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USING THE PORTRAIT VALUES QUESTIONNAIRE TO ASSESS CHILDREN'S PERCEPTIONS OF PARENTAL SOCIALIZATION VALUES

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The Portrait Values Questionnaire (PVQ; Schwartz et al., 2001), originally developed to assess one's own personal values according to Schwartz's (1992) theory of human values, has also been used in research to measure children's perceptions of their parents' socialization values, namely the values children perceive their parents want them to endorse (e.g., Barni, 2009; Knafo & Schwartz, 2003). The factor structure of this revised version of the scale, which we called Portrait Socialization Values Questionnaire-Children's Perceptions (PSVQ-CP), was analyzed in an Italian sample of 789 adolescents (54.5% female; age: M = 15.30, SD = 1.26), who were asked to fill in the PSVQ-CP referring to their mothers' and fathers' socialization values. Results showed that the PSVQ-CP factor structure was similar, but not completely identical, to the original PVQ factor structure, and it was partially invariant across adolescent and parent gender. Implications for assessment of socialization values and future research are discussed.

Key words: Portrait Values Questionnaire (PVQ); Portrait Socialization Values Questionnaire-Children's Perceptions (PSVQ-CP); Factor structure; Invariance.

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Schwartz's theory of human values (1992) has provoked widespread interest in different fields of psychology, such as cross-cultural, social, and developmental psychology. Schwartz (2007) defined values as "trans-situational goals that vary in importance and serve as guiding principles in the life of a person or a group" (p. 712), and theorized the existence of 10 motivationally distinct value types, that are: universalism, benevolence, conformity, tradition, security, power, achievement, hedonism, stimulation, and selfdirection. These 10 value types are arranged in a circular structure based on the fact that actions in pursuit of any value have consequences that conflict with some values but are congruent with others. Values characterized by similar motivational goals appear next to each other in the circle, while those whose motivational goals are different are in opposite positions.

The opposition between competing values can also be summarized by viewing them as being organized along two bipolar dimensions. The first dimension contrasts openness to change values (hedonism, stimulation, and self-direction), characterized by emphasis on change and independence, and conservation values (tradition, conformity, and security), where the emphasis is instead on self-restraint, preserving traditional practices, and safeguarding stability. The second dimension contrasts self-enhancement values (power and achievement), where people prioritize their personal interests even at the expense of others, and



self-transcendence values (benevolence and universalism), where people transcend their selfish concerns in order to promote the welfare and interest of others.

VALUES IN THE INTERGENERATIONAL TRANSMISSION PROCESS: FROM PERSONAL VALUES TO SOCIALIZATION VALUES

Children are introduced to values through interactions with adults who are significant to their lives and who may reinforce different types of values (Kremer-Sadlik & Kim, 2007). The family is considered the primary place where socialization (i.e., the process through which the new generation negotiates norms, values, and rules with the previous generation) takes place (Durkheim, 1922; Grusec & Davidov, 2007).

Value transmission between parents and children is considered the hallmark of a successful socialization (Barni, 2009). However, intergenerational transmission cannot be reduced to a mere reproduction of values from one generation to the next one. Early socialization models viewed intergenerational transmission as a top-down phenomenon, where parents simply transfer their own values to their children (Barni, Rosnati, & Ranieri, 2013). These models, among which the so-called fax model (Strauss, 1992), assumed that parents want to transmit a copy of their own personal values to their children and conceptualized children as "blank slates," that is, they are considered as passively accepting their parents' values (De Mol, Lemmens, Verhofstadt, & Kuczynski, 2013).

However, several authors have criticized this perspective, whose risk is clearly to reduce transmission to a copying process where the younger generation plays a passive role. More recent socialization models have therefore conceptualized intergenerational transmission of values as being an interactive and bidirectional process (e.g., Grusec & Davidov, 2010; Kuczynski & Navara, 2006), where both parents and children play an active role. In this perspective, transmission process is expected to produce — as a possible result — not only parent-child similarity, but also intergenerational differences.

On the one hand, parents may in fact differentiate what is good for themselves (i.e., personal values) and what is good for their children (i.e., socialization values) (Barni et al., 2013; Knafo & Schwartz, 2003; Tam, Lee, Kim, Li, & Chao, 2012). This could for example happen where parents recognize that their children are growing up in a social context which differs from the one in which they themselves were reared (Alwin, 1988). In their recent study involving a large sample of Italian families with one adolescent child, Barni, Ranieri, Donato, Tagliabue, and Scabini (2017) showed the great importance of parents' personal values in determining parents' socialization values, but also highlighted the role played by family value climate in influencing the values parents desire to transmit to their children. Parents' socialization values also depend on parental motivations for transmitting values to children (Barni, Donato, Rosnati, & Danioni, 2017) and on what parents perceive to be normatively important in the wider society (Tam & Lee, 2010; Tam et al., 2012).

On the other hand, children may not be accurate in the perception of their parents' socialization values or even voluntarily decide to reject their parents' values. In their two-step model of value acquisition, Grusec and Goodnow (1994) emphasize that parent-child transmission occurs in two different phases. First, children perceive (more or less accurately) which values their parents want them to endorse (i.e., perceived parental socialization values). Second, children accept or reject the perceived values. If children perceive their parents' socialization values accurately and then accept rather than reject them, parent-child value congruence should be high.



