flanders.

Harter (1983, 1985, 1998) regards the self-concept as a multi-dimensional phenomenon. Besides their global self-evaluation, adults consider themselves from different perspectives. When asked to evaluate themselves, children will pay attention to their cognitive abilities, their physical skills, and their relations with their parents and peers. They are able to judge their specific characteristics and competences. As they grow older, their self-concept changes as new dimensions are considered. Children aged eight and over should also be able to arrive at global judgements of themselves. Global self-worth is based on self-evaluations made along different dimensions and their relevance to a global sense of self. In general the self-concept is less differentiated among young children. Harter (1983) hypothesized that as a child develops, self-descriptions become more differentiated and integrated.

The Harter scales have been translated into different languages (for the Dutch translations see Swennenhuis & Veerman, 1995). The Self Perception Profile for Children (SPPC) measures the self-concept in 8- to 12-year-olds and consists of six subscales, one subscale measures Global Self-worth, and the other five subscales assess distinct dimensions of perceived competence, namely: (1) Scholastic Competence, (2) Social Acceptance, (3) Athletic Competence, (4) Physical Appearance, (5) Behavioural Conduct. The SPPC is a revised version of the Perceived Competence Scale for Children (Harter, 1979, 1982). Research has shown that the SPPC has good psychometric qualities cross-culturally, namely, in Canada (French version: Boivin, Vitaro,

& Gagnon, 1992), China (Meredith, Abbott, & Ming, 1992), Germany (Asendorpf & Van Aken, 1992), Ireland (Granleese & Joseph, 1993a, 1994a, 1994b), Italy (Pedrabissi, Santinello, & Scarpazza, 1988), the Netherlands (van Dongen-Melman, Koot, & Verhulst, 1993; Veerman, Straathof et al. 1994, 1997), Portugal (Peixoto & Mata, 1993) and Scotland (Hoare, Elton, Greer, & Kerley, 1993). The samples on which the Dutch versions of the SPPC were validated were neither representative of the intended population of 8- to 12-year-olds, nor large ($N=300$, van Dongen et al., 1993; $N=36$, Veerman et al., 1997).

In the past, research on gender and/or grade or age differences in the SPPC subscale means often yielded contradictory results (see Clever, Bear & Juvonen, 1992; Cole, 1991; Granleese & Joseph, 1993a, 1993b, 1994b; Harter, 1985; Meredith et al., 1992; van Dongen-Melman et al., 1993; see Swennenhuis & Veerman, 1995, for a review of gender and age differences obtained with Dutch versions of the SPPC). One of the more consistent findings is boys scoring higher than girls especially on Athletic Competence and Physical Appearance but also on Scholastic Competence and Global Self-worth, and girls scoring higher on Behavioural Conduct. Gender differences were not found for Social Acceptance. Age differences were less frequently observed. In general, older children scored lower than younger children on Global Self-worth and Behavioural Conduct. Studies in which the pattern of intercorrelations between the SPPC subscales is examined (Granleese, Trew, & Turner, 1988; Granleese & Joseph, 1993a, 1994b; Harter, 1985; Straathof, Treffers, Siebelink & Goedhart, 1991; van Dongen-Melman et al., 1993; Veerman, Straathof, Treffers, Van den Bergh, & ten Brink, 1977) lead to the general conclusion that of all the intercorrelations, the one between Global Self-worth and Physical Appearance is the highest. This finding is confirmed in studies that examine Harter's contention that the child's Global Self-worth is based in part on the self-evaluations made along specific self-concept dimensions. In studies performing multiple regression analyses on Global Self-worth, using the scores on the five specific subscales as predictors (Boivin et al., 1992; Granleese & Joseph 1994a), Physical Appearance seemed to be the best predictor of Global Self-worth across gender and grade. Boivin et al. (1992) and Van den Bergh and Van Ranst (1998) focused on the correlation between the factors of the SPPC subscales (as suggested by Byrne, Shavelson & Marsh, 1993, in cases where there is no invariance of structure) and found that in general the correlations were higher in the younger age group, especially those between Scholastic Competence on the one hand and Behavioural Conduct and Physical Appearance on the other. These findings confirm the hypothesis of Harter that older children have a more differentiated self-concept than younger children. Similar results were obtained with other self-esteem scales (e.g., Marsh & Hocevar, 1985).

Byrne et al. (1993) argued that the testing of between-group invariance

should precede all multi-group analyses. If the condition of between-group invariance is not met then the basis for the comparison of the test scores is unstable and results become difficult to interpret. If the self-concept has a similar structure, scaling unit and reliability across different groups, then observed differences in SPPC subscale means can be attributed to actual differences in the level of self-concept. Veerman, Straathof, ten Brink and Treffers (1996) tested their Dutch version of the SPPC for invariance across normal and clinical groups. By means of a LISREL confirmatory factor analytic model, Van den Bergh and Van Ranst (1998) tested the same Dutch version for both equivalence of measurement and structure across gender and grade groups. Support was found for the equivalence of structure in the underlying concept across gender groups, in fourth and fifth, and fifth and sixth graders. In these groups the pattern and size of relationships among the SPPC subscales measuring specific dimensions of self-concept were equivalent, and group comparisons relevant. However, when comparing the observed SPPC subscale means of fourth and sixth graders one has to be cautious because the structure of the underlying concept is not equivalent for fourth and sixth graders. As mentioned before, it is then better to focus on differences in the relationships between factors (Byrne et al., 1993). Equivalence of measurement was partially found: the relations between items and factors were invariant across gender and grade. However, the error of measurement was not equivalent. This indicated that the items did not have the same reliability for boys and girls and across all grade groups.

