Development and validation of the Material Values Scale for children (MVS-c)

Suzanna J. Opree*, Moniek Buijzen, Eva A. van Reijmersdal, Patti M. Valkenburg

1. Introduction

Today’s Western children are born and raised in a consumer culture. Consequently, commercial pressure has become part of modern childhood. It is widely assumed in both society and academia that frequent exposure to advertising encourages materialism among children (Mayo & Nairn, 2009; Schor, 2005; Strasburger, 2001). Although materialism may have positive impacts on individuals and economies, it is often criticized for leading to negative outcomes such as dissatisfaction and resentment, and compulsive buying and debt (Otero-López, Pol, Bolaño, & Mariño, 2010; Roberts & Clement, 2007). Remarkably, though, little is known about the general development of children’s materialism, or about its causes and consequences (Chaplin & John, 2007; John, 1999). In order to investigate these matters accurately, 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 the materialism studies conducted among adults, Richins and Dawson (1992) found that existing definitions of materialism entailed at least one of the following ideas, namely that materialism is reflected by (i) the degree to which possessions and the acquisition of possessions are central to a person’s 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). Richins and Dawson were the first to take all three of these ideas into account simultaneously; they considered materialism to be a second-order construct with material centrality, material happiness, and material success as first-order factors. On the basis of their theoretical insights, Richins and Dawson developed the Material Values Scale (MVS). Having been used in over fifty studies among adults thus far, the MVS has proven itself to perform well in terms of reliability and empirical usefulness (Richins, 2004).

Similar to the early materialism scales for adults, materialism scales for children seem to rely on only one or two of the three factors of materialism that were distinguished by Richins and Dawson (1992) (e.g., Bottomley, Nairn, Kasser, Ferguson, & Ormrod, 2010; Buijzen & Valkenburg, 2003; Goldberg, Gorn, Parachos, & Bamossy, 2003; Kasser, 2005). The aim of this study is to develop and validate a new, more complete measurement instrument for children’s materialism that includes all three factors. The name of this new scale is the Material Values Scale for children (MVS-c). It relies heavily on the MVS, but the items have been adapted for use among children.

1.1. Development of the MVS-c

We adapted the items of the MVS to develop a measurement instrument that is appropriate for use among children. Adapting the items was necessary because scales designed for adults (i) have low content validity for children – items may refer to a type of situation that children are not yet familiar with or that is irrelevant to...
them (Bottomley et al., 2010); (ii) are too difficult for children to understand because of the language use – children face difficulties with negations, ambiguity, and vagueness (de Leeuw, 2003; De Leeuw, Borgers, & Smits, 2004) as well as items phrased as statements (Buijzen & Valkenburg, 2003); and (iii) usually have five or more response options, whereas four has been shown to be the optimal number for children (Borgers, 2003). These problems were considered when creating the items for the MVS-c. All items refer to types of possessions that interest children (e.g., money, clothes, and birthday presents; see Buijzen & Valkenburg, 2000).

Furthermore, all items and response categories are formulated in clear, concrete language.

Following the structure of the original MVS, materialism may be regarded as a second-order construct with material centrality, material happiness, and material success as first-order factors. If such a second-order construct is a valid description of the data, then the number of items per first-order factor can be reduced (Noar, 2003). Using fewer items reduces the response burden on respondents, which is preferable especially when working with children because of their limited attention span. Research with the MVS has indicated that 6- and 3-item versions are “nearly as useful” as the full-length 18-item version (Richins 2004, 216). These findings inspired us to develop not only an 18-item version of the MVS-c but also 6- and 3-item versions.

1.2. Validation of the MVS-c

To validate the 18-item MVS-c, we first tested its presumed second-order structure (i.e., the second-order construct materialism being accounted for by the first-order factors of material centrality, material happiness, and material success) using structural equation modeling. To determine whether the shorter versions of the MVS-c perform just as well in terms of reliability and validity as the long version, we compared their test–retest reliability and construct validity. With test–retest reliability the same survey is administered to the same sample on repeated occasions in order to determine whether respondents’ scores are consistent over time. For scales that measure constructs that change little over time, correlations between scores at different points in time should be high. However, for scales that measure constructs that do change over time, like materialism (see Chaplin & John, 2007), test–retest correlations may be only small or moderate in size (DeVellis, 2003; Noar, 2003).