Adolescence is a critical phase in the process of value transmission, during which adolescents become extremely vulnerable to value messages (Padilla-Walker, 2007). Generally speaking, boys and girls perceive their parents, both mothers and fathers, as mostly wanting to transmit to them the importance of conservation and self-transcendence values. On the contrary, adolescents perceive their parents as not interested in transmitting self-enhancement values (Barni, Ranieri, Scabini, & Rosnati, 2011). Previous studies have moreover highlighted the existence of gender differences with regard to children's perceptions of their parents' socialization values. In general, boys report that their parents give greater importance to transmitting to them self-enhancement values — which are typically considered "male values" — more than girls, whereas female adolescents perceive that their parents want them to endorse conservation values more than males do (Barni, 2009).

Several factors may influence children's perceptual accuracy and their willingness to accept their parental socialization values: parental warmth and responsiveness, parents' actual and perceived agreement were consistently found to support perceptual accuracy (Knafo & Schwartz, 2003). Previous research was instead inconsistent with regard to possible gender differences in accuracy of perception: some studies reported, in fact, females being slightly more accurate in perceiving parental values compared to males (e.g., Acock & Bengtson, 1980; Knafo & Schwartz, 2003), whereas other studies did not support this finding (e.g., Cashmore & Goodnow, 1985).

As far as children's value acceptance was concerned, the parent-child relationship quality was found to be a fundamental predictor: when the family context is characterized by support and parent-child closeness, by promotion of child's volitional functioning and (actual and perceived) value agreement between parents, children tend to be more ready to endorse their parents' socialization values (Barni et al., 2011; Barni, Vieno, Rosnati, Roccato, & Scabini, 2014). Also gender composition of parent-child dyad influences the degree of acceptance. In particular, adolescent children, especially girls, tend to accept their mothers' socialization values more than their fathers' socialization values (Barni, 2009). Because children's perception of the values their parents want them to endorse deeply influences the process of value transmission, the way this perception is measured becomes of great importance.

MEASURING CHILDREN'S PERCEPTIONS OF PARENTAL SOCIALIZATION VALUES

The Portrait Values Questionnaire (PVQ; Schwartz et al., 2001) was originally developed to measure basic personal values according to Schwartz's value theory (1992). The PVQ is an extensively used self-report scale composed of 40 (extended version) or 21 (short version) portraits of a person and his/her objectives or aspirations, which implicitly reflect the importance of a value. For example, "Thinking up new ideas and being creative is important to him/her. He/She likes to do things in his/her own original way" describes a person for whom the value of openness to change is important. Respondents' values are inferred from their self-reported similarity (from 1 = not like me at all to 6 = very much like me) to people described. Many studies supported the reliability and validity of PVQ cross-culturally (see Schwartz, 2012).

More recently, the instrument has been used to assess parental socialization values as perceived by children (e.g., Barni, 2009; Barni et al., 2011; Knafo & Schwartz, 2003), namely the values children perceive their parents would like them to endorse. In doing so, these studies have implicitly assumed that this revised version of the scale, that is, the Portrait Socialization Values Questionnaire-Children's Perceptions (PSVQ-CP), reflects the values described in Schwartz's theory, exactly as done by the original PVQ.



The revised version of the instrument (PSVQ-CP) differs from the original PVQ (Schwartz et al., 2001) in the instructions respondents are asked to follow, while the items are the same (see Table 1). In the original PVQ respondents answer the question "How much like you is this person?" for the series (40 or 21) of different portraits, whereas in the PSVQ-CP children are asked to answer the question "How your mother/father would want you to respond to each item?" for the same portraits. So far, while the psychometric properties of the PVQ have been largely investigated, there is a gap in the literature with respect to those of the PSVQ-CP.

The factor structure of the PVQ assessing personal values (e.g., Burr, Santo, & Pushkar, 2014; Steinmetz, Schmidt, Tina-Booh, Wieczorek, & Schwartz, 2009; Vecchione, Casconi, & Barbaranelli, 2009) and its cross-cultural validity (e.g., Solano & Nader, 2006; Tamayo & Porto, 2009) have been widely investigated. The majority of these studies have dealt with the extended version of PVQ, that is PVQ-40, thus showing good properties both for the structure of the ten basic values (e.g., Steinmetz et al., 2009) and the four-factor model (e.g., Vecchione et al., 2009). With regard to the shortened version of the scale, previous research suggests that the reliabilities of the ten basic values as measured with the 21 items are quite low (Schwartz, 2005), while the PVQ-21 is definitely a more valid instrument to assess the four-factor model (e.g., Verkasalo, Lönnqvist, Lipsanen, & Helkama, 2009). The use of this short version is widespread, also employed in the European Social Survey (ESS) to measure the importance given respectively to openness to change, self-enhancement, self-transcendence, and conservation values (Schwartz, 2003), and it has shown an invariant structure across cultures (e.g., Davidov, Schmidt, & Schwartz, 2008; Davidov, Datler, Schmidt, & Schwartz, 2011).

Considering the PSVQ-CP aimed at measuring children's perceptions of their parents' socialization values, Knafo and Schwartz (2003) used the instrument in order to investigate the predictors of adolescents' accuracy in perceiving the values their fathers and mothers would like them to endorse. More recently, Barni and colleagues (2011) have carried out a study where they used the extended version of the scale (40 items) in order to consider the congruence between children's personal values and their perceptions of their mothers' and fathers' socialization values.

Despite both these studies reporting acceptable internal consistency when using this scale, so far no studies have dealt with the topic of the factor structure and reliability of the PSVQ-CP for the assessment of parental perceived socialization values. For this reason, this study focused on the PSVQ-CP, in its short 21-item version, in order to analyze whether and the extent to which it actually measures the four value dimensions of Schwartz's model. Specific attention was given to children's gender and parents' gender, thus testing the factor structure and the reliability of the scale used to measure children's perceptions of maternal and paternal socialization values.

