'Why do I think what I think I am?': Mothers' and fathers' contributions to adolescents' self-representations

Carla Sofia Silva[1,2], Ana Catarina Martins[3], and Maria Manuela Calheiros[1,2]

[1] Centro de Investigação em Ciência Psicológica, Faculdade de Psicologia, Universidade de Lisboa, Portugal

[2] Instituto Universitário de Lisboa (ISCTE-IUL), CIS-IUL, Lisboa, Portugal

[3] University College London Hospitals NHS Foundation Trust, London, England, UK

Author note:

This research was supported by Portuguese Foundation for Science and Technology Doctoral Grants SFRH/BD/21507/2005 and SFRH/BD/90354/2012, awarded respectively to Ana Martins and Carla Sofia Silva. We thank the schools for approving this study and are grateful to the adolescents and homeroom teachers for agreeing to participate.

Correspondence concerning this article should be addressed to Carla Sofia Silva, Centro de Investigação em Ciência Psicológica, Faculdade de Psicologia, Universidade de Lisboa, Alameda da Universidade, 1640-013 Lisboa, Portugal. E-mail: carla.silva@psicologia.ulisboa.pt.

Abstract

This study analysed adolescents' self-representation construction process, relying on the Looking Glass Self Hypothesis (LGSH) in parent-child relationships. More precisely, it analysed the mediating role of mothers' and fathers' reflected appraisals (i.e., adolescents' perceptions of their parents' appraisals of them) in the association between parents’ actual appraisals and adolescents' self-representations. Participants were 221 adolescents, 12 to 16 years old (M_{age} = 13.7, *SD* = 1.24; 58.6% girls), and their parents (mother and father). The standard paradigm was used to measure the LGSH elements: self-representations were measured with the Self-Representation Questionnaire for Adolescents, which was reworded to measure parents' actual and reflected appraisals. Structural equation modelling with bootstrap estimation supported the LGSH for all self-representation domains under analysis. Results revealed full mediation of mothers’ reflected appraisals in associations between mothers’ actual appraisals and adolescents’ self-representations for the instrumental and social domains, and partial mediation for the emotional and opposition domains. As for fathers, full mediation was found for the instrumental, social and opposition dimensions, while partial mediation was observed for the emotional dimension. Results are discussed considering the specificities of the adolescent-mother/father relationship and the different self-representation domains.

Keywords: Adolescents, Looking-glass self, Self-representations, Parents’ actual appraisals; Parents’ reflected appraisals

‘Why do I think what I think I am?’: Mothers’ and fathers’ contributions to adolescents’ self-representations

The experience of a sense of self is one of the defining characteristics of being human (Oyserman, 2015). In the latest theories and contemporary research, self-concept is conceptualized as a dynamic and multidimensional system in which information about the self is organized into differentiated contextual and domain-specific self-representations (Oosterwegel & Oppenheimer, 2002; Oyserman et al., 2012). Self-representations are constructed in an open-ended process throughout the individuals’ development, involving different aspects of their biological, physical, cognitive, emotional and social worlds (e.g., Harter, 2015; Paulus et al. 2018). Given the significance of the self-concept for adaptive development and behavior (Pfeifer & Berkman, 2018), psychological research has been highly interested in investigating the predictors of individuals’ self-representations.

Even though the construction of people’s self-representations requires their own perspectives about themselves and introspection, a substantial body of research suggests that self-knowledge sources are also based on social interactions, including not only individuals’ perceptions and ratings of how they are perceived by others – that is, others’ reflected appraisals –, but also how others actually perceive and rate those individuals’ personal attributes – that is, others actual appraisals (e.g., Bollich et al., 2011; Van der Cruijsen et al., 2019; Harter, 2015; Noels et al., 2010). As proposed by the self-other asymmetry model (Vazire, 2010), while individuals have privileged knowledge about some aspects of themselves (e.g., thoughts, feelings, private behaviours), research has indicated that they also have blind spots in their self-knowledge (Gallrein et al., 2013; Vazire & Carlson, 2010, 2011). Others can often contribute additional valid information about an individual that he or she is unable or unwilling to provide through introspection alone. Others, especially close ones (Bollich et al., 2011), may have more accurate knowledge about features of the

individual that are more observable (e.g., dominant, funny) and evaluative (e.g., attractive, intelligent), compared to the individuals themselves (Jackson et al., 2015). Thus, one uniquely promising aspect of reflected appraisal as a route to self-knowledge is that if gives people new information to consider (Bollich et al., 2011). Consistent with this line of reasoning, neural evidence showing that people allocate significantly more attention to the reflected appraisals than to introspection supports the notion that reflected appraisals are a main source for people’s knowledge about themselves (Xu et al., 2015).