The present study aimed at (a) the further examination of the factorial structure of the Self-Perception Profile for Children using a confirmatory factor analytic model on the total sample, the internal consistency of the scores obtained, one aspect of the convergent validity of the subscale scores, and (b) the exploration of gender and grade differences, in a Dutch-speaking Belgian sample of fourth, fifth and sixth graders. To test one aspect of the convergent validity of the subscale scores we used teachers' scores on the Teacher Rating Scale of Child's Actual Behaviour (TRS; Harter, 1985) which is a questionnaire that parallels the SPPC. The teacher rates the child's actual behavior in each of the five specific domains of competence. These ratings are considered as the teacher's independent judgement of the child's adequacy in each domain (Harter, 1985, p. 12). The correlation between SPPC and TRS scores give some indication about the accuracy of the child's perception of his or her competence in different domains. Significant cross-informant correlations can be interpreted as reflecting the degree to which children's self-evaluations are veridical (Harter, 1998). The factor structure of the TRS and the internal consistency of TRS subscales scores were first evaluated. In addition gender and grade differences in SPPC subscale means and in the intercorrelations between the five specific competence scales and Global Self-worth, were analysed.

The main reason for the present investigation was the fact that neither the Dutch version of the SPPC introduced by Veerman (1989) nor any Dutch version of the TRS (Harter, 1985) had been included in a validation study on a large, nonclinical and representative sample of boys and girls in the appropriate age range.

Method

Participants

The sample consisted of 760 children (402 boys and 358 girls) between 8 and 12 years who completed the SPPC. Of these 760 children 313 attended the fourth grade (from 24 classes, mean age = 9 years 1 month), 212 the fifth grade (from 16 classes, mean age = 10 years 2 months) and 235 the sixth grade (from 18 classes, mean age = 11 years 2 months). The participants of the study formed a part of a larger study which investigated the nature and quality of living conditions and competence of primary school children ($N=1798$) in a representative sample of 68 primary schools of the Flemish Community (Belgium) (Van den Bergh, 1997). Only children whose parents who had given informed consent participated in this study (85.4 % permission rate).

Instruments and Procedure

Self-Perception Profile for Children (SPPC; Harter, 1985). Veerman's Dutch version of the SPPC (Harter, 1985) was used. The SPPC is a 36-item scale subdivided into six 6-item subscales. Five of these subscales assess discrete dimensions of the self-concept. These dimensions are Scholastic Competence, Social Acceptance, Athletic Competence, Physical Appearance and Behavioural Conduct. The same format is used in the sixth subscale which measures Global Self-worth. The items are formulated as bipolar statements, for example 'Some kids often forget what they learn' but 'Other kids can remember things easily'. First, the child has to decide, the kind of child he/she is, and then report if the description is 'sort of true' or 'really true' for him/her. Each item is scored from 1 to 4 (with some items scored inversely), a high score reflecting a higher degree of perceived competence.

Teacher Rating Scale of Child's Actual Behaviour (TRS; Harter, 1985, p. 12). This questionnaire consists of five 3-item subscales which parallel the five specific self-perception subscales of the SPPC. For each of the five specific domains, the teacher rates the child's actual behavior and not how he/she thinks the child would answer. The response format is basically the same as on the

child's version. We translated the scale in Dutch and added three items similar to the SPPC subscale of Global Self-worth; item 6: 'This kid can be happy with himself or herself' or 'This kid has reasons not to be happy with himself or herself'; item 12: 'This kid's life is nice like it is now' or 'This kid's life is not nice like it is now'; item 13: 'This kid can be pleased with himself or herself as a person' or 'This kid has not many reasons to be pleased with himself or herself'.

General Procedure

The SPPC was administered to the children in class sessions, in their regular classrooms by trained research assistants. The administration of the SPPC lasted about half an hour and passed off smoothly; administration of all questionnaires of the large-scale investigation lasted about two hours. During the administration the teachers completed the TRS for each participating child in their classroom.

Statistical Analysis

The factor structure of the scores on the SPPC and TRS were evaluated using confirmatory factor analyses performed with LISREL8 (Jöreskog & Sörbom, 1993); SPSS 6 was used for all other statistical analyses. In keeping with Harter's (1985) assumption that a judgement of global self-worth is qualitatively different from judgements of specific aspects of the self, we only included scores on the five specific dimensions of the self concept in our analysis. The internal consistency of the scores on the six SPPC and TRS subscales was ascertained (Cronbach's alpha) for the different groups, i.e., the total sample, boys, girls, fourth, fifth and sixth graders. For each of these groups one aspect of the convergent validity of the SPPC subscales scores was tested by Pearson product-moment correlations of these scores with the scores on the corresponding TRS subscales.