AIMS OF THE CURRENT STUDY

Based on the above considerations, the general aim of the current study was to analyze the factor structure of the PSVQ-CP in a large sample of Italian adolescents. To this aim we adopted a confirmative approach to evaluate the applicability of the original PVQ-21 factor structure to the PSVQ-CP.

More specifically, two goals guided this study: a) to examine whether the four-factor model of values (openness to change, self-enhancement, self-transcendence, and conservation) was confirmed even when assessing mothers' and fathers' socialization values as perceived by adolescents; b) to analyze the measurement invariance of the factor structure across adolescent and parent gender in order to understand



if gender differences reported in previous studies (e.g., Barni, 2009) reflect true group differences rather than deficiencies in the way perceived socialization values were measured.

METHOD

Participants and Procedure

Seven hundred and eighty-nine Italian adolescents (45.5% male, 54.5% female) took part in the research; they were all high-school students between 14 and 19 years of age (M = 15.30, SD = 1.26). Considering the family structure, a large majority of these adolescents (84.8%) lived in two biological parent families; a minority lived only with their mother (13.6%) or with their father (1.6%). While 13.9% were only children, 86.1% had one or more brothers or sisters (M = 1.67, SD = 1.06).

Participants were recruited with the collaboration of public and private high schools located in Northern Italy. Adolescents whose parents consented filled out a self-report questionnaire in their class-rooms during school hours in the presence of a teacher and a staff member. The study was approved by the scientific board of the Family Studies and Research University Centre of the Catholic University of Milan and it followed the APA ethical guidelines for human research (<u>http://www.apa.org/ethics/code/</u>).

Measures

Sociodemographic information. Adolescents were asked questions about personal characteristics (gender, age, and school attended) and family characteristics (family structure and number of siblings).

Children's perceptions of parents' socialization values. We used the short version of the Portrait Socialization Values Questionnaire-Children's Perceptions (PSVQ-CP), composed of 21 items, separately considering mothers and fathers. The instrument intends to measure the four value dimensions (openness to change, self-enhancement, self-transcendence, and conservation) theorized by Schwartz. This specific version of the scale, adapted from the Portrait Values Questionnaire (PVQ; Schwartz, 2003) and originally developed to assess one's own personal values, is presented in detail in the Section "Measuring Children's Perceptions of Parental Socialization Values."

In the original PVQ factor structure (Schwartz, 2003) six items refer to openness to change (Items 1, 6, 9, 10, 14, 20), four items concern self-enhancement (Items 2, 4, 12, 16), five items refer to self-transcendence (Items 3, 8, 11, 17, 18) and six items concern conservation (Items 5, 7, 13, 15, 19, 21) (Table 1). The importance score for each value dimension is calculated as the mean of the scores of the items for that value dimension.

Data Analysis

Factor structure and internal consistency. Confirmatory factor analysis (CFA) was used to analyze the adequacy of the four-factor structure when perceived parental socialization values are assessed. We tested two models, separately considering the mother-child dyad on the one hand, and the



TABLE 1

Items and theoretically expected factor structure of the PSVQ-CP

21-item model	Four factors
1. È importante per lui/lei avere nuove idee ed essere creativo/a. Gli/le piace fare le cose in un suo modo originale [Thinking up new ideas and being creative is important to him/her. He/she likes to do things in his/her own original way]	Openness to change
2. È importante per lui/lei essere ricco/a. Ambisce ad avere molti soldi e cose costose [It is important to him/her to be rich. He/she wants to have a lot of money and expensive things]	Self-enhancement
3. Pensa sia importante che ogni persona al mondo venga trattata allo stesso modo. Crede che ognuno dovrebbe avere le stesse opportunità nella vita [He/she thinks it is important that every person in the world be treated equally. He/she believes everyone should have equal opportunities in life]	Self-transcendence
4. È molto importante per lui/lei mostrare le proprie abilità. Vuole che la gente ammiri ciò che fa [It is very important to him/her to show his/her abilities. He/she wants people to admire what he/she does]	Self-enhancement
5. È importante per lui/lei vivere in un ambiente sicuro. Evita ogni cosa che potrebbe mettere in pericolo la sua sicurezza [It is important to him/her to live in secure surroundings. He/she avoids anything that might endanger his/her safety]	Conservation
6. Pensa che sia importante fare molte cose diverse nella vita. È sempre in cerca di novità da provare [He/she thinks it is important to do lots of different things in life. He/she always looks for new things to try]	Openness to change
7. Crede che la gente dovrebbe fare ciò che le viene detto. È convinto/a che si dovrebbero sempre seguire le regole, anche quando nessuno sta controllando [He/she believes that people should do what they're told. He/she thinks people should follow rules at all times, even when no one is watching]	Conservation
8. È importante per lui/lei dare ascolto alle persone che sono diverse da lui/lei. Anche quan- do non è d'accordo con loro si sforza di comprendere il loro punto di vista [It is important to him/her to listen to people who are different from him/her. Even when he/she disagrees with them, he/she still wants to understand them]	Self-transcendence
9. Cerca ogni occasione per divertirsi. È importante per lui/lei fare cose che sono fonte di piacere [He/she seeks every chance he can to have fun. It is important to him/her to do things that give him/her pleasure]	Openness to change
10. È importante per lui/lei prendere da solo/a le decisioni su cosa fare. Gli/le piace essere libero/a di pianificare e scegliere le proprie attività [It is important to him/her to make his/her own decisions about what he/she does. He/she likes to be free to plan and to choose his/her activities for himself/herself]	Openness to change
11. È molto importante per lui/lei aiutare le persone che ha intorno. Ambisce a prendersi cura del loro benessere [It is very important to him/her to help the people around him/her. He/she wants to care for their well-being]	Self-transcendence
12. Avere molto successo è importante per lui/lei. Gli/le piace fare colpo sugli altri [Being very successful is important to him/her. He/she likes to impress other people]	Self-enhancement
13. È molto importante per lui/lei che il suo Paese sia al sicuro. Ritiene che lo Stato debba stare in guardia contro minacce provenienti dall'interno e dall'esterno [It is very important to him/her that his/her country be safe. He/she thinks the state must be on watch against threats from within and without]	Conservation
14. Gli/le piace rischiare. È sempre alla ricerca di avventure [He/she likes to take risks. He/she is always looking for adventures]	Openness to change
15. È importante per lui/lei comportarsi sempre in modo appropriato. Vuole evitare di fare qualsiasi cosa che la gente giudicherebbe sbagliata [It is important to him/her always to behave properly. He/she wants to avoid doing anything people would say is wrong]	Conservation
16. È importante per lui/lei essere a capo degli altri e dire loro cosa fare. Vuole che la gente faccia ciò che lui/lei dice [It is important to him/her to be in charge and tell others what to do. He/she wants people to do what he says]	Self-enhancement
	(Table 1 continues)