The role of others in the construction of individuals’ self-representations was articulated in the symbolic interactionism theoretical framework (Cooley, 1902/1964; Mead, 1934), which conceives the self as a social construction (Swann & Bosson, 2010), asserting that the way individuals see themselves is strongly influenced by their experiences in social contexts. Cooley (1902/1964) proposed the Looking-glass Self Hypothesis (LGSH) to articulate his notion about the role of significant others on one’s self-representation construction process, arguing that what individuals think about themselves reflects how they perceive to be perceived by significant others (Bollich & Varize, 2011). This process of internalization of others’ perceptions of the individual in self-representation was systematized by Kinch (1963), who proposed a causal model according to which what others actually think of the individual (i.e., others’ actual appraisals) influences the individual’s perceptions about what others think about him (i.e., others’ reflected appraisals), which, in turn, influences individual’s self-representations; that is, self-representations are indirectly influenced by others’ actual appraisals of the individual, through others’ reflected appraisals (Stets et al., 2020). This model has been the groundwork of research focusing on the test of the LGSH (e.g., Nurra & Pansu, 2009; Wallace & Tice, 2012). However, research on the LGSH has provided mixed results: even though associations between others’ reflected appraisals and self-representations have been found, associations between others’ actual appraisals and self-

representation, and between others' actual appraisals and others' reflected appraisals have not been consistently verified (Hergovich et al., 2002; Shrauger & Schoeneman, 1979; Wallace & Tice, 2012).

This inconsistency of findings highlighted the fact that individual's reflected appraisals may or may not accurately reflect others' actual appraisals. Several reasons have been proposed to explain variation in reflected appraisals accuracy. First, social communication is diluted by norms of politeness and simple reluctance to give negative feedback; people are not always honest when telling others what they think of them (Fish et al., 2017). Thus, reflected appraisals are shaped by a set of cues that can be often incomplete or ambiguous, which can undermine individuals' accuracy in perceiving others' appraisals of them (Wallace & Tice, 2012).

Second, even when people do honestly tell individuals what they think of them, the receptor of such feedback does not passively accept that information. Instead, the self actively processes and selects (and sometimes distorts) information from the social world (Stets et al., 2020). People often use self-deception processes to help them avoid facing disagreeable facts about themselves (Harter, 2015; Sedikides & Gregg, 2008; Zell et al., 2020). Being subjective variables, others' reflected appraisals could difficultly be immune to the individual's own perspective and be solely informed by others' actual appraisals communicated in social interactions. When evaluating others' perceptions about themselves, people also inevitably use private information that others do not have (Chambers et al., 2008; Vazire & Carlson, 2011).

Third, the extent to which ones' reflected appraisals are permeable to the available information about others' actual appraisals also depends on the characteristics of the social relationships considered (Bollich et al., 2011; Wallace & Tice, 2012; Young & Martin, 2003). Even though the construction of one's self-schemas is informed by social interactions in

general, as well as by the wider social and cultural social context, it is also recognized that some social relationships are more relevant than others in this process (Oyserman & Markus, 1993; Oyserman et al., 2012). Indeed, one of the strongest reasons appointed to the weak or inexistent association between others' actual appraisals and others' reflected appraisals is that many tests of the LGSH have not considered individuals' significant others (Cook & Douglas, 1998; Kenny & DePaulo, 1993). When outlining the LGSH, Cooley (1902) argued that reflected appraisals are more likely to become assimilated into the individual's self-concept if he/she considers the other person as significant. Close or significant others, such as parents and friends, are likely to have more information about an individual's personal attributes than strangers (Vazire, 2010). In relationships with significant others, where frequent communication and interaction are more likely, the cues about close others' actual appraisals are more frequently available and more likely to be regularly observed by the target individual, thus allowing him/her to have a better awareness of significant others' actual appraisals of them (Cook & Douglas, 1998). More recent evidence has revealed that people are more confident about their reflected appraisals regarding informants they are closer to or who they know longer (Carlson & Furr, 2013). In addition, research has indicated that close others make more accurate appraisals than others in general and thus are a more accurate source of feedback for self-knowledge than less close acquaintances (Bollich et al., 2011; Vazire, 2010; Vazire & Carlson, 2010, 2011). In line with these arguments and evidence, research on the LGSH has emphasized the relevance of the relationship context in which it is tested. Studies examining the LGSH in the context of relationships with significant others (e.g., parent-child, romantic relationships, peers) have supported the influence of significant others on individuals' self-representations and suggested that this is mediated by significant others' reflected appraisals (Bois et al., 2005; Hergovich et al., 2002; Ichiyama, 1993; Murray et al., 2000; Nurra & Pansu, 2009).