ANOVAs were performed to determine gender and grade differences in SPPC subscale means and multiple regression analyses were performed on Global Self-worth using the scores on the five specific self-concept subscales as predictors.

Table 1
Factor Loadings of the SPPC and TRS Items and Fit Indices of the LISREL models
for the Total Sample (n=760)

	Factor					
Item Description	I	II	III	IV	V	
Scholastic Competence						
1. Good at schoolwork	.49/.79 ¹					
7. As smart as peers	.58					
13. Do schoolwork quickly	.52					
19. Remember things easily	.63/.93 ¹					
25. Do well at school	.60					
31. Can figure out answers	.58/.87 ¹					
Social Acceptance						
2. Easy to make friends		.50/.77 ¹				
8. Have a lot of friends		.69/.78 ¹				
14. Have as much friends as they want		.72				
20. Do things with a lot of kids		.39				
26. Most peers like them		.54				
32. Popular with peers		.43/.65 ¹				
Athletic Competence						
3. Do well at sports			.71/.77 ¹			
9. Good enough at sports			.63			
15. Easily join a new sport			.57			
21. Better than others at sports			.61/.76 ¹			
27. Play rather than watch			.35			
33. Good at new outdoor games			.56/.76 ¹			
Physical Appearance						
4. Happy with the way they look				.60/.63 ¹		
10. Happy with height and weight				.51/.48 ¹		
16. Like body the way it is				.64		
22. Like physical appearance as it is				.82		
28. Like face and hair as it is				.70/.64 ¹		
34. Are good looking				.64		
Behavioural Conduct						
5. Like the way they behave					.30/.75 ¹	
11. Act the way supposed					.56/.78 ¹	
17. Act as is expected					.51/.76 ¹	
23. Don't get in trouble					.43	
29. Don't do things they shouldn't do					.50	
35. Behave correctly					.50	
Fit indices of the LISREL models						
	χ^2	df	p	χ^2/df	AGFI	RMSEA
SPPC	935.8	395	.00	2.36	.91	.040
TRS	252.55	80	.00	3.15	.92	.058

Note. Items were estimated only under their expected latent factor. The other loading were fixed to 0 and do not appear in the table.

¹Factor loading of TRS items.

Results

Confirmatory Factor Analysis on the SPPC and TRS Scores

The five factor model was tested respectively for the SPPC scores and the TRS scores, using covariance and the maximum likelihood method of estimation. The six (SPPC) or three (TRS) items of the corresponding subscales always loaded on a specific factor, the other loadings being fixed to 0. Correlations between the five factors were permitted (analogous to an oblique rotation), but error covariances between the items were set to 0. The overall fit of the two models was reasonably good. The assessment of the fit was based on several criteria: the χ^2 test, the χ^2/df ratio, the adjusted goodness-of-fit index (AGFI), and the root mean square error of approximation (RMSEA). The χ^2 will nearly always be statistically significant, even when there is a reasonably good fit to the data, in models in which there are many variables and many degrees of freedom. The χ^2/df ratio is a more representative index of fit (Marsh & Hocevar, 1985; Tanaka, 1987), but is also artifactually inflated by large sample sizes. The AGFI considers sample size and measures how much better the model fits as compared to no model at all. RMSEA with a value of 0.05 or smaller indicates a close fit of the model (Jöreskog & Sörbom, 1993). The LISREL estimates of the factor loadings for the total group of the SPPC and TRS items and the fit indices of the LISREL-models are given in Table 1.

Internal Consistency of the SPCC and TRS Subscale Scores

The internal consistency of the subscale scores was evaluated separately for the total group and for each gender and grade group. Moderately high degrees of internal consistency were obtained for all SPPC subscale scores (all Cronbach's alphas between .70 and .84; see Table 2) and high degrees of internal consistency were obtained for all TRS subscale scores (all Cronbach's alphas at least .80; see Table 2) in all groups. It is concluded that the homogeneity is acceptable for both the SPPC and TRS subscales.

Table 2

Cronbach's Alphas of SPPC and TRS Subscales Scores for Total Sample and by Gender and Grade

SPPC-Subscales	Total sample (n=760)	Gender		Grade		
		Boys (n=402)	Girls (n=358)	4 (n=313)	5 (n=212)	6 (n=235)
Scholastic Competence	.79	.76	.83	.73	.83	.83
Social Acceptance	.75	.73	.75	.74	.72	.77
Athletic Competence	.76	.73	.77	.75	.78	.75
Physical Appearance	.83	.81	.82	.83	.79	.84
Behavioural Conduct	.73	.74	.73	.70	.76	.75
Global Self-worth	.76	.74	.77	.72	.76	.79

TRS-Subscales	Total sample (n=640)	Gender		Grade		
		Boys (n=351)	Girls (n=289)	4 (n=300)	5 (n=173)	6 (n=167)
Scholastic Competence	.92	.93	.92	.92	.94	.91
Social Acceptance	.92	.93	.90	.90	.92	.93
Athletic Competence	.94	.95	.94	.93	.95	.96
Physical Appearance	.83	.83	.83	.82	.84	.82
Behavioural Conduct	.93	.94	.91	.93	.92	.94
Global Self-worth	.86	.87	.84	.88	.80	.89

Convergent Validity of the SPPC Scores

In order to evaluate the convergent validity of the scores on the SPPC subscales for the different groups, Pearson product-moment correlations were computed between the scores on the corresponding subscales of the SPPC and the TRS. Table 3 reveals that all correlations between the self-evaluation of the pupils and the teacher's ratings were significant, except with regard to Physical Appearance for fourth graders ($r=.11$) and Global Self-worth for sixth graders ($r=.05$). However, the correlations were rather weak. Self-evaluation scores correlated strongest with the teachers' ratings on Scholastic Competence. The correlations between the SPPC subscale scores and the teachers' ratings on the corresponding TRS subscales were weakest with regard to Physical Appearance and Global Self-worth.