Table 1 (continued)

21-item model	Four factors
17. È importante per lui/lei essere leale verso i propri amici. Ambisce a dedicarsi alle persone che gli/le sono vicine [It is important to him/her to be loyal to his/her friends. He/she wants to devote himself/herself to people close to him/her]	Self-transcendence
18. È fortemente convinto/a che la gente dovrebbe avere cura della natura. Tutelare l'ambiente è importante per lui/lei [He/she strongly believes that people should care for nature. Looking after the environment is important to him/her]	Self-transcendence
19. Pensa sia meglio fare le cose in modo tradizionale. È importante per lui/lei osservare le usanze che ha imparato [He/she thinks it is best to do things in traditional ways. It is important to him/her to keep up the customs he/she has learned]	Conservation
20. Godere dei piaceri della vita è importante per lui/lei. Gli/le piace "coccolarsi" [Enjoying life's pleasures is important to him/her. He/she likes to "spoil" himself/herself]	Openness to change
21. È importante per lui/lei essere umile e modesto/a. Cerca di non attirare l'attenzione su di sé [It is important to him/her to be humble and modest. He/she tries not to draw attention to himself/herself]	Conservation

father-child dyad on the other. The models were evaluated using maximum likelihood estimation with AMOS 21.0 program (Arbuckle, 2012). Each item loaded on only one factor and, because the measurement scale for each latent variable was indeterminate, one factor loading for each latent variable was arbitrarily set to one. All the factors were allowed to correlate.

In order to evaluate the overall goodness of fit of the model, we considered different statistics. First, we used the chi-square test (χ^2), which estimates the probability that the sample distribution differs from the distribution expected basing on the theoretical model. Since this index highly depends on the number of subjects who are taken into consideration in the analysis (Bentler & Bonett, 1980), with a large sample probably resulting in a significant index, we considered another parameter, namely the χ^2/df ratio: an acceptable χ^2/df ratio is usually considered to be not more than 1:3 (Carmines & McIver, 1981; Marsh & Balla, 1994). We also calculated the root mean square error of approximation (RMSEA), whose values \leq .05 are regarded as optimal and values ranging between .05 and .08 are considered acceptable (Brown & Cudeck, 1993; Hu & Bentler, 1999), the composite fit index (CFI), whose values of .90 or higher are considered satisfactory (Bentler, 1990), and the Tucker-Lewis index (TLI), whose values greater than .90 suggest an acceptable fit to the data (Hu & Bentler, 1999). We calculated Cronbach's alpha to measure internal consistency of the factors (Cronbach, 1951). As known, an α coefficient > .60 is considered acceptable (Loewenthal, 2004).

Invariance across adolescent gender. A multigroup confirmatory factor analysis (MGCFA) was then conducted in order to investigate whether the factor structure of best fit was invariant across adolescent gender (Brown, 2006; Byrne, 2001). Configural invariance, metric invariance, and scalar invariance across the two groups (boys vs. girls) were examined. Specifically, these increasingly restrictive models were tested:

Model 1 (configural invariance): the configural invariance enables to evaluate whether the same general factor structure of the scale is supported in the groups, that is whether the same number of factors is relevant and whether the same items are salient to each factor.

When considering factor differences across adolescent gender, the factor solution was tested via separate CFAs for each group (boys vs. girls). Model 1 was then examined simultaneously for invariance



across groups: no parameter constraints were imposed, thus permitting different parameter values across groups. This model is the basis for comparison with all subsequent models in the invariance hierarchy.

Model 2 (metric invariance): we tested the metric invariance, which implies that the magnitude of the loadings is similar across the groups, by constraining the factor pattern coefficients to be equal across adolescent gender. In order to compare the constrained Model 2 to the unconstrained Model 1 the χ^2 difference was calculated: A nonsignificant χ^2 difference between the two models suggests that factor loadings are consistent across the compared groups (Byrne, 2001). Additionally, the invariance hypothesis was further investigated by considering the differences in the CFI between the two models since the χ^2 test index is extremely sensitive to sample size (Hu & Bentler, 1995). Metric invariance can be retained when the change in CFI is not greater than .01 (Cheung & Rensvold, 2002).