The construct validity of a scale refers to the degree to which the scale actually measures the construct that it is intended to measure (DeVellis, 2003; Noar, 2003). First, the scale scores should have a strong correlation to that of other, similar scales. Second, scale scores should significantly correlate with other measures known to be related to the construct that is being measured. To assess construct validity, we estimated the correlation between the three different versions of the MVS-c and Buijzen and Valkenburg’s (2003) children’s materialism scale, gender, life satisfaction and peer group influence. Gender and materialism have been found to be related as previous studies indicate that boys are slightly more materialistic than girls (Bottomley et al., 2010; John, 1999; Kasser, 2005). Life satisfaction is assumed to be negatively related to materialism. Children who believe that possessions bring fulfillment, happiness, and success are more likely to be unhappy because their expectations might not always be fulfilled (Bottomley et al., 2010; Goldberg et al., 2003; Kasser, 2005). Finally, peer group influence susceptibility is also negatively related to materialism. Because they continually compare themselves to other people, more materialistic children are found to have lower self-esteem and are believed to be more vulnerable to the influence of peers (Achenreiner, 1997; Bottomley et al., 2010; John, 1999).

2. Method

2.1. Sample

For this study, we collected longitudinal survey data among Dutch children aged 8 to 11. A research company that specializes in research among children was responsible for the data collection. The respondents were recruited through an existing online youth panel that is representative of the Netherlands in terms of age, gender, and geographical and socio-economic distribution. Children were informed that the survey was about advertising and belongings and that they could stop participation at any time they wished. Completing the questionnaire took 15 to 20 min. Children received a small incentive for their participation. Prior to the implementation of the survey, informed consent from both parents and children was obtained. The data collection was granted IRB approval.

During the first wave of the survey in October 2006 1001 children were surveyed (50% girls). Of these children, 603 children also participated in the second wave which took place in October 2007 (50% girls). Because of incomplete demographic information, six children had to be removed from the data set. We checked whether the children from the original sample who failed to complete both questionnaires differed systematically from the children who did complete both questionnaires. There was no association between drop-out and gender ($\chi^2(1, n = 995) = .42, p = .52$), age ($F(1,993) = 1.35, p = .25$), and the time it took children to complete the first survey ($F(1,993) = 2.40, p = .12$).

2.2. Measures

2.2.1. MVS-c

Our Material Values Scale for children consisted of 18 items, which are listed in the Appendix A. Similar to the original MVS, the items for material centrality measure the importance of (expensive) possessions to children, the items for material happiness measure the satisfaction they get out of having certain (expensive) possessions, and the items for material success measure the degree to which they like children with more (expensive) possessions more than other children. Response categories on all MVS-c items were (1) no, not at all, (2) no, not really, (3) yes, a little, (4) yes, very much. Item scores were averaged to create scale scores. For the shorter versions of the MVS-c, we selected the items with the highest factor loadings per dimension. For the 6-item scale we selected two items per dimension, and for the 3-item scale we selected one item per dimension (see Appendix A). The descriptive statistics of all three versions of the MVS-c are displayed in Part A of Table 1.

2.2.2. Buijzen and Valkenburg’s materialism scale (2003)

The materialism scale for children developed by Buijzen and Valkenburg (2003) is an adaptation of a scale that was used to measure materialism among adolescents (Churchill & Moschis, 1979; Moschis & Churchill, 1978; Moschis & Moore, 1982). The scale consisted of five items: (i) Do you think it is important to have a lot of money, (ii) do you think it is important to own a lot of things, (iii) would you like to be able to buy things that cost a lot of money, (iv) would you like to earn a lot of money when you grow up, and (v) would you like to have more money to buy things for yourself? The response options for the items were (1) no, not at all, (2) no, not so much, (3) yes, a little bit, (4) yes, very much. Item scores were averaged to create scale scores ($x = .83, M = 2.84, SD = 0.57$ for wave 1; $x = .82, M = 2.81, SD = 0.54$ for wave 2).
2.2.3. Gender

Gender was included in the analyses as a dummy variable with 0 representing girls and 1 representing boys. Our sample for wave 1 included 995 children, of which 50.3% were girls. Our longitudinal sample included 598 children, of which 56.0% were girls.