Additionally, research on the LGSH has often neglected individuals' development phase. Most of the studies showing weak or lack of support of the LGSH have been conducted with college students whose self-representations may be more consolidated and, consequently, less susceptible to the influence of others (Kenny & DePaulo, 1993; Pfeifer et al., 2009). Given that self-concept is most malleable in early life, significant others, especially parents, are particularly influential in shaping the construction of individuals' self-representations across childhood and adolescence in almost every domain of activity (Carmichael et al., 2007; Paulus et al., 2018). Indeed, studies developed with children (e.g., Bois et al., 2005; Nurra & Pansu, 2009) have found support for the mediation effect proposed in the LGSH. Studies with adolescents, however, have been scarce, even though research consistently indicates that adolescence is an important period for self-development, marked by an intense exploration of the self (Klimstra et al., 2016; Harter, 2015).

The multiple normative developmental changes at the biological, cognitive, and social levels that take place in adolescence enable and enhance the increasing differentiation of the self (Pfeifer & Peake, 2012; Sawyer & Azzopardi, 2018). Namely, changes at the neural and cognitive development level lead to an increase in introspection, self-awareness, and concern with self-image (Pfeifer & Berkman, 2018; Pfeifer et al., 2013; Ray et al., 2009). The proliferation of social roles and contexts provide a multiplicity of information to consider in constructing one's self-representations (Jankowski, et al., 2014). The acquisition of new cognitive and social skills allows changes in how individuals perceive themselves, leading to a greater abstraction, complexity and multiplicity of self-representations (Steinberg, 2013). This is accompanied by a heightened self-consciousness that leads to increased concerns about the self and to a greater self-awareness of how one is perceived by others (Pfeifer et al., 2009; Harter, 2015). At the same time, significant physical and social transformations also shape their representations of themselves (Meeus, 2011). Visible physical changes in the

body contribute to the relevance attributed to physical appearance self-representations during this developmental phase (Harter, 2015; Mustillo et al., 2012).

In this scenario of ongoing developmental transformations, increasing differentiation of the self, challenged sense of self-coherence, the quest for a coherent sense of self is a major developmental task in this phase (Becht et al., 2016; van Doeselar et al., 2018). As adolescents try to figure out what others think about themselves in order to decide which information to include in their self-definitions, the influence of the opinions of others, especially significant or close ones (e.g., parents, friends), become especially expressive in this development phase (Van der Crujien et al., 2019; Harter, 2015; Jankowski et al., 2014). Indeed, neural evidence has shown that reflected appraisals affect the self-appraisals of adolescents more than adults' (Van der Crujien et al., 2019; Pfeifer et al., 2009; Pfeifer et al., 2013). Therefore, the lack of studies testing the LGSH with adolescents is a gap to be filled in research on the symbolic interactionism perspective.

Studies with children that include different significant others (e.g., Pfeifer et al., 2009; Nurra & Pansu, 2009) suggest that the test of the LGSH should take into account the significant others considered as well as the self-representation dimensions evaluated, given that specific significant others influence specific self-representation domains differentially (Van der Cruijen et al., 2018). Specifically, Nurra and Pansu's study (2009) supported the LGSH and found that, while teachers' influence was only observed in the academic and social domains, parents' influence was significant in all domains of children's self-perception evaluated. In turn, Pfeifer's et al. (2009) results indicated that adolescents attach more value to the perspective of friends for evaluations of social attributes, but more value to mothers' perspective for evaluations of academic attributes. Regarding the potential contributions of different significant others to the construction of self-representations in adolescence, although peers become increasingly prominent in adolescents' significant relationships network (e.g.,

Harter, 2015; Jankowski et al., 2014; Pfeifer & Peake, 2012), interactions with parents still continue to have a pivotal role as building blocks for self-construction (e.g., Gniewosz et al., 2012, 2015; McLean, 2016; Nurra & Pansu, 2009).

Although the studies with children, developed by Nurra and Pansu (2009), Bois et al. (2005) and Hergovich et al. (2002), represent an important advance in research on the LGSH, in both studies mothers' and fathers' actual perceptions were analysed together, as one variable. However, prior research has shown that mothers and fathers can play different roles in their children's self-concept development (Dailey, 2009, 2010; McGrath & Repetti, 2000). Dailey (2009, 2010) has argued that differences in communication with both parents, as well as in adolescents' expectations of mothers and fathers, may account for the differential role of mothers and fathers on adolescents' self-concept. To date, most research comparing mothers' and fathers' parenting behavior indicates that that mothers are generally more sensitive toward their children than fathers (e.g., Barnett et al., 2008; Hallers-Haalboom et al., 2014, 2017). These differences may be related with mothers spending on average two to three times as much time with their children than fathers do (Huerta et al., 2013), due to which they might have more knowledge of their children's behaviour and attributes. Based on these parent gender differences, adolescents' interactions with their mother and father might yield differences in their feedback regarding self-relevant information, which can be reflected in differences between mothers' and fathers' role in their children's self-concept.

Consistent with these arguments, research on the role of significant others on children's and adolescents' self-representation construction process has suggested that mothers' and fathers' influence differ from one another, showing a greater impact of mothers' actual appraisals on children's self-representations, as compared to fathers'. For example, Hergovich et al. (2002) found that mothers', but not fathers', actual appraisals predicted children's self-perceptions in several dimensions (e.g., general school competence).