Model 3 (scalar invariance): we tested the scalar invariance, which implies that the meaning of the construct is the same across groups, by constraining the intercepts of individual items to be equal across groups (boys vs. girls). Whenever nonsignificant differences in χ^2 and CFI between the two models emerge, the intercepts are consistent across groups (Byrne, 2001).

Invariance across parent gender. When participants respond to the same set of items concerning different relationship types, we need to make sure that the structure of the scale and the meaning of the constructs are the same across the different relationships. In doing so, we followed Tagliabue and Lanz's procedure (2014) for analyzing nonindependent data, who propose to use a modified correlated uniqueness model. By following the standard steps for measurement invariance, the authors suggest in fact to place constraints on each model across the different relationship types. In our case, we placed constraints across the different versions of the scale, that is the one where adolescents refer to their mothers and the one where they refer to their fathers.

We tested four separate models, one for each value dimension (openness to change, selfenhancement, self-transcendence, and conservation), including the items measuring that particular dimension in both mother-child and father-child relationships. When considering whether the factor solution was invariant across maternal and paternal versions of the scale a unique model was tested, where the same items (e.g., Item 1 for maternal socialization values and Item 1 for paternal socialization values) and the same factors (e.g., maternal and paternal openness to change) were correlated.

Once again, increasingly restrictive models were tested and the standard steps for measurement invariance (configural, metric, and scalar; see above for more details) were followed; constraints were placed on each model across the mothers' and fathers' socialization values. Specifically, to test configural invariance (Model 1) in order to investigate whether the factor solution was invariant across maternal and paternal versions of the scale a unique model was tested, where the same items (e.g., Item 1 for maternal socialization values and Item 1 for paternal socialization values) and factors (e.g., maternal and paternal openness to change) were correlated and no parameter constraints were imposed. To test metric invariance (Model 2), we instead constrained the factor pattern coefficients to be equal across the maternal and paternal versions of the scales. In order to compare the constrained Model 2 to the unconstrained Model 1, the χ^2 difference was calculated following the same procedure presented above. To finally test scalar invariance (Model 3), we also constrained the intercepts of individual items to be equal across versions of the scales (mothers vs. fathers). Whenever nonsignificant differences in χ^2 and CFI between the two models emerge, the intercepts are consistent across the two versions of the scale.



RESULTS

Factor Structure and Internal Consistency

After finding out some missing data, mainly due to the fact that some adolescents answered the questions with regard to one parent only, we reduced our sample to a total of 768 adolescents for the model concerning children's perceptions of their mothers' socialization values, and to 755 adolescents for the model concerning children's perceptions of their fathers' socialization values. A preliminary inspection of the item distribution was made. Skewness and kurtosis for the 21 items of the scale, separately considering the adolescents' responses referring to mothers and fathers, showed a reasonably normal distribution.

Using the above-mentioned standards for fit, the theoretically expected solution was not completely satisfactory. In particular, compared with the standards for reasonably good fit for CFA, the four-factor structure with 21 items did not fit well to the empirical data (Table 2). As far as the mother-adolescent model was concerned, the $\chi^2(183) = 584.63$, p < .001 was significant, but this was probably due to the high number of subjects who were taken into consideration. Also the alternative indexes of fit showed that our data did not fit well to the theoretically expected structure, $\chi^2/df = 3.19$; CFI = .88; RMSEA = .05; TLI = .86. Considering the father-child model, the $\chi^2(183) = 597.67$, p < .001 was significant as well, and the alternative indexes appeared to be similar to the ones of mothers and were $\chi^2/df = 3.26$; CFI = .88; RMSEA = .05; TLI=.86.

Given these results, we analyzed the modification indexes, which suggested an improved model fit by deleting Items 14 and 21. Both these items (Item 14: "He/She likes to take risks. He/She is always looking for adventures"; Item 21: "It is important to him/her to be humble and modest. He/She tries not to draw attention to himself/herself") cross-loaded onto all factors and had a weak loading on their expected factors (<.39).

In deleting Item 14, we obtained an improved model that reached acceptable fit indexes (Table 2), with the exclusion of TLI. According to the modification indexes, we decided to also eliminate Item 21, thus leading to an improved and completely acceptable model (Table 2).

This result was consistent both with regard to the mother's perceived socialization values and to the father's perceived socialization values, with the two models improving their fit to data with the same modifications. In the end, we calculated alpha coefficients for the newly found 19-item model, after deletion of Items 14 and 21. Cronbach's alpha is a measure which is widely used to assess the internal consistency, or reliability, when the factor is assessed by multiple items on a Likert scale, as it is in our case. Alpha coefficients were all satisfactory (see Table 3).

Figure 1 illustrates the factor loadings and the error variance of the final four-factor model including 19 items. All 19 items had an acceptable loading, and factor and error variances were significant (p < .05). Factor correlations ranged from .00 (p = .963), for fathers' model self-transcendence and selfenhancement, to .69 (p < .001) for fathers' model self-transcendence and openness to change values.

Invariance across Adolescent Gender

To test whether the 19 items and four-factor model found through the CFA was stable across adolescent gender, we performed a multigroup confirmatory factor analysis (MGCFA) separately in the mother-child model and in the father-child model. Table 4 displays the fit indexes for the models testing measurement invariance.

		Fit	indexes fo	r CFA test	for alterna	tive four-f	factor mode	els				
Model	χ	2	a	lf	χ^{2}	/df	RM	SEA	C	FI	T	LI
	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers
21-item model	584.63	597.67	183	183	3.19	3.26	.05	.05	.88	.88	.86	.86
20-item model (elimination of Item 14)	452.54	454.68	164	164	2.76	2.77	.05	.05	.91	.91	.89	.89
19-item model (elimination of Items 14 and 21)	367.36	370.61	146	146	2.52	2.54	.04	.04	.92	.92	.91	.91

TABLE 2
Fit indexes for CFA test for alternative four-factor models

Note. RMSEA = root mean square error of approximation; CFI = comparative fit index; TLI= Tucker-Lewis index.