2.2.4. Life satisfaction

To determine children’s life satisfaction, we used an adjusted version of the Student Life Satisfaction Scale developed by Huebner (1994) (Buijzen & Valkenburg, 2003). Children were asked the following questions: How happy are you with (i) your life, (ii) your home, (iii) your parents, (iv) your friends, (v) your school, and (vii) yourself, as well as (viii) How happy are you? Response categories were (1) not happy, (2) not so happy, (3) a little happy, and (4) very happy. Item scores were averaged to create scale scores ($\alpha$ = .79, $M$ = 3.29, $SD$ = 0.43 for wave 1; $\alpha$ = .82, $M$ = 3.26, $SD$ = 0.44 for wave 2).

2.2.5. Peer group influence

Peer group influence was measured using an adapted version of Mangleburg and Bristol’s (1998) scale on susceptibility to peer group influence. This scale consists of two components: normative peer group influence (i.e., the willingness to conform to the expectations of others regarding purchase decisions) and informative peer group influence (i.e., the tendency to learn about products and brands by seeking information from others) (Bearden, Netemeyer, & Teel, 1989). Normative peer group influence and informative peer group influence were measured with five items each. Items for normative peer group influence were: Do you think it is important that your friends like... (i) your school supplies, (ii) your clothes, (iii) the music you listen to, (iv) your shoes, and (v) your room at home? Response categories were (1) really not important, (2) not important, (3) important, and (4) very important. Item scores were averaged to create scale scores ($\alpha$ = .88, $M$ = 2.45, $SD$ = 0.69 for wave 1; $\alpha$ = .89, $M$ = 2.50, $SD$ = 0.69 for wave 2). Items for informative peer group influence were: How often do you ask your friends to help you... (i) choose new school supplies, (ii) choose new clothes, (iii) make a wish list, and (iv) choose new shoes, as well as (v) How often do you talk to your friends about brands? The response categories with the items were (1) almost never, (2) sometimes, (3) regularly, and (4) often. Item scores were averaged to create scale scores ($\alpha$ = .76, $M$ = 1.22, $SD$ = 0.35 for wave 1; $\alpha$ = .83, $M$ = 1.27, $SD$ = 0.42 for wave 2).

3. Results

3.1. Multi-factor modeling

We used structural equation modeling (maximum likelihood procedure in AMOS 19.0) to test the assumption that materialism is a second-order construct with material centrality, material happiness, and material success as first-order factors. We tested these assumptions using the higher-order factor model in Fig. 1. However, in order to decide whether the first-order factors were well-defined, we first tested an oblique factor model and a nested factors model (cf., Gignac, 2007). In each of the models, error terms of items with corresponding subjects (for instance item 1, 7, and 13, which all refer to ‘expensive things’) were allowed to correlate. Thus, we controlled for the possibility that children who value, for instance, clothes would not only score higher on the centrality item regarding clothes, but also on the happiness and success items about clothes. We evaluated the fit of the models using the Root Mean Square Error of Approximation (RMSEA) and the Comparative Fit Index (CFI). CFI values between .90 and .95 and/or RMSEA values between .05 and .08 indicate acceptable model fit, and CFI values larger than .95 and/or RMSEA values smaller than .05 indicate good model fit (Kline, 2005).