However, fathers' reflected appraisals predicted children's' self-perceptions in some dimensions (e.g., physical competence). Indeed, research suggests that differences between the roles of mothers and fathers emerge more in parents' reflected appraisals than in parents' actual appraisals. In line with this assumption, Brewin, Andrews and Furnham (1996) found that adolescents perceived a higher level of approval from their mothers, as compared to their fathers, even though no differences were found between mothers' and fathers' evaluations of approval regarding their children. Moreover, adolescents' perception of their mothers' approval (i.e., mothers' reflected appraisals) mediated the relationship between mothers' actual approval (i.e., mothers' actual appraisals) on adolescents' self-evaluations, but the same was not observed regarding the influence of the fathers. These authors suggested that such findings could be related with the fact that mothers' influence may occur more through the expression of approval, while fathers' influence might happen in a more subliminal way. Another study (McGrath & Repetti, 2000) found that, for mothers, it was their level of satisfaction that was associated with children's self-perceptions, while for fathers, the importance attributed to school performance was associated with their daughter's self-perception of school competence. Taken together, these studies suggest that research focused on analysing the role of significant others on adolescents' self-representations construction should look into the specific influence of both mothers and fathers.

Based on this theoretical and empirical background, this study aimed to test the LGSH in the parent-adolescent relationship context. Specifically, we analysed the mediating role of parents' reflected appraisals (i.e., adolescents' representations about how they are perceived by their parents) in the relationship between parents' actual appraisals (i.e., what parents actually think of their child) and adolescents' self-representations, in the adolescent-mother and adolescent-father relationships separately. In line with the LGSH, three relationships among the model variables were expected: 1) actual appraisals would be associated with

adolescents' self-representations (i.e., a significant total effect of actual appraisals on self-representations); 2) actual appraisals would be associated with reflected appraisals; and 3) reflected appraisals would be associated with adolescents' self-representations. In addition, it was expected that both mothers' and fathers' reflected appraisals would mediate associations between their actual appraisals and adolescents' self-representations. That is, the strength of the association between parents' actual appraisals and adolescents' self-representations would decrease when considering the effect of reflected appraisals.

Method

Participants

Participants were 221 adolescents and their parents. Of these, 195 cases included both parents' reports, and 26 included only one parent's report, of which 22 were mothers' reports and four were fathers' reports. Adolescents (58.6% girls) were 12 to 16 years old (M = 13.7; DP = 1.24); 35.1% attended the seventh grade, 39.4% eighth grade, 16.8% ninth grade, and 8.7%, tenth grade. Regarding adolescents' academic attainment, 67% reported to never have failed a grade; 29% stated to have failed (44 failed once; 20, twice; and one three times); and 4.1% did not answer this question. Regarding household characteristics, 80.5% of adolescents lived with their father and 14.5% stated to not live with their father (5.0% did not answer this question). Almost all adolescents (91.9%) lived with their mother and only 1.8% did not (6.3% did not answer this question). As for the participating parents, mothers were 28 to 56 years old (M = 40.53; SD = 4.64) and fathers 31 to 60 years old (M = 43.66; SD = 4.92). Mothers and fathers presented similar characteristics regarding their academic degree. For fathers, 22% completed elementary school; 17.6%, sixth grade; 22.5% ninth grade; 18.7% high school; and 19.2%, college education. As for mothers, 20.0% completed elementary school; 18.4%, sixth grade; 19.5%, ninth grade; 18.4%, high school; and 23.8%, college educations.

Measures

Self-representations. The Self-Representation Questionnaire for Adolescents (SRQA; Martins 2013; Silva, Martins, & Calheiros, 2016). The SRQA consists of 18 attributes (10 positive - e.g., happy, intelligent; and 8 negative - e.g., sad, lazy). Adolescents were asked to indicate to what extent each attribute generally describes them, in a 5-point Likert scale, from 1 (I am not at all like this) to 5 (I am exactly like this). Regarding the development of this measure, two procedures were used for the attributes' identification: word frequency lists (e.g., schoolbooks word frequency) and an open-ended questionnaire. Additionally, to select the attributes, two criteria were adopted: 1) frequency, that is, the selection of attributes more often mentioned; and 2) identification of an equivalent number of positive and negative attributes. This procedure was complemented with the analysis of the attributes' relevance and valence (Martins & Calheiros, 2012). SRQA comprises six factors: Instrumental (five attributes: responsible, organized, messy, hard-working and misbehaved); Social (four attributes: caring, nice, friend, and helpful); Intelligence (two attributes: intelligent and smart); Emotional (three attributes: sad, lonely and angry), Physical appearance (two attributes: pretty, ugly); and Opposition (two attributes: grouchy and stubborn). The negative attributes are reverse scored. As such, higher values in each dimension represent more favourable self-representations. A confirmatory factor analysis of this structure, using AMOS (v. 25; Arbuckle, 2017a) provided a good model fit: $\chi^2(118) = 258.92$, $p < .001$; $\chi^2/df = 2.158$; CFI = .90; RMSEA = 0.06 (Martins et al., 2015).