TABLE 3 Cronbach's alpha coefficients for the 19-item model

Factors	Cronbach's alp	ha coefficients	Number of items
	Mothers	Fathers	
Openness to Change	.67	.69	5
Self-enhancement	.68	.70	4
Self-transcendence	.76	.75	5
Conservation	.62	.64	5

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FIGURE 1 Final four-factor model (19 items) of PSVQ-CP. OC = openness to change; SE = self-enhancement; ST = self-transcendence; CO = conservation. Underlined parameters refer to mothers' model; non-underlined parameters refer to fathers' model.

In testing measurement invariance, all the three models resulted in an acceptable fit, for both mothers and fathers. In Model 1, the indexes showed a good fit to data, thus indicating that the factor structure was invariant across groups. Even when the factor loadings were constrained (Model 2), the indexes considered showed a good fit to data. On the contrary, only partial scalar invariance of the model was found. Relaxing the constraints between the two groups for seven intercepts in the mother-child model and for six intercepts in the father-child model (Model 4) yielded a nonsignificant difference compared with the metrically invariant model (Model 2). For mothers' model, seven intercepts were not equivalent across adolescent gender; four of them referred to self-transcendence (Item 3, 8, 11, and 17) and three referred to self-enhancement (Item 2, 12, and 16). Considering instead fathers' model, six intercepts were not equivalent across adolescent gender; three of them referred to self-enhancement (Item 2, 12, and 16), two referred to self-transcendence (Item 11 and 17), and one to openness to change (Item 9). In Table 5 are presented the items' mean in the female versus male group.

	$\chi^2(df)$	р	χ^2/df	RMSEA	CFI	TLI	ΔCFI	$\begin{array}{c} \Delta \chi^2 \\ (\Delta df), p \end{array}$
Mothers								
Model 1. Configural invariance	513.48 (292)	< .001	1.76	.03	.92	.91		
Model 2. Metric invariance	528.19 (307)	< .001	1.72	.03	.92	.91		
1-2 comparison							.00	14.71 (15), <i>ns</i>
Model 3. Scalar invariance	624.30 (326)	< .001	1.91	.03	.90	.89		
2-3 comparison							27	96.11 (19), <i>s</i>
Model 4. Partial scalar invariance	541.54 (319)	< .001	1.70	.03	.92	.92		
2-4 comparison							.00	13.35 (12), <i>ns</i>
Fathers								
Model 1. Configural invariance	536.84 (292)	< .001	1.84	.03	.92	.90		
Model 2. Metric invariance	548.97 (307)	< .001	1.79	.03	.92	.90		
1-2 comparison							.00	12.13 (15), <i>ns</i>
Model 3. Scalar invariance	625.98 (326)	< .001	1.92	.03	.90	.89		
2-3 comparison							20	77.01 (19), <i>s</i>
Model 4. Partial scalar invariance	564.78 (320)	< .001	1.76	.03	.92	.91		
2-4 comparison							01	15.81 (13), <i>ns</i>

 TABLE 4

 Measurement invariance of 19-item model across adolescent gender

Note. RMSEA = root mean square error of approximation; CFI = comparative fit index; TLI= Tucker-Lewis index.

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TABLE 5

Mean score for the items where scalar invariance across adolescent gender was not found

		Mothers			
		Во	ys	G	irls
		М	SD	М	SD
Self-enhancement	Item 2	2.74	1.42	2.25	1.30
	Item 12	3.43	1.36	3.11	1.47
	Item 16	2.88	1.44	2.31	1.37
Self-transcendence	Item 3	4.53	1.30	4.77	1.32
	Item 8	4.42	1.29	4.70	1.28
	Item 11	4.54	1.20	4.87	1.20
	Item 17	4.79	1.20	5.03	1.14
		Fathers			
		Во	ys	G	irls
		М	SD	М	SD
Openness to change	Item 9	3.90	1.37	3.69	1.46
Self-enhancement	Item 2	2.90	1.43	2.41	1.45
	Item 12	3.51	1.31	3.20	1.52
	Item 16	3.01	1.47	2.56	1.54
Self-transcendence	Item 11	4.33	1.23	4.68	1.25
	Item 17	4.70	1.15	5.00	1.11

Moreover, because partial scalar invariance as well as configural and metric invariance were supported, we conducted the latent variable mean analysis across boys and girls. We constrained the factor mean of boys (reference group) to zero. The results indicated that the latent means in all subscales between the two groups were not statistically significant, neither in the mother's ($\chi^2/df = 4.62$, p = .328) nor in the father's model ($\chi^2/df = 8.36$, p = .079).

Invariance across Mothers and Fathers

To test whether the 19 items and four-factor model found through the CFA was invariant across the two versions of the scale (the one referred to mothers and the one referred to fathers), we carried out four separate models for each value domain (openness to change, self-enhancement, self-transcendence, and conservation) made of the same items applied to mothers and fathers. In Table 6 are presented the fit indexes for the models testing measurement invariance.

In testing measurement invariance, all the four higher order values showed full configural (Model 1) and metric (Model 2) invariance for maternal and paternal versions of the scale. Only partial scalar invariance was found (Model 4); it was necessary to release from two to four constraints for each higher order value in order to reach scalar invariance. Specifically, for openness to change we released the intercepts constraints of Items 1 and 20, and of Items 2 and 16 for self-enhancement. For self-transcendence values, we released instead the intercepts constraints of Items 3, 8, and 11, and of Items 5, 7, and 19 for conservation values (Model 4).

