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**DEVELOPMENT AND VALIDATION OF THE
MATERIAL VALUES SCALE FOR CHILDREN**

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DEVELOPMENT AND VALIDATION OF THE MATERIAL VALUES SCALE FOR CHILDREN

ABSTRACT

The aim of this study was to develop a scale to measure materialism among children, while leaning on insights from materialism research conducted among adults. We have adapted the well-established Material Values Scale (MVS) of Richins and Dawson (1992) in such fashion that it became appropriate to use among children. We called our new scale the Material Values Scale for children (MVS-c). The MVS-c was administered to 1,001 8- to 11-year-olds. Analyses indicated both the full-length 18-item as well as the shorter 6- and 3-item versions of the MVS-c performed well in terms of test-retest reliability and construct validity.

INTRODUCTION

Today's children are born and raised in a consumer culture. Consequently, commercial pressure seems to be part of modern childhood. It is widely assumed, in both society and academia, that frequent exposure to advertising encourages materialism among children (Kunkel et al., 2004; Schor, 2005; Strasburger, 2001). Remarkably, though, in fact little is known about the general development of children's materialism or its determinants and consequences (Chaplin and John, 2007; John, 1999). In order to investigate these matters thoroughly, having a good measurement instrument for children's materialism is vital. Our aim is to develop such an instrument while leaning on insights from materialism research conducted among adults.

While reviewing materialism studies conducted among adults, Richins and Dawson (1992) found that existing definitions refer to materialism as (i) the degree to which people place possessions and their acquisition at a central place in their life (i.e., material centrality), (ii) the degree to which people believe possessions and their acquisition bring happiness and life satisfaction (i.e., material happiness), and (iii) the degree to which people assess the success of others in terms of possessions (i.e., material success). Based on these theoretical insights, Richins and Dawson developed the Material Values Scale (MVS). With the MVS, materialism is treated as a second-order construct with material centrality, material happiness, and material success as underlying first-order factors.

Existing materialism scales for children seem to lean on only one or two of the three factors of materialism that were distinguished by Richins and Dawson (1992) (e.g., Bottomley et al., 2010; Buijzen and Valkenburg, 2003; Goldberg et al., 2003; Kasser, 2005). For that reason, we decided to develop a new materialism scale for children, one that does include all three factors. Meanwhile, the MVS has been used in over fifty studies and has proven itself in terms of reliability and empirical usefulness (Richins, 2004). Therefore, we decided to use the MVS as an inspiration. We adapted the items of the MVS to render a measurement instrument that is appropriate to use among children. We call our new scale the Material Values Scale for children (MVS-c).

DEVELOPMENT AND VALIDATION OF THE MVS-c

Development of the MVS-c

Like the original MVS, the full-length MVS-c contains eighteen items. Material centrality, material happiness, and material success are measured with six items each. The items for material centrality measure the importance of (expensive) possessions to children, the items for material happiness the satisfaction they get out of having certain (expensive) possessions,

and for material success the degree to which they think that children with more (expensive) possessions are more fun. It was necessary to adapt the items of the MVS before it can be administered to children, because scales for adults usually have low content validity for children, are too difficult to understand for children due to their language use, and have too many response options (Bottomley et al., 2010; Borgers, 2003; de Leeuw, 2003). Therefore, all MVS-c items refer to types of possessions that interest children (e.g., money, clothes, and birthday presents; see Buijzen and Valkenburg 2000), are formulated in clear language, and have four response categories instead of five. All items were pretested among a small group of children. The items, as well as the response options, are listed in the appendix.

Validation of the MVS-c

Research with the MVS has shown that shorter 6- and 3-item versions are just as useful as the 18-item version (Richins, 2004). For that reason, we also developed 6- and 3-item versions of the MVS-c. First, we administered the full-length MVS-c to two groups of children. Then, we determined for both samples whether children's materialism was indeed a second-order construct with material centrality, material happiness, and material success as first-order factors (*population cross-validity*; see Raju et al., 1997). Making use of the scale's structure, we created the 6- and 3-item versions by selecting those items which were shown to load highest on their designated first-order factor in a confirmatory factor analysis (see appendix). Last, we determined whether children's scores on the MVS-c were consistent over time (*test-retest reliability*) and whether children's scores on the MVS-c were significantly correlated to other measures which are known to be related to materialism so as to determine whether the MVS-c indeed measures materialism (*construct validity*) (see Carmines and Zeller, 1979; DeVellis, 2003). Test-retest reliability and construct validity were examined for the 18-, 6-, and 3-item versions of the MVS-c in order to compare their usability.