Parents' actual appraisals and reflected appraisals. In order to assess parents' actual appraisals and parents' reflected appraisals at the same level of specificity of adolescents' self-representations, that is, taking into account the same self-representation domains and respective attributes, the classic procedure (e.g., Nurra & Pansu, 2009) was used to measure the LGSH components. Therefore, the instruments to measure parents' actual

appraisals and parents' reflected appraisals were adapted from the self-representations measure by rewording its composing items in order to tap parents' representations and adolescents' perceptions of their parents' representations (e.g., Hergovich et al., 2002; Nurra & Pansu, 2009).

Parents' Actual Appraisals. To measure parents' actual appraisals, both parents were asked to rate to what extent each of the SRQA 18 attributes generally described their child, in a 5-point Likert scale, from 1 (not at all like this) to 5 (exactly like this). Hence, this measure was obtained by rewording the SRQA items segment "I am…" into "My son/daughter is…"

Parents' Reflected Appraisals. Likewise, to measure parents' reflected appraisals, adolescents were asked to rate their perceptions about to what extent both their parents' thought that each of the SRQA 18 attributes generally described them (i.e., the adolescents), in a 5-point Likert scale, from 1 (not at all like this) to 5 (exactly like this). To that end the measure was obtained by rewording SRQA items segment "I am…" into "My mother/father thinks I am…" Adolescents rated mothers' reflected appraisals and fathers' reflected appraisals separately.

Factor validity of parents' actual appraisals and reflected appraisals measures. In order to identify the structure underlying the measures of parents' actual and reflected appraisals, exploratory factor analyses (EFA) were conducted through Principal Axis Factoring method. These analyses revealed that six items – intelligent, smart, handsome, ugly, misbehaved and angry – did not meet the criteria for retention in the EFAs and/or were not organized in the same dimensions for all respondents and/or. In addition, to assess parents' reflected appraisals and parents' actual appraisals at the same level of specificity of adolescents' self-representations, that is, considering the same self-representation domains and its composing attributes, these six items were removed from the analysis. This way, the LGSH could be tested with the attributes that were organized in the same dimensions for all

respondents and perspectives. Thus, each measure of the LGSH elements – self-representations, mothers' reflected appraisals, fathers' reflected appraisals, mothers' actual appraisals, and fathers' actual appraisals – was composed of 12 items organized in four factors: Instrumental (organized, responsible, untidy, hard-working), Social (nice, helpful, friendly, caring), Emotional (sad and lonely) and Opposition (grouchy and stubborn). In all measures, the dimensions showed moderate to good reliability levels (*Self-representations*: Instrumental $\alpha = .77$, Social $\alpha = .69$, Emotional $r = .47$ $p < .01$, Opposition $r = .46$ $p < .01$; *Mothers' reflected appraisals*: Instrumental $\alpha = .82$, Social $\alpha = .73$, Emotional $r = .55$ $p < .01$, Opposition $r = .51$ $p < .01$; *Fathers' reflected appraisals*: Instrumental $\alpha = .81$, Social $\alpha = .79$, Emotional $r = .54$ $p < .01$, Opposition $r = .53$ $p < .01$; *Mothers' actual appraisals*: Instrumental $\alpha = .77$, Social $\alpha = .74$, Emotional $r = .50$ $p < .01$, Opposition $r = .37$ $p < .01$; *Fathers' actual appraisals*: Instrumental $\alpha = .74$, Social $\alpha = .70$, Emotional $r = .56$ $p < .01$, Opposition $r = .35$ $p < .01$). The factor validity of all five measures structure was tested through confirmatory factor analyses using AMOS (v. 25; Arbuckle, 2017a). All five models tested presented a good fit to the data – *Self-representations*: $\chi^2(48) = 88.260$ $p < .001$, $\chi^2/df = 1.839$, CFI = .92, RMSEA = .06; *Mothers' actual appraisals*: $\chi^2(49) = 82.902$ $p < .001$, $\chi^2/df = 1.692$, CFI = .94, RMSEA = .06; *Mothers' reflected appraisals*: $\chi^2(49) = 91.103$ $p < .001$, $\chi^2/df = 1.750$, CFI = .94, RMSEA = .06; *Fathers' actual appraisals*: $\chi^2(49) = 73.533$ $p < .001$, $\chi^2/df = 1.480$, CFI = .95, RMSEA = .05; and *Fathers' reflected appraisals*: $\chi^2(49) = 82.280$ $p < .001$, $\chi^2/df = 1.667$, CFI = .94, RMSEA = .06).