	$\chi^2(df)$	р	χ^2/df	RMSEA	CFI	TLI	ΔCFI	$\Delta \chi^2$ (Δdf), p
Openness to change								
Model 1. Configural invariance	85.89 (29)	< .001	2.96	.05	.98	.97		
Model 2. Metric invariance	89.16 (34)	< .001	2.26	.05	.98	.97		
1-2 comparison							.00	3.27 (5), <i>ns</i>
Model 3. Scalar invariance	151.571 (39)	< .001	3.89	.06	.96	.95		
2-3 comparison							20	62.31 (5), <i>s</i>
Model 4. Partial scalar invariance	96.15 (37)	< .001	2.60	.05	.98	.97		
2-4 comparison							00	6.99 (3), <i>ns</i>
Self-enhancement								
Model 1. Configural invariance	24.85 (15)	.052	1.66	.03	1.00	.99		
Model 2. Metric invariance	32.90 (19)	.025	1.73	.03	.99	.99		
1-2 comparison							00	8.05 (4), <i>ns</i>
Model 3. Scalar invariance	67.74 (23)	< .001	2.94	.05	.98	.98		
2-3 comparison							10	34.84 (4), <i>s</i>
Model 4. Partial scalar invariance	38.59 (21)	.011	1.84	.03	.99	.99		
2-4 comparison							01	5.69 (2), <i>ns</i>

 TABLE 6

 Goodness-of-fit indexes of the measurement invariance of the maternal and paternal scale for 19-item model

(Table 6 continues)

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	$\chi^2(df)$	р	χ^2/df	RMSEA	CFI	TLI	ΔCFI	$\Delta \chi^2$ (Δdf), p
Self-transcendence								
Model 1. Configural invariance	72.51 (29)	< .001	2.50	.04	.99	.98		
Model 2. Metric invariance	81.69 (34)	< .001	2.40	.04	.98	.98		
1-2 comparison							00	9.18 (5), <i>ns</i>
Model 3. Scalar invariance	167.37 (39)	< .001	4.29	.07	.96	.95		
2-3 comparison							24	85.88 (5), s
Model 4. Partial scalar invariance	83.16 (36)	< .001	2.31	.04	.97	.98		
2-4 comparison							.00	1.47 (2), <i>ns</i>
Conservation								
Model 1. Configural invariance	79.83 (29)	< .001	2.75	.05	.98	.97		
Model 2. Metric invariance	83.62 (34)	< .001	2.46	.04	.98	.98		
1-2 comparison							.00	3.79 (5), <i>ns</i>
Model 3. Scalar invariance	147.04 (39)	< .001	3.37	.06	.96	.96		
2-3 comparison							10	34.84 (5), <i>s</i>
Model 4. Partial scalar invariance	88.00 (36)	< .001	2.44	.04	.98	.98		
2-4 comparison							01	4.38 (2), <i>ns</i>

Table 6 (continued)

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Note. RMSEA = root mean square error of approximation; CFI = comparative fit index; TLI= Tucker-Lewis index.



Conservation



The releasing of these intercepts yielded a nonsignificant difference compared with the metrically invariant model (Model 2). In Table 7 are presented the items' means in the maternal versus paternal versions of the scale.

		Mot	hers	Fat	hers
		М	SD	М	SD
Openness to change	Item 1	4.26	1.25	4.04	1.30
	Item 20	3.95	1.37	3.76	1.39
Self-enhancement	Item 2	2.48	1.39	2.64	1.46
	Item 16	2.58	1.43	2.76	1.53
Self-transcendence	Item 3	4.64	1.32	4.39	1.44

4.56 4.70

4.71

4.30

4.02

Item 8

Item 11

Item 5

Item 7

Item 19

1.30

1.21

1.34

1.51

1.34

4.23

4.52

4.47

4.19

4.19

1.41

1.26

1.42

1.50

1.33

 TABLE 7

 Mean score for the items where scalar invariance across parent gender was not found

DISCUSSION

The main aim of this study was to investigate whether the original four-factor model of personal values (openness to change, self-enhancement, self-transcendence, and conservation; Schwartz, 1992) can be confirmed even when assessing parents' socialization values as perceived by children, namely the values children perceive their parents want them to endorse. In doing so, we used an adapted version of the 21-item Portrait Values Questionnaire (PVQ; Schwartz, 2003), we called the Portrait Socialization Values Questionnaire-Children's Perceptions (PSVQ-CP), which was originally developed to assess one's own basic personal values.

The measurement of children's perceptions of the values their parents want them to adopt assumes great relevance in the study of value development because of the active role children play in the process of value transmission: the more accurate children are in perceiving their parents' socialization values, the more value transmission might be successful, also depending on children's willingness to accept parental values (Grusec & Goodnow, 1994). Because of this, it is important for researchers to be confident to use a reliable measure of children's perceptions of their parental socialization values. This study makes the first step in this direction, since it aims at providing evidence for the factorial structure and the internal consistency of the PSVQ-CP considering its theoretical framework (Schwartz, 1992).

Generally speaking, the results of this study support the theoretically expected structure: the PSVQ-CP appears in fact to be a useful instrument to measure children's perceptions of parental socialization values in terms of openness to change, self-enhancement, self-transcendence, and conservation. The PSVQ-CP shows in fact a factor structure which is very similar, although not completely identical, to the original version of the PVQ aimed at measuring one's own personal values, thus being in line with Schwartz's (1992) theory. Overall, when considering the parental socialization values, the four factors showed a good internal consistency and were substantively distinct.