METHOD

In October 2006 survey data were collected among 1,001 Dutch children aged eight to eleven. Of these children, 603 participated in our follow-up study in October 2007. Due to incomplete demographic information, six children were removed from the data set. We randomly split our sample in half to create two independent samples (Raju et al., 1997). Population cross-validity of the 18-item MVS-c was determined by fitting the model from Figure 1 in AMOS 17.0 ($N_{sample1} = 482$, $N_{sample2} = 513$). The model depicted in Figure 1 predicts that (1) children's responses to the 18-item MVS-c can be explained by three first-order factors (i.e. material centrality, material happiness, material success); (2) each item has a non-zero loading on the first-order factor it was designed to measure, and zero loadings on the two other first-order factors; (3) error terms associated with the observed items are uncorrelated, although we do allow error terms associated with items with corresponding subjects to be correlated (for instance item 1, 7, and 13, which all refer to 'expensive things'); and (4) correlations among the three-first order factors can be explained fully by their loadings on the second-order factor (for a more detailed discussion, see Byrne, 2001). The fit of the model is evaluated using the Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). Model fit is acceptable when CFI is .90 or higher and when RMSEA is .08 or lower (Byrne, 2001).

Test-retest reliability was determined by correlating children's 2006 and 2007 materialism scores ($N_{sample1} = 287$, $N_{sample2} = 311$). Construct validity was determined by correlating the 2006 materialism scores with the following criterion variables: the materialism scale of Buijzen and Valkenburg (2003), the child's sex, life satisfaction, and peer group influence ($N_{sample1} = 482$, $N_{sample2} = 513$). The materialism scale for children constructed by Buijzen and

Valkenburg (2003) is an adaptation of a scale that was used to measure materialism among adolescents (Moschis and Moore, 1982). To determine children's life satisfaction, we used an adjusted version of the Student Life Satisfaction Scale developed by Huebner (1994) (Buijzen and Valkenburg 2003). Peer group influence was measured using an adapted version of Mangleburg and Bristol's (1998) scale on susceptibility to peer influence. This scale consists of two components: normative peer group influence and informative peer group influence.

RESULTS

Population Cross-Validity

The 18-item second-order factor model resulted in an acceptable fit in the first sample, $\chi^2(DF = 114, N = 482) = 833.56, p < .001, CFI = .92, RMSEA = .08$. Figure 1 shows the measurement loadings of the observed items on the three first-order factors, and the structural loadings of the three first order factors on the one second-order factor material values. All loadings were significant at $p < .001$. To investigate whether our model also held for the second sample, we performed a multi-sample analysis. The unconstrained model for both samples yielded an acceptable model fit, $\chi^2(DF = 228, N = 995) = 1013.75, p < .001, CFI = .91, RMSEA = .06$. Overall, the structure of second-order factor model showed an adequate fit and was very similar in both samples. The 18-item MVS-c had a Cronbach's alpha of .92 in the first sample ($M = 2.16, SD = .48$) and .93 in the second sample ($M = 2.16, SD = .50$).

Test-Retest Reliability

Test-retest reliability is usually strong for scales that measure constructs that change little over time. However, for scales that measure constructs that *do* change over time, such as materialism, test-retest reliability may be only moderate. This is exactly what we found. For both samples, the test-retest correlations of the 18-, 6-, and 3-item versions of the MVS-c are displayed in table 1. All correlations were moderate in size, though still significant at $p < .001$. Within the first sample, test-retest reliability was not significantly different between the different versions of the MVS-c. For the second sample, test-retest reliability did not significantly differ between the 18- and 6-item versions. However, test-retest reliability was significantly smaller for the 3-item scale.

Construct Validity

To examine construct validity, we correlated respondents' mean scores on all three versions of the MVS-c with the scores on the materialism scale of Buijzen and Valkenburg (2003), the child's sex, life satisfaction, normative peer group influence, and informative peer group influence. In table 2 the results for sample 1 and sample 2 are presented separately. As the table shows, the 18-item scale was significantly correlated to the child's sex for both samples. Furthermore, the 6- and 3-item scales were significantly correlated to the child's sex in the first sample. In line with expectations, boys were found to be more materialistic than girls. Furthermore, the 18-, 6-, and 3-item scales were significantly correlated to the materialism scale of Buijzen and Valkenburg (2003), life satisfaction, normative peer group influence, and informative peer group influence. Higher scores on the MVS-c were associated with higher scores on the other materialism scale, lower life satisfaction, and higher normative and informative peer group influence.

DISCUSSION

Both the 18-, 6- and 3-item versions of the MVS-c provide a reliable and valid instrument to empirically measure materialism among children. All three versions MVS-c can be used in

paper and pencil and computer-assisted questionnaires for children above the age of seven. In addition, the shorter versions can also be used in oral interviews, which is a more suitable method when working with children below the age of seven (De Leeuw, 2003). However, developmental differences in communications and reading skills may cause younger children to have difficulty to understand and choose between the verbal response categories of the MVS-c (de Leeuw, 2003). Therefore, we advise to substitute the verbal response categories of the items with visual response options such as the Attitude Pollimeter when conducting research with children younger than seven (Lampert, 1979).