The oblique factor model resulted in an acceptable fit, $\chi^2/DF = 114, N = 995) = 833.56, p < .001, CFI = .92, RMSEA = .08$. In order to evaluate a first-order factor to be well-defined, factor loadings should be significant and in similar direction (Gignac, 2007). As required, all items were found to have positive and statistically significant loadings on their designated factor ($p < .001$). Furthermore, all first-order factors were strongly correlated with each other ($r \geq .79; p < .001$). These findings suggest that all items share one common factor. In order to test this assumption, we added material values as a first-order factor to the model. This nested factors model also showed acceptable model fit, $\chi^2/DF = 96, N = 995) = 381.33, p < .001, CFI = .97, RMSEA = .06$. Again, all items were found to have unidirectional loadings on their designated factor. Additionally, all items had positive and significant factor loadings on the general material values factor ($p < .01$). Including
this factor in the model led to a significant increase in model fit, $\chi^2_{null}(DF = 18, N = 995) = 452.23$, $p < .001$.

To test the second-order factorial structure of materialism, we tested the higher-order factor model depicted in Fig. 1. Because the oblique factor model and the higher-order factor model are equivalent, they result in identical model fit and identical factor loadings for the first-order factors (Gignac, 2007). With the higher-order factor model, though, it is possible to determine the factor loadings of the first-order factors on the second-order factor. We found that material centrality, material happiness, and material success are each important components of materialism. Each of these first-order factors had a strong and positive effect on the second-order factor materialism ($p < .01$).

3.2. Test–retest reliability

The test–retest correlations of the 18-, 6-, and 3-item versions of the MVS-c are displayed in Part B of Table 1. All correlations were moderate in size and significant at $p < .001$. In addition the Pearson's correlation coefficients, we also computed Gower similarity coefficients, using the Gower v1.0 program (http://www.pbarrett.net/Gower/Gower.html). Gower (1971) coefficients indicate the percentage of similarity between pairs of observations, relative to the range of their maximum possible absolute discrepancy. Comparing children's wave 1 and 2 MVS-c scores, there was 88 percent similarity for the 18-item scale, 86 percent similarity for the 6-item scale, and 85 percent similarity for the 3-items scale. All in all, test–retest reliability for the MVS-c was high.

3.3. Construct validity

To examine construct validity, we correlated respondents' wave 1 scores on all three versions of the MVS-c with scores on Buijzen and Valkenburg's (2003) materialism scale, gender, life satisfaction, normative peer group influence, and informative peer group influence (see Part C of Table 1). In line with expectations, higher scores on the MVS-c were associated with higher scores on Buijzen and Valkenburg's (2003) materialism scale, boys were found to be more materialistic than girls, and higher scores on the MVS-c were associated with lower life satisfaction, and higher normative and informative peer group influence.

4. Discussion and conclusion

The aim of this study was to develop and validate a new measurement instrument for children's materialism. Such a measurement instrument is needed to investigate the general development of materialism in children and to study the causes and consequences of materialism in children. In both society and academia it is widely believed that materialism in children leads to negative outcomes such as dissatisfaction and resentment as well as compulsive buying and debt (Otero-López, Pol, Bolaño, & Mariño, 2010; Roberts & Clement, 2007). However, these assumptions are yet to be tested. In order to create the Material Values Scale for children we adapted the items from the original MVS. Then, in order to test its reliability and validity, we administered the MVS-c to 1001 8- to 11-year olds. Structural equation modeling indicated that children's materialism is a second-order construct with material centrality, material happiness, and material success.
as first-order factors. Shorter versions of the MVS-c (i.e., with 6-, and 3-items respectively) appear just as useful as the full-length 18-item version. After comparing the test–retest reliability and construct validity of these three versions, we can safely conclude that they are all suitable measures for children’s materialism.

4.1. Uses of the Material Values Scale for children

The 18-, 6- and 3-item versions of the MVS-c are all reliable and valid instruments to measure materialism in all research methodologies using children’s self-reports, including surveys, experiments and interviews. Paper and pencil as well as computer-assisted questionnaires are appropriate to use for children above the age of seven. Yet, the shorter versions can also be used in oral interviews, which are more suitable when working with children below the age of seven (De Leeuw, 2003). Our study shows that by asking children just three questions (i.e., “Do you think it’s important to own expensive things?”, “Does buying expensive things make you happy?”, and “Do you like children who have expensive things more than you like other children?”), a reliable and valid measure of their materialism can be obtained. However, developmental differences in communication and reading skills may cause younger children to have difficulty in understanding and choosing between the verbal response categories of the MVS-c (De Leeuw, 2003). Therefore, we recommend substituting 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; Lampert, 1981).