Alternative models. Since both measures of self-representation and meta-representation were answered by the same participant – the adolescent – it is necessary to understand whether these measures are indeed different or if they form part of the same dimension. Thus, two alternative models to the proposed model were tested: 1) a model in which the corresponding self-representations and reflected appraisals dimensions were

specified as being part of the same second-order factor (model 1), and 2) a model in which the dimensions of self-representations and reflected appraisals were correlated (model 2). These alternative models did not fit the data well [Alternative model 1: $\chi^2(244) = 841.286$ $p < .001$, $\chi^2/df = 3.45$, CFI = .68, RMSEA = .11; Alternative model 2: $\chi^2(237) = 545.011$ $p < .001$, $\chi^2/df = 2.30$, CFI = .83, RMSEA = .08], thus supporting the organization of the factors of self-representations and reflected appraisals factors in separate models, as reported above.

Procedure

Initially, public schools in three different Portuguese municipalities – Lisbon (Portuguese capital and largest city), Mafra (a mainly rural municipality within Lisbon district), and Castelo Branco (a city in Central Portugal) were contacted, in order to obtain their authorization to conduct the study. Following schools' authorization, parents were sent a consent form and an envelope with the questionnaires. Consent forms and filled out questionnaires were then returned to the schools in a sealed envelope. Parents' consent rate was 80.0%. After parents' consent was obtained, adolescents' questionnaires were group administered in a classroom setting. This process took approximately 30 minutes. At the start of the assessment, adolescents were told that the study focused on what adolescents think of themselves, that their participation was voluntary, and they could choose not to participate if they desired. Participants' anonymity was guaranteed, and they were assured that information would be used only for research purposes. Adolescents were then asked to sign a consent form. Finally, the instructions of each questionnaire were read prior to adolescents started to fill it out.

Data analyses

The LGSH model was tested through two structural equation models using Analysis of Moment Structures (AMOS, v. 25; Arbuckle, 2017a) with bootstrap estimation: one considering the adolescent-mother relationship and another considering the adolescent-father

relationship. In both models the variables instrumental, social, emotional and opposition were specified as latent variables. The instrumental and social variables/dimensions were measured through four manifest indicators each, and the emotional and opposition variables/dimensions were measured through two manifest indicators each. Structural paths were estimated between a) mothers/fathers' actual appraisals and mothers/fathers' reflected appraisals, b) mothers/fathers' reflected appraisals and adolescent's self-representations, and c) mothers/fathers' actual appraisals and adolescents' self-representations.

Associations between variables were specified allowing correlations between factors' estimation errors to be freely estimated, based on modification indices and theoretical interpretability. Given that adolescents' self-representations and parents' reflected appraisals were rated by the same respondent (i.e., the adolescent), the measure errors of the self-representations indicators were allowed to correlate between the self-representations and parents' reflected appraisals dimensions, based on modification indices and theoretical interpretability. Multiple indices of fit were examined to determine the adequacy of the tested models' fit to the data. Criteria for evaluating model fit were the following; the relative χ^2 index (χ^2/df) values ≤ 2 (Arbuckle, 2017b), the comparative fit index (CFI) approaching 1, and the root mean square error of approximation (RMSEA) < .08 (Hu & Bentler, 1999; Kline, 2015).

Thus, self-representations, mother's reflected appraisals, father's reflected appraisals, mother's actual appraisals and father's actual appraisals consisted of four latent variables: Instrumental (four manifest indicators), Social (four manifest indicators), Emotional (two manifest indicators), and Opposition (two manifest indicators). A bootstrap approach (Shrout & Bolger, 2002) was used to test our mediation hypotheses, by performing a nonparametric resampling method (bias-corrected bootstrap; Preacher & Hayes, 2004) with 1000 resamples drawn with replacement from the original sample to derive the 95% confidence interval for

the indirect effect. Next, given the cross-sectional nature of the data, we tested an alternative model that was the reverse of the LGSH model, to exclude the possibility that the reverse order of the variables in the mediation models would result in full or partial mediation as well. We did so for both the adolescent-mother and adolescent-father models.

Results

Descriptive statistics and correlations

For descriptive purposes, means, standard deviations, and intercorrelations of the study variables are presented in Table 1. The correlations were generally consistent with the theorized pattern of relationships. Self-representations showed moderate to strong correlations with both mothers' and fathers' reflected appraisals in all dimensions evaluated, and moderate correlations with mothers' and fathers' actual appraisals in all representation dimensions. Likewise, both for mothers and fathers, actual appraisals were moderately correlated to reflected appraisals. Not surprisingly, results showed strong correlations found between mothers' and fathers' reflected appraisals, and moderate correlations between mothers' and fathers' actual appraisals.