We found that children's materialism is a second-order construct with material centrality, material happiness, and material success as first-order factors. These findings may be utilized in future research. It would be interesting to examine how values regarding material centrality, material happiness, and material success are formed during childhood. Previous work suggested that young children mainly want possessions for the sake of having them, whereas children older than eight – who are able to recognize product symbolism – might also desire possessions for their psychological benefits (Chaplin and John, 2007; John, 1999). This would imply values concerning material happiness and material success may not emerge until a certain age.

The distinction between the different first-order factors might also be of importance while studying the causes and consequences of materialism among children. Some causes of materialism might have a stronger impact on one factor than on the others. Reversely, certain consequences of materialism might be associated more strongly with one factor than with the others. Materialism, for example, is believed to negatively affect life satisfaction because possessions may not bring the benefits materialists anticipated (Kasser, 2005; Kasser et al., 2004). Assuming this to be true, this means that material happiness – the degree to which children anticipate benefits from owning certain possessions – might be a stronger predictor for life satisfaction than material centrality or success.

Last, but not least, we do want to emphasize that this study was conducted among eight to eleven year olds. The usability of the 18-, 6-, and 3-item versions of the MVS-c needs to be determined for other age groups as well, for instance for children in early childhood and adolescence. Even so, we do encourage other scholars to use our scale. Administering the MVC-c to different age groups will allow us to gain more insight into the general development of children's materialism and its associated causes and consequences at different ages.

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Table 1
Establishing Test-Retest Reliability: Correlations for the Different Versions of the Material Values Scale for Children

MVS-c	Sample 1	Sample 2
18 items	.50 ^a	.62 ^a
6 items	.46 ^a	.52 ^a
3 items	.40 ^a	.45 ^b

Note. All correlation coefficients are significant at $p < .001$. $N_{sample_1} = 287$, $N_{sample_2} = 311$.

^{a, b} Within column differences with different superscripts are significant at least at $p < .05$

Table 2
Establishing Construct Validity: Correlations between the Different Versions of the Material Values Scale for Children and Related Constructs

	MVS-c		
	18 items	6 items	3 items
<i>Sample 1</i>			
Materialism scale			
Buijzen and Valkenburg (2003)	.75***	.60***	.60***
Sex (0 = girls; 1 = boys)	.18***	.16***	.17***
Life satisfaction	-.19***	-.16***	-.16***
Normative peer group influence	.48***	.42***	.38***
Informational peer group influence	.27***	.29***	.24***
<i>Sample 2</i>			
Materialism scale			
Buijzen and Valkenburg (2003)	.76***	.63***	.63***
Sex (0 = girls; 1 = boys)	.09*	.06	.08
Life satisfaction	-.35***	-.30***	-.28***
Normative peer group influence	.53***	.48***	.46***
Informational peer group influence	.32***	.31***	.25***

Note. All variables are wave 1 variables. $N_{sample_1} = 482$; $N_{sample_2} = 513$.