However, it is worth noting that our findings suggested reducing the original scale to 19 items to improve its psychometrics properties both with regard to mother's perceived socialization values and father's perceived socialization values. Two items (14 and 21) were in fact found to lower the goodness-of fit indexes, both in the case of children's perceptions of maternal values and in the case of paternal values. These two items not only loaded onto more than one factor, but also had a weak loading on their expected factors (respectively, openness to change and conservation).

Item 14 ("He/She likes to take risks. He/She is always looking for adventures"), which refers to taking risks and is theoretically supposed to tap the factor of openness to change, was the most problematic. When considering the values children perceive their parents want them to endorse, in children's responses risk-taking does not fit to a value dimension which is characterized by emphasis on change and independence. This result probably means that being creative, autonomous, and doing different things in life, which are examples of other items tapping the openness to change dimension, highly differs from taking risks in children's perceptions of their parents' socialization values. While the former (e.g., being creative) might be encouraged and fostered by the adult generation, it is likely that the latter (e.g., taking risks) assumes a negative connotation, this in line with the protective role parents play towards their children also when they are adolescents (Scabini & Iafrate, 2003). In general, risk may be viewed as danger or threat against which people believe they must protect themselves and others (Douglas, 1992). In the same way, we could speculate that children perceive risk as something their parents feel they need to protect them from, and this might be the reason why children perceive their parents as considering it as something to be avoided rather than something which emphasizes their independence. Parents might be perceived as the ones saying "not to take risks" rather than valuing it as personal disclosure to novelties.

The exclusion of Item 21 ("It is important to him/her to be humble and modest. He/She tries not to draw attention to himself/herself"), which was intended to tap the dimension of conservation and emphasizes the importance of being humble and modest (i.e., not willing to draw attention on the self), together with the exclusion of Item 14, gave an improved factor structure in terms of psychometric properties as a result. In their recent revision of the theory of human values and of the PVQ, Schwartz and colleagues (2012) suggested to define humility as the recognition of one's insignificance in the larger scheme of things and to treat it as a new and different value type.

The present study also extends previous findings by examining the measurement invariance of the PSVQ-CP across adolescent and parent gender, an important but mostly neglected topic in the literature. Measurement invariance should be instead considered together with the other well-known criteria of reliability and validity of a measurement scale. The reason why we decided to test measurement invariance across adolescent and parent gender was that children's perceptions of parental socialization values may differ depending on their own gender or on the parent (the mother or the father) they are referring to when answering the scale (e.g., Barni, 2009). However, it is unclear whether this gender effect reflects true group differences or deficiencies in the measurement of perceived socialization values. The 19-item and fourfactor model, which was the best solution we found, was fully invariant across adolescent gender with regard to configural and metric invariance, which requires that the relationships between the factors and the items are equivalent across groups. With regard to scalar invariance, where also the intercepts of individual items were constrained to be equal across groups, only partial invariance was found in both mother-child and father-child models. Our results suggest, for example, that item intercepts for self-transcendence (Item 11: "It is very important to him/her to help the people around him/her. He/She wants to care for their wellbeing," and Item 17: "It is important to him/her to be loyal to his/her friends. He/She wants to devote himself/herself to people close to him/her") and self-enhancement (Item 2: "It is important to him/her to be



rich. He/She wants to have a lot of money and expensive things," Item 12: "Being very successful is important to him/her. He/She likes to impress other people," and Item 16: "It is important to him/her to be in charge and tell others what to do. He/She wants people to do what he says") were not invariant across ado-lescent gender, both in mothers' and fathers' models. Specifically, female showed higher scores in the former group of items and lower in the latter compared to male respondents in both models.

The same issue needed to be addressed when considering instead the maternal and paternal versions of the scale; in each of the four values models the elimination of a few — in some cases, most of them — intercepts constraints was in fact needed in order to reach a model which showed no statistical significant differences compared to the fully metric invariant model previously tested.

To summarize, gender differences with regard to these dimensions must therefore be considered with caution. Moreover, researchers need to be aware that whether their aim is to consider both parents in adolescents' perceptions of parental socialization values, the two different versions of the scale used are not fully equivalent in terms of the intercepts of all items. Future studies need to more deeply investigate these topics.

As a limitation of this study, it is important to take into consideration that the sample, although quite large, was of convenience and was recruited only in the Northern Italy. It is therefore not possible to generalize our results neither to the whole Italian population nor to other countries. Because research on the topic of value transmission is widespread in several countries (e.g., Benish-Weisman, Levy, & Knafo, 2013; Tam & Lee, 2010) and cross-cultural differences in values have always been considered by researchers as highly interesting, further confirmatory research with other cultural groups is highly recommended. It may be also interesting, as a future development of this study, to consider measurement invariance across age groups, especially if a wider group in terms of age is considered. Moreover, the examination of the validity of the PSVQ-CP is also needed to define whether this modified version might be eligible to be adopted in the studies of socialization values.

In conclusion, children's accurate perceptions of the values their parents want them to endorse is a fundamental step in the process of value transmission within the family (Barni et al., 2011; Grusec & Goodnow, 1994). This study extends previous findings on Schwartz's basic human personal values by examining the challenging topic of the assessment of perceived socialization values. However, attention must be paid when assessing children's perceptions of their parents' socialization values, since a few differences with the assessment of personal values were here found. Moreover, child and parent gender should be taken into account when addressing the topic of socialization values, not only because of the differences in value priorities, but also because of the differences implied in the process of value assessment.

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