Table 3
*Pearson Correlations Between Corresponding Subscales Scores of SPPC and TRS,
 Total Sample and Gender and Grade*

Subscales	Total sample (n=598)	Gender		Grade		
		Boys (n=328)	Girls (n=270)	4 (n=276)	5 (n=165)	6 (n=157)
Scholastic Competence	.53***	.50***	.58***	.53***	.52***	.54**
Social Acceptance	.31***	.22***	.41***	.31***	.33***	.29**
Athletic Competence	.36***	.35***	.40***	.36***	.38***	.35**
Physical Appearance	.15***	.12*	.20**	.11	.16*	.20*
Behavioural Conduct	.23***	.21***	.25**	.23***	.24**	.23*
Global Self-worth	.15***	.16**	.16**	.18**	.18*	.05

$p < 0.5$. ** $p < .01$. *** $p < .0001$.

Gender and Grade Differences in SPPC Subscale Means

Table 4 presents all subscale means and standard deviations for the total sample, gender and grade groups. The means of all SPPC subscales were significantly higher than the midpoint of the scale. In the total sample means were highest for Global Self-worth and Physical Appearance (3.10 and 3.08 respectively) and lowest for Scholastic Competence (2.68).

A two-way ANOVA was performed with gender and grade as independent variables. This analysis did not reveal any statistically significant interaction effects. Statistically significant main effects are given in Table 4. For all SPPC subscale scores - except for Behavioural Conduct - there was a main effect for gender, with boys scoring systematically higher than girls. For Social Acceptance, Athletic Competence, Physical Appearance and Global Self-Worth the differences are significant at a critical p level of .001. However, even for these scales the differences between the means were smaller than half a standard deviation. There were only two main effects for grade; these too were rather small in size. Fourth graders had a statistically significant higher mean score than fifth and sixth graders on the Physical Appearance subscale. For Behavioural Conduct also a grade effect was obtained. However paired comparison with the Bonferroni and Tukey-HSD test turned out to be non-significant.

In addition, we report that the results of t -tests (on gender differences for the three grades separately) and one-way analyses of variance (differences across grades for boys and girls separately) showed slight differences that no longer

Table 4
Means and Standard deviations of SPPC Subscales Scores for Total Sample and by Gender and Grade and ANOVA-results

Subscales	Total sample (n=760)	Gender			Grade			Main effects	
		Boys (n=402)	Girls (n=358)		4 (n=313)	5 (n=212)	6 (n=235)	Gender F(1,754)	Grade F(1,754)
Scholastic Competence	2.68 0.64	2.72 0.62	2.63 0.67		2.71 0.60	2.65 0.68	2.66 0.67	3.55*	
Social Acceptance	2.94 0.63	3.03 0.62	2.83 0.62		2.97 0.63	2.92 0.59	2.92 0.64	19.51***	
Athletic Competence	2.91 0.65	3.03 0.63	2.77 0.65		2.94 0.66	2.84 0.66	2.92 0.63	30.03***	
Physical Appearance	3.08 0.72	3.24 0.68	2.91 0.73		3.20 0.71	3.04 0.67	2.96 0.75	32.97***	5.21**
Behavioural Conduct	2.80 0.55	2.78 0.57	2.82 0.52		2.86 0.53	2.75 0.55	2.77 0.56		4.21*
Global Self-worth	3.10 0.60	3.17 0.58	3.01 0.60		3.15 0.58	3.06 0.60	3.05 0.62	12.28***	

* $p < .05$. ** $p < .01$. *** $p < .001$.

appeared significant in the two-way analysis of variance (see Van den Bergh, 1996). We also found, for example, that girls scored higher than boys on Behavioural Conduct, but only in the fourth grade, $t(236.70) = -2.28, p < .05$.

Gender and Grade Differences in the Intercorrelations Between SPSC Subscales

The pattern and size of relationships among the factors of the SPSC subscales measuring specific dimensions of self-concept were equivalent across gender but were not equivalent across grade (Van den Bergh & Van Ranst, 1998).

In order to examine Harter's contention that the child's global self-worth is based in part on the specific dimensions of the self-concept, separate multiple regression analyses were performed - for both gender and grade - on Global Self-worth scores using the five specific self-perception subscale scores as predictors.