[INSERT TABLE 1]

Mediation model

Model 1. LGSH in the adolescent-mother relationship. Test of the overall model of mother's reflected appraisals mediating role between mother's actual appraisals and adolescent's self-representations provided an acceptable fit to the data: $\chi^2(565) = 849.097$, $p < .001$, $\chi^2/df = 1.50$, CFI = .90, RMSEA = .05. As shown in Figure 1, results reveal that mothers' actual appraisals total effect on adolescents' self-representations was strong and significant in all the dimensions: instrumental, social, emotional, and opposition, indicating that the higher (i.e., more positive) the mothers' actual appraisals in a given dimension, the higher the adolescents' self-representations in that same dimension. Regarding associations

between mothers' actual appraisals and reflected appraisals, these were also significant for all the dimensions included in the model, indicating that the higher (i.e., more positive) the mothers' actual appraisals, the higher the mothers' reflected appraisals. Likewise, mothers' reflected appraisals had a positive and significant effect on adolescents' self-representations in all the dimensions. The model explained approximately 81% of self-representations variance in the instrumental dimension, 69% in the social dimension, 67% in the emotional dimension, and 79% in the opposition dimension.

A bootstrap estimation revealed significant indirect effects of mothers' actual appraisals and adolescents' self-representations through mothers' reflected appraisals in all self-representation dimensions: instrumental $\beta = .58$, $p = .001$, social $\beta = .44$; $p = .001$, emotional ($\beta = .31$; $p = .009$, and opposition $\beta = .36$; $p = .001$) dimensions. Results also showed that, regarding the instrumental and social dimensions, the direct effect of mothers' actual appraisals on self-representations were non-significant (i.e., mothers' actual appraisals effect on self-representations was fully mediated by mothers' reflected appraisals). In contrast, for the emotional and opposition dimensions, although there was a significant decrease in the total effect of mothers' actual appraisals on self-representations, the direct effect was still significant (i.e., mothers' actual appraisals effect on self-representations was partially mediated by mothers' reflected appraisals). Thus, these findings support the LGSH in the adolescent-mother relationship (i.e., the mediating role of mothers' reflected appraisals in associations between mothers' actual appraisals and self-representations) (Figure 1).

Alternative model. We compared the fit of this model with the fit of an alternative model that was the reverse of the LGSH model. Results showed that the model we proposed fit the data better than the reverse model: $\Delta\chi^2(2) = 15.646$, $p < .001$.

Model 2. LGSH in the adolescent-father relationship. Similar to model 1, fit indices analysis of the model examining fathers' reflected appraisals mediating role in

fathers' actual appraisals effects on adolescents' self-representations indicated an adequate model fit to the data: $\chi^2(572) = 817.414$, $p < .001$, $\chi^2/df = 1.42$, CFI = .90, RMSEA = .05). As shown in Figure 2, results revealed that fathers' actual appraisals total effect on adolescents' self-representations was strong and significant in all the dimensions: instrumental, social, emotional, and. The higher (i.e., more positive) the fathers' actual appraisals in a given dimension, the higher the adolescents' self-representations in that same dimension. Fathers' actual appraisals effects on fathers' reflected appraisals were also positive and significant in all the dimensions. That is, the higher (i.e., more positive) the fathers' actual appraisals, the higher the fathers' reflected appraisals. As for associations between fathers' reflected appraisals and adolescents' self-representations, results also revealed positive and significant effects in all dimensions. The entire model explained 72% of self-representations variance in the instrumental dimension, 74% in the social dimension, 88% in the emotional dimension, and 99% in the opposition dimension.

A bootstrap estimation revealed significant indirect effects of fathers' actual appraisals on self-representations through fathers' reflected appraisals in the instrumental (β = .37; p = .001), social (β = .41; p = .001), emotional (β = .61; p = .001) and opposition (β = .56; p = .001) dimensions. Results also showed that the direct effects of fathers' actual appraisals on self-representations were non-significant for all dimensions, except for the instrumental dimension, indicating full mediation of fathers' reflected appraisals in associations between fathers' actual appraisals and adolescents' self-representations for the social, emotional, and opposition dimensions. Therefore, these findings support the LGSH in the adolescent-father relationship (Figure 2).

Alternative model. We compared the fit of this model with the fit of an alternative model that was the reverse of the LGSH model. Results showed that the model we proposed fit the data better than the reverse model: $\Delta\chi^2(2) = 15.363$, $p < .001$.

Discussion

The aim of the present study was to test the Looking-Glass Self Hypothesis (LGSH), through structural equation modelling, considering the relationship between 12 to 16 years old adolescents and their parents (mother and father). Considering both adolescent-mother and adolescent-father relationship, the LGSH was supported in this study, for each of the four dimensions analysed (instrumental, social, emotional and opposition). In addition, in the adolescent-mother relationship model, findings showed full mediation for the instrumental and social dimensions, and partial mediation for the emotional and opposition dimensions; in the adolescent-father relationship model, total mediation was shown for the social, emotional and opposition dimensions. Therefore, these findings support the assumption that what parents think of their sons and daughters (i.e., parents' actual appraisals) is associated with what adolescents think of themselves (i.e., self-representations) through what adolescents think their parents think of them (i.e., parents' reflected appraisals). These findings support the results obtained in previous studies conducted with children focused on their self-perceptions of competence (e.g., Bois et al., 2005; Nurra & Pansu, 2009), in which the LGSH was supported regarding perceived academic, physical and behavioural skills, and social acceptance (Nurra & Pansu, 2009), and athletic skills (Bois et al., 2005).