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

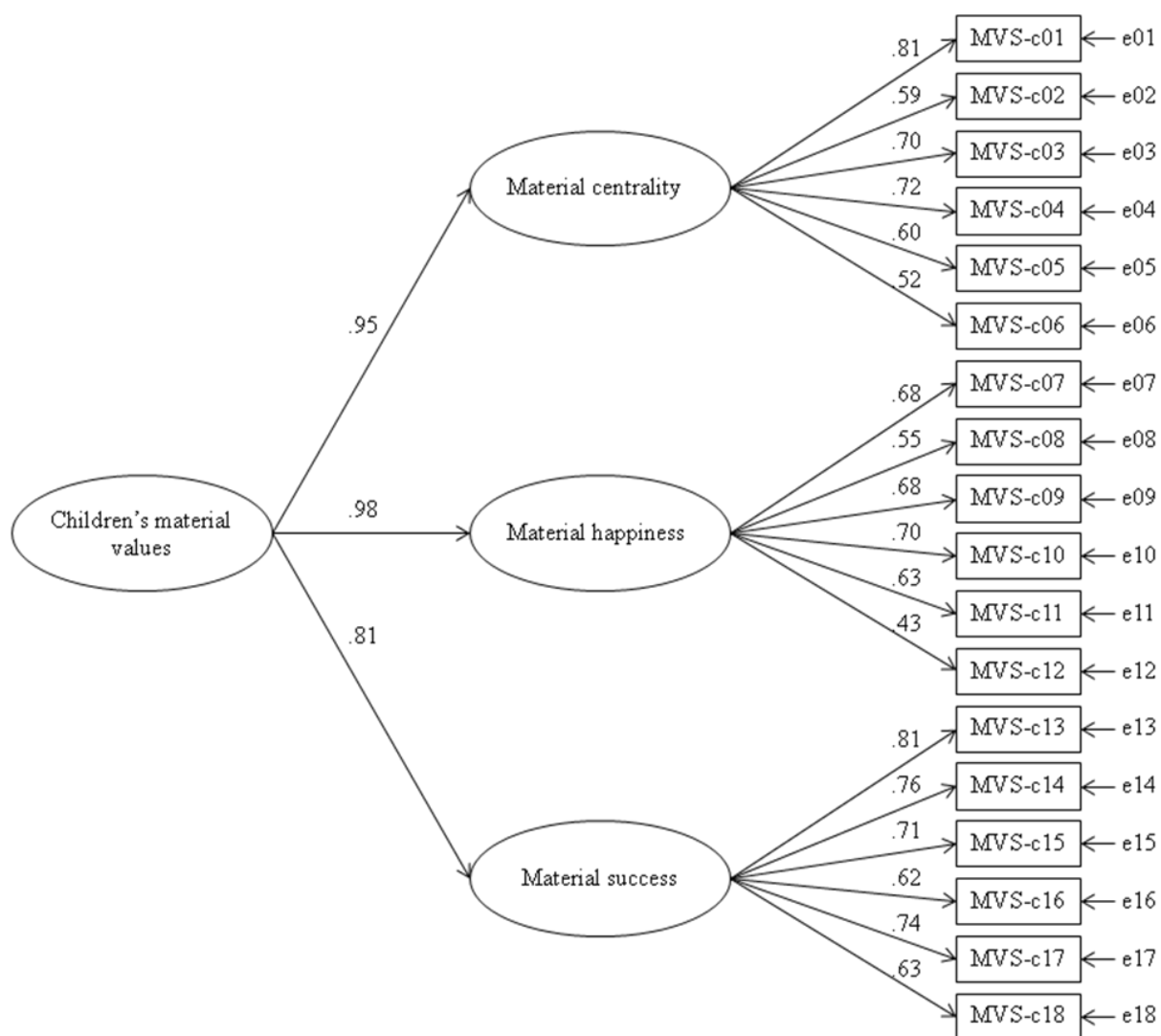


Figure 1. Second-order factor structure of the 18-item Material Values Scale for children ($N = 482$). Factor loadings are standardized scores. Ovals represent latent variables, and rectangles represent manifest variables.

Appendix

Confirmatory Factor Loadings of the 18-item Material Values Scale for children (N = 995)

		<i>Loading^a</i>	<i>Mean</i>	<i>SD</i>
	<i>Material Centrality</i>			
MVS-c01 ^{b, c}	Do you think it's important to own expensive things?	.77	2.01	.73
MVS-c02	Do you think it's important to own a lot of money?	.61	2.70	.82
MVS-c03	Do you think it's important to own expensive clothes?	.71	1.84	.69
MVS-c04 ^b	Do you think it's important to own expensive brands?	.74	1.85	.74
MVS-c05	Do you think it's important to be able to buy a lot of things?	.61	2.53	.78
MVS-c06	Do you think it's important to get a lot of presents for your birthday?	.53	2.93	.84
	<i>Material Happiness</i>			
MVS-c07 ^{b, c}	Does buying expensive things make you happy?	.70	2.14	.77
MVS-c08	Does having a lot of money make you happy?	.59	2.65	.83
MVS-c09 ^b	Would you be happier if you owned more clothes that are expensive?	.69	1.91	.72
MVS-c10	Would you be happier if you could buy more brands that are expensive?	.69	2.03	.76
MVS-c11	Would you be happier if you owned more things?	.64	2.30	.76
MVS-c12	Do you feel unhappy if you don't get the things you really want to have?	.48	2.75	.73
	<i>Material Success</i>			
MVS-c13 ^{b, c}	Do you think children who have expensive things are more fun than other children?	.81	1.73	.67
MVS-c14	Do you think children who have a lot of money are more fun than other children?	.74	1.69	.65
MVS-c15	Do you think children who have expensive clothes are more fun than other children?	.73	1.61	.62
MVS-c16	Do you think other children like you more if you have expensive brands?	.61	2.11	.77
MVS-c17 ^b	Do you think children who have a lot of things are more fun than other children?	.76	1.86	.73
MVS-c18	Do you think other children like you more if you have many expensive things?	.65	2.23	.79

Note. Response options: (1) *no, not at all*, (2) *no, not really*, (3) *yes, a little*, (4) *yes, very much*.

^a Factor loading on the designated dimension

^b Included in the 6-item MVS-c

^c Included in the 3-item MVS-c