Gender differences in the prediction of Global Self-worth. We found that - with the exception of the Athletic Competence subscale - almost all the scores on the specific self-perception subscales correlated more strongly with the Global Self-worth score than among themselves, for boys as well as for girls. The intercorrelations between the specific subscales scores were almost all statistically significant ($p < .001$) but rather low (boys: r 's between .04 and .45, and median $r = .30$; girls: r 's between .07 and .44, and median $r = .35$). Results of the separate multiple regression analyses performed on Global Self-worth using the five specific self-perception subscale scores as predictors are presented in Table 5. Since, the intercorrelations between the predictor variables are low, there is no problem of 'collinearity' and no need to use structure coefficients instead of β -weights as indices of effects (Thompson & Borello, 1985). A large percentage of variance in Global Self-worth was accounted for by the specific subscales: 53% for boys and 63% for girls. For both boys and girls, Physical Appearance had the highest β -weight ($\beta = .50, p < .001$ for both). Important too were Scholastic Competence ($\beta = .19, p < .001$), Behavioural Conduct ($\beta = .16, p < .001$) and Social Acceptance ($\beta = .13, p < .001$) for boys, Behavioural Conduct ($\beta = .24, p < .001$), Social Acceptance ($\beta = .16, p < .001$) and Scholastic Competence ($\beta = .13, p < .001$) for girls. Neither for boys nor for girls did Athletic Competence yield a significant contribution.

Grade differences in the prediction of Global Self-worth. Results indicated that (with the exception of the Athletic Competence subscale) almost all the scores on the specific self-perception subscales correlated more strongly with the Global Self-worth score than among themselves, for all grades. The intercorrelations between the scores on the different subscales were rather low (fourth grade r 's between .11 and .50 median $r = .31$; fifth grade r 's between

Table 5
Multiple Regression of Global Self-Worth on SPPC Subscales Scores (β -weights)

Predictors	Gender		Grade		
	Boys (<i>n</i> =402)	Girls (<i>n</i> =358)	4 (<i>n</i> =313)	5 (<i>n</i> =212)	6 (<i>n</i> =235)
Scholastic Competence	.19***	.13***	.22***	.18***	.09
Social Acceptance	.13***	.16***	.12**	.12*	.17***
Athletic Competence	.05	-.01	.03	-.06	.09
Physical Appearance	.50***	.50***	.52***	.53***	.47***
Behavioural Conduct	.16***	.24***	.14***	.21***	.27***
R^2	.53	.63	.59	.60	.56
Adj. R^2	.53	.63	.59	.59	.56

* $p < .05$. ** $p < .01$. *** $p < .001$.

.01 and .43 and median $r = .26$; sixth grade: r 's between .00 and .42, median $r = .32$). Based on the multiple regression analysis of Global Self-worth on the specific subscales (see Table 5), it appeared that in the fourth grade Physical Appearance had the highest β -weight ($\beta = .52, p < .001$) followed by Scholastic Competence ($\beta = .22, p < .001$) and Behavioural Conduct ($\beta = .14, p < .001$). In the fifth grade the highest β -weights were found for Physical Appearance ($\beta = .53, p < .001$), Behavioural Conduct ($\beta = .21, p < .001$) and Scholastic Competence ($\beta = .18, p < .001$). In the sixth grade the highest β -weight found was again on Physical Appearance ($\beta = .47, p < .001$) followed by Behavioural Conduct ($\beta = .27, p < .001$) and Social Acceptance ($\beta = .17, p < .001$). Specific self-perceptions explained 59% of the variance, in Global Self-worth in the fourth and fifth grade and 56% in the sixth grade.

Discussion

The Self Perception Profile for Children (SPPC) and the Teacher Rating Scale of Child's Actual Behaviour (TRS) proved to have good psychometric qualities in a representative sample of Dutch-speaking Belgian (Flemish) school age children. With respect to content validity it can be stated that the estimated parameters and goodness-of-fit indices of the confirmatory factor analyses supported the five factor structure of the data for both SPPC and TRS. The internal consistency coefficients of the scores on the SPPC and TRS subscales indicate that in all gender and grade groups, the (self)-perception of

competence can be reliably measured in all domains.

As for the convergent validity of the SPPC, it was found that the correlations between the scores on corresponding subscales of the SPPC and the TRS were statistically significant, but rather low. The correlation was substantial only for Scholastic Competence. This is not an unexpected result. Indeed, it can be assumed that communication between teacher and pupil about scholastic competence is mostly direct through evaluations, tests and school reports. Several authors have argued for detaching the evaluation of convergent validity from the matter of correlations between information obtained from different individuals (in this case from both the child and the teacher). The fact that correlations between self-evaluation and judgement by others are low (in a review article by Achenbach, McConaughy and Hovell (1987) for 119 studies only $r = .22$ on average) does not necessarily point to low validity of scores on the measuring instrument or the invalidity of somebody's judgment. Rather, it requires that the two ratings be regarded as two separate observations, both of which provide meaningful information from different sources. At the same time it means that information from one source, cannot replace information from the other source (Achenbach et al., 1987; Harter, 1982; Hughes, 1984). In the present study the correlations between the scores of most of the subscales for the different groups ranged between .05 and .41; for Scholastic Competence they ranged between .50 and .58. These results are comparable to the findings reported by other investigators. Harter (1982) found correlations between scores on the Perceived Competence Scale for Children and the ratings of the child's actual behaviour by the teacher ranging between .27 and .55. Boivin et al. (1992) reported correlations between scores on the SPPC subscales and teacher ratings between .19 and .43. For the dimension of Scholastic Competence correlation coefficients ranged between .35 and .60.