4.2. Suggestions for future research

The first main finding of this study is that childhood materialism is a second-order construct with three underlying factors. Researchers can use the full set of MVS-c items in order to study materialism as a general concept, or use a particular set of items to study material centrality, material happiness, or material success. On the one hand, it would be interesting to examine how values related to 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 & John, 2007; John, 1999). This would imply that values concerning material happiness and material success may not emerge until a certain age. On the other hand, the distinction between the different subscales 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 and, conversely, certain consequences of materialism might be associated more strongly with one factor than with the others.

The second main finding of this study is that the 6- and 3-item versions of the MVS-c perform just as well as the 18-item version in terms of reliability and empirical usefulness for 8- to 11-year-olds. In future research, the population cross-validity, test–retest reliability, and construct validity of the 18-, 6- and 3-item MVS-c may be determined for other age groups as well. Here the focus can be on both younger children (i.e., children in early childhood) and older children (i.e., adolescents). 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. In addition, by using the MVS for adults and the MVS-c for youth, materialism can be studied across the life span.

Appendix A

List of items in the Material Values Scale for children.

<table>
<thead>
<tr>
<th>Material centrality</th>
<th>MVS-c01&lt;sup&gt;a,b&lt;/sup&gt;</th>
<th>Do you think it’s important to own expensive things?</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVS-c02</td>
<td>Do you think it’s important to own a lot of money?</td>
<td></td>
</tr>
<tr>
<td>MVS-c03</td>
<td>Do you think it’s important to own expensive clothes?</td>
<td></td>
</tr>
<tr>
<td>MVS-c04&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Do you think it’s important to own expensive brands?</td>
<td></td>
</tr>
<tr>
<td>MVS-c05</td>
<td>Do you think it’s important to be able to buy a lot of things?</td>
<td></td>
</tr>
<tr>
<td>MVS-c06</td>
<td>Do you think it’s important to get a lot of presents for your birthday?</td>
<td></td>
</tr>
</tbody>
</table>

Material happiness

<table>
<thead>
<tr>
<th>Material happiness</th>
<th>MVS-c07&lt;sup&gt;a,b&lt;/sup&gt;</th>
<th>Does buying expensive things make you happy?</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVS-c08</td>
<td>Does having a lot of money make you happy?</td>
<td></td>
</tr>
<tr>
<td>MVS-c09&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Would you be happier if you owned more clothes that are expensive?</td>
<td></td>
</tr>
<tr>
<td>MVS-c10</td>
<td>Would you be happier if you could buy more brands that are expensive?</td>
<td></td>
</tr>
<tr>
<td>MVS-c11</td>
<td>Would you be happier if you owned more things?</td>
<td></td>
</tr>
<tr>
<td>MVS-c12</td>
<td>Do you feel unhappy if you don’t get the things you really want to have?</td>
<td></td>
</tr>
</tbody>
</table>

Material success

<table>
<thead>
<tr>
<th>Material success</th>
<th>MVS-c13&lt;sup&gt;a,b&lt;/sup&gt;</th>
<th>Do you like children who have expensive things more than you like other children?</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVS-c14</td>
<td>Do you like children who have a lot of money more than you like other children?</td>
<td></td>
</tr>
<tr>
<td>MVS-c15</td>
<td>Do you like children who have expensive clothes more than you like other children?</td>
<td></td>
</tr>
<tr>
<td>MVS-c16</td>
<td>Do you think other children like you more if you have expensive brands?</td>
<td></td>
</tr>
<tr>
<td>MVS-c17&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Do you like children who have a lot of things more than you like other children?</td>
<td></td>
</tr>
<tr>
<td>MVS-c18</td>
<td>Do you think other children like you more if you have many expensive things?</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Included in the 6-item MVS-c.
<sup>b</sup> Included in the 3-item MVS-c.

References