The fact that the correlations were lowest with regard to Physical Appearance and Global Self-worth can be explained by the wording of the items in the scales. Indeed, in these scales the children were asked to evaluate themselves, to give an appreciation of their satisfaction (how much they like, or are happy with) and not merely their perception, whereas the teacher had to evaluate how attractive and good-looking the children were (Boivin et al., 1992).

Caution is in order when interpreting our findings on gender differences in SPPC subscale means. In our study as well as in other studies the differences found are rather small. In our sample boys scored higher than girls on all subscales except Behavioural Conduct on which girls scored higher than boys in the fourth grade. That boys scored higher than girls on Social Acceptance was not found in other investigations. Because of the equivalence of structure of the underlying concept for boys and girls in the Dutch SPPC version (Van den Bergh & Van Ranst, 1998), we may interpret gender differences in the present study as real. Boys in general really perceive themselves as more

competent. Girls - particularly the younger ones - consider themselves as "well-behaved" and "good". These findings may suggest that gender stereotypes are already strongly internalized in pre-adolescents.

Our results on grade differences were in line with the findings of van Dongen-Melman et al. (1993). Younger children had significantly higher scores than older children on Behavioural Conduct and on Physical Appearance. Older children apparently are more critical (or more realistic) about their behaviour and their physical appearance. The grade differences found are only partially similar to Harter's (1985) findings. She found that children's scores on Scholastic Competence and Global Self-worth decrease with age. However, caution is in order when comparing the scores of fourth graders with those of fifth/sixth graders because the underlying self-concept does not have the same structure in both groups (Van den Bergh & Van Ranst, 1998).

Physical Appearance correlated highest with Global Self-worth for both boys and girls, and at all grades. This is a finding which was also reported by most other authors (Granleese et al., 1988; Granleese & Joseph, 1993a, 1994b; Harter, 1985; Straathof et al., 1991; van Dongen-Melman et al., 1993; Veerman et al., 1997). Boivin et al. (1992) related this high correlation and the fact that at all grade levels Physical Appearance made the largest contribution to Global Self-worth, again to differences in item content of the scales. It is precisely in the latter two scales that the respondent is required to give an appreciation (satisfaction with one's physical appearance and global self-worth) instead of a perception of the degree of competence, as is the case with the other scales.

The results of the multiple regression analyses on Global Self-worth revealed only small differences between boys and girls. This is in line with the finding that the pattern and size of relationships between the scores on the subscales measuring specific dimensions of self-concept is equivalent across gender (Van den Bergh & Van Ranst, 1998). Besides Physical Appearance, all other subscales but Athletic Competence contributed significantly ($p < .001$) to Global Self-worth. The second best predictor of Global Self-worth was Scholastic Competence for boys and Behavioural Conduct for girls. However, differences in β -weights for Behavioural Conduct, Scholastic Competence and Social Acceptance were small.

Like Boivin et al. (1992) we found in the multiple regressions of Global Self-worth scores on the dimensional self-perception subscale scores the highest β -weight for Physical Appearance in all age groups. Besides, all scales were found to have significant β -weights with the exception of Athletic Competence (in all groups) and Scholastic Competence in the sixth grade. In the study by Boivin et al. (1992), Scholastic Competence only showed a significant β -weight in the sixth grade. However, concerning the general sense of self-worth, Granleese and Joseph (1994a) found the highest β -weights on Physical Appearance for 8-year-olds as well as for 11-year-olds. In addition, they found

significant β -weights for 8-year-olds on Social Acceptance and Scholastic Competence and for 11-year-olds on Scholastic Competence only. The results obtained in our sample indicated that with increasing age the importance (significance of β -weight) of Physical Appearance and Behavioural Conduct remains more or less the same while the importance of Social Acceptance increases and the importance of Scholastic Competence decreases.

As Boivin et al. (1992) suggested, it might be necessary to extend the SPPC investigations using a reformulated version of Global Self-worth and Physical Appearance subscale items in order to provide more definite statements about gender and age differences in the relative importance of the specific competencies for Global Self-worth.

The psychometric qualities of the SPPC and of the TRS have been empirically established cross-culturally. The results of the present study on a Dutch-speaking Belgian (Flemish) sample highly reconfirm research findings obtained in other countries. Our findings strengthen the obvious preference for the use of the SPPC in cross-cultural comparative self-concept research with children (Hughes, 1984). Our study extends the empirical evidence for the multidimensionality of the self-concept. It also clearly shows that the pattern of gender and grade differences is not the same for all domains of competence, and reveals that Physical Appearance is the best predictor of Global Self-worth for boys and girls, and in grade four, five and six.

References

- Achenbach, T. M., McConaughy, S. H., & Howell, C. T. (1987). Child/adolescent behavioral and emotional problems: Implications of cross-informant correlations for situational specificity. *Psychological Bulletin*, 101, 213-132.
- Asendorpf, J. B., & Van Aken, M. A. (1993). Deutsche Versionen der Selbstkonzeptskalen von Harter [German version of Harter's self-concept scales for children]. *Zeitschrift für Entwicklungspsychologie und Pädagogische Psychologie*, 25, 64-86.
- Boivin, M., Vitaro, F., & Gagnon, C. (1992). A reassessment of the Self-Perception Profile for Children: Factor structure, reliability, and convergent validity of a French version among second through sixth grade children. *International Journal of Behavioural Development*, 15, 275-290.
- Burns, R.B. (1979). *The self-concept: Theory, measurement, development and behaviour*. London: Longman.
- Byrne, B.M. (1996). *Measuring self-concept across the life span: Issues and instrumentation*. Washington, DC: American Psychological Association.
- Byrne, B. M., & Schneider, B. H. (1988). Perceived competence scale for children: Testing for factorial validity and invariance across age and ability. *Applied Measurement in Education*, 1, 171-187.
- Byrne, B.M., Shavelson R.J., & H.W. Marsh (1993). Multi-group comparisons in self-concept research: Reexamining the assumption of equivalent structure and

- measurement. In T.M. Brinthaupt & R.P. Lipka (Eds.), *The self, definitional and methodological issues* (pp. 172-203). Albany, NY: State University of New York Press.
- Clever, A., Bear, G. G., & Juvonen, J. (1992). Discrepancies between competence and importance in self-perceptions of children in integrated classes. *Journal of Special Education*, 26, 125-138.
- Cole, D. A. (1991). Change in self-perceived competence as a function of peer and teacher evaluation. *Developmental Psychology*, 27, 682-688.
- Coopersmith, S. (1967). *Self-esteem inventories*. Palo Alto, CA: Consulting Psychologists Press.
- Granleese, J., Trew, K., & Turner, I. (1988). Sex differences in perceived competence. *British Journal of Social Psychology*, 27, 181-184.
- Granleese, J., & Joseph, S. (1993a). Factor analysis of the Self-Perception Profile for Children. *Personality and Individual Differences*, 15, 343-345.
- Granleese, J., & Joseph, S. (1993b). Self-perception profile of adolescent girls at a single sex and a mixed sex school. *Journal of Genetic Psychology*, 154, 525-530.
- Granleese, J., & Joseph, S. (1994a). Further psychometric validation of the Self-Perception Profile for Children. *Personality and Individual Differences*, 16, 649-651.
- Granleese, J., & Joseph, S. (1994b). Reliability of the Harter Self-Perception Profile for Children and predictors of global self-worth. *Journal of Genetic Psychology*, 155, 487-492.
- Harter, S. (1979). *Perceived Competence Scale for Children Manual: Form O*. Denver: University of Denver.
- Harter, S. (1982). The Perceived Competence Scale for Children. *Child Development*, 53, 87-97.
- Harter, S. (1983). Developmental perspectives on the self-esteem. In E. H. Hetherington (Ed.), *Handbook of child psychology: Vol. 4. Socialization, personality, and social development* (pp. 275-385). New York: Wiley.
- Harter, S. (1985). *Manual for the Self-Perception Profile for Children*. Denver: University of Denver.
- Harter, S. (1988). *Manual for the Self-Perception Profile for Adolescents*. Denver: University of Denver.
- Harter, S. (1998). The development of self-representations. In W. Damon (Series Ed.) & N. Eisenberg (Volume Ed.), *Handbook of child psychology (5th ed.): Vol 3. Social, emotional and personality development* (pp. 553-617). New York: Wiley.
- Harter, S., & Pike, R. G. (1984). The Pictorial Scale of Perceived Competence and Acceptance for Young Children. *Child Development*, 55, 1969-1983.
- Hoare, P., Elton, R., Greer, A., & Kerley, S. (1993). The modification and standardisation of the Harter Self-Esteem Questionnaire with Scottish school children. *European Child and Adolescent Psychiatry*, 2, 19-33.
- Hughes, H. M. (1984). Measures of self-concept and self-esteem for children aged 3-12 years: A review and recommendations. *Clinical Psychology Review*, 4, 657-692.
- Jöreskog, K., & Sörbom, D. (1993). *LISREL8: Structural equation modeling with the SIMPLIS command language*. Hillsdale, NJ: Erlbaum.

- Marsh, H.W. (1988), *The Self Description Questionnaire (SDQ): A theoretical and empirical basis for the measurement of multiple dimensions of preadolescent self-concept: A test manual and research monograph*. San Antonio, TX: Psychological Corporation.
- Marsh, H. W., Craven, R. G., & Debus, R. (1991). Self concepts of young children 5 to 8 years of age: Measurement and multidimensional structure. *Journal of Educational Psychology*, 83, 377-392.
- Marsh, H. W., & Hocevar, D. (1985). Application of confirmatory factor analysis to the study of self-concept: First and higher order factor models and their invariance across groups. *Psychological Bulletin*, 97, 562-582.
- Marsh, H.W., & Holmes, I.W. (1990), Multidimensional self-concepts: Construct validation of responses by children. *American Educational Research Journal*, 27, 89-117.
- Marsh, H.W., Relich, J.D., & Smith, I.D. (1983), Self-concept: The construct validation of interpretations based upon the SDQ. *Journal of Personality and Social Psychology*, 45, 173-187.
- Marsh, H.W., Smith, I.D., & Barnes, J. (1983). Multitrait-multimethod analyses of the Self-Description Questionnaire: Student-teacher agreement on multi-dimensional ratings of student self-concept. *American Educational Research Journal*, 20, 333-357.
- Meredith, W. H., Abbott, D. A., & Ming, Z. F. (1992). Self-concept and sociometric outcomes: A comparison of only children and sibling children from urban and rural areas in the People's Republic of China. *Journal of Psychology*, 126, 411-419.
- Pedrabissi, L., Santinello, M., & Scarpazza, V. (1988). Contributo all'adattamento italiano del Self-Perception Profile for Children di Susan Harter [Contribution to the Italian adaptation of Susan Harter's Self-Perception Profile for Children]. *Bollettino di Psicologia Applicata*, 185, 19-25.
- Peixoto, F., & Mata, L. (1993). Efeitos da idade, sexo e nível socio-cultural no auto-conceito [Effects of age, sex, and sociocultural level on self-concept]. *Análise Psicológica*, 11, 401-413.
- Piers, E.V. (1984). *Piers-Harris Children's Self-Concept: Revised Manual*. Los Angeles: Counselor Psychological Tests.
- Piers, E., & Harris, D. (1964). Age and other correlates of self-concept in children. *Journal of Educational Psychology*, 55, 91-95.
- Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Validation of construct interpretation. *Review of Educational Research*, 46, 407-441.
- Straathof, M. A., Treffers, Ph. D., Siebelink, B., & Goedhart, A. W. (1991). Eigenwaarde en competentiebeleving: Een onderzoek bij 8-12 jaar oude kinderen op een polikliniek kinderspsychiatrie [Self-esteem and self-perception: A study of 8-12 year old children at a child psychiatric clinic]. *Tijdschrift voor Psychiatrie*, 33, 375-390.
- Swennenhuis, P. B., & Veerman, J. W. (1995). *Nederlandstalige Harterschalen: Een inventarisatie* [Dutch versions of Harter's Scales: An inventory]. Internal report (Episcript 16) of the Paedologisch Instituut Duivendrecht, The Netherlands.
- Tanaka, J.S. (1987). "How big is big enough?": Sample size and goodness of fit in

- structural equation models with latent variables. *Child Development*, 58, 134-146.
- van Dongen-Melman, J. E., Koot, H. M., & Verhulst, F. C. (1993). Cross-cultural validation of Harter's Self-Perception Profile for Children in a Dutch sample. *Educational and Psychological Measurement*, 53, 739-753.
- Van den Bergh, B. (1996). *De Competentiebelevingsschaal voor Kinderen: Gegevens voor Vlaanderen op basis van het CBGS Onderzoek Leefsituatie van Kinderen* [The Self Perception Profile for Children: Data for Flanders from the CBGS study on the living conditions of children]. Internal Report 1996/1 of the Center for Developmental Psychology, Catholic University of Louvain (K.U.Leuven), Belgium.
- Van den Bergh, B. (1997). *Kindertijd. Kinderen en ouders over de leefsituatie van lagere-schoolkinderen in Vlaanderen* [Childhood. Children and parents on the living conditions of school age children in Flanders]. CBGS Document 1997/1. Leuven: Garant.
- Van den Bergh, B., & Van Ranst, N. (1998). Self-concept in children: Equivalence of measurement and structure across gender and grade of Harter's Self-Perception Profile for Children. *Journal of Personality Assessment*, 70, 564-582.
- Veerman, J. W. (1989). *De competentiebelevingsschaal voor kinderen (CBSK)* [Manual for the Dutch version of the SPPC]. Internal Report (Episcript 9) of the Paedologisch Instituut Duivendrecht, The Netherlands.
- Veerman, J. W., Straathof, M.A.E., & Treffers, Ph.D.A. (1994). *Handleiding Competentiebelevingsschaal voor Kinderen CBSK* [Manual for the Dutch version of the SPPC]. Internal Report of the Paedologisch Instituut Duivendrecht, The Netherlands.
- Veerman, J. W., Straathof, M. A. E., ten Brink, L. T., & Treffers, Ph. D. A. (1996). Measuring children's self-concept: Factorial validity and invariance across normal and clinic groups. *Journal of Personality Assessment*, 67, 142-154.
- Veerman, J. W., Straathof, M. A. E., & Treffers, Ph. D. A., Van den Bergh, B., & ten Brink, L. T. (1997). *Handleiding Competentiebelevingsschaal voor Kinderen (CBSK)* [Manual for the Dutch version of the SPPC] Lisse: Swets & Zeitlinger.
- Wylie, R. C. (1961/1974). *The self-concept: Vol. 1. A review of methodological considerations and measuring instruments*. Lincoln: University of Nebraska Press.
- Wylie, R. C. (1979). *The self-concept: Vol. 2. Theory and research on selected topics*. Lincoln: University of Nebraska Press.
- Wylie, R. C. (1989). *Measures of self-concept*. Lincoln: University of Nebraska Press.

Received March, 1998

Accepted January, 1999