Research on the LGSH has emphasized the importance of the dimensions assessed, not only because it has been shown that in some dimensions specific others' contribution is stronger (e.g., Nurra & Pansu, 2009; Van der Cruijen et al., 2018), but also because the dimensions assessed have to be relevant to the target – in this case, the adolescents – as well as to the specific others under consideration and their relationship with the target (Cook & Douglas, 1998). Based on these claims, in this study, the factor analyses conducted with the measures used to assess the LGSH components allowed the test of this hypothesis with the dimensions and their composing attributes that were relevant for both the target (i.e.,

adolescents) and the observer (i.e., parents). Additionally, many of the identified attributes reflect behavioural aspects that can be observed and communicated through interactions with others. This reinforces the argument of the importance of the assessment of dimensions that are likely to be communicated and to provide observable clues of how the observer perceives the target (Cook & Douglas, 1998; Wallace & Tice, 2012).

As previously mentioned, a substantial body of research on reflected appraisals precision has suggested that individuals are not very precise in perceiving how others perceive them (e.g., Kenny & DePaulo, 1993; Shrauger & Schoeneman, 1979). Nevertheless, it has also been demonstrated that in relationships with close others, in which there are more opportunities for communication of one's perceptions, interactions between the target and the observer, and a greater motivation to pay attention to the clues and feedback provided by the observer, it is possible to observe a stronger and more significant association between what others actually think and individuals perception of how they are perceived by others (Biesanz et al., 2007; Carlson et al., 2010, 2011; Cook & Douglas, 1998; Human & Biesanz, 2011). Therefore, in this study, the LGSH was tested in a close relational context with both parents as the significant others.

Findings of this study also emphasise the importance of including both mothers and fathers in understanding the process of self-representation construction, since the LGSH was supported considering both parents' contributions to adolescents' self-representations. Additionally, while the mothers' role has been usually emphasized in the analysis of parents' impact on the individual's development, the fathers' role, although also recognized as important by both researchers and laypeople, has been notoriously less explored in research on adolescence (e.g., Phares et al., 2005; Phares et al., 2009). Therefore, in the present study, the inclusion of fathers not only contributed to address underrepresentation of fathers in the literature, but it also added to the existing evidence by suggesting that fathers' role in

adolescents' self-representation construction process is as relevant as mothers' role.

Furthermore, given the previous evidence accounting for differences between the influence of mothers and fathers on adolescents' self-concept (Dailey, 2009, 2010; Herzgovich et al., 2002; McGrath & Repetti, 2000), their influence was analysed in separate models – one model for the adolescent-mother relationship and another for the adolescent-father relationship – thus allowing a deeper understanding of how such influence occurs. Indeed, although in the present study the LGSH was supported in both models for all the dimensions evaluated, the pattern of results was not exactly the same for the two models: in the adolescent-mother relationship model, associations between mothers' actual appraisals and self-representations were fully mediated by mothers' reflected appraisals in the instrumental and social dimensions, and partially mediated for the emotional and opposition dimensions; in the adolescent-father relationship model, full mediation was found in the social, emotional and opposition dimensions, and partial mediation was observed in the instrumental dimension. These differences might reflect differences in the patterns of relationship between the adolescents and both parents (Smetana et al., 2015; Tsai et al., 2013).

Specifically, regarding the instrumental dimension, in which, full mediation was found only in the adolescent-mother relationship model, a possible explanation might be that adolescents are generally closer and spend more time in direct interactions with mothers than with fathers (Hoeve et al., 2011; Tsai et al., 2013). Therefore, mothers typically have a greater involvement in these everyday aspects (i.e., messy, organized, hardworking and responsible) and, thus, in their interactions with their adolescent sons/daughters, are more likely to communicate appraisals regarding these characteristics (McKinney & Renk, 2008).

As for the emotional and opposition dimensions, in which full mediation was found only in the adolescent-father relationship model, this may be related with the fact that

adolescents typically perceive less support in their relationship with their father than in their relationship with their mother (e.g., Dailey, 2009; Hoeve et al., 2011; Van Horn & Marques, 2000). As such, appraisals regarding these dimensions of self-representations – which include attributes such as stubborn, grouchy, angry and sad – may be more frequently communicated and, therefore, more incorporated in fathers' reflected appraisals by the adolescents.

In addition to the specificity of significant others' influence, research on the process self-representations construction has also emphasized the importance of considering the dimensions under analysis, given that such influence might vary depending on the representation contents under analysis as well as on the specific others that are considered (e.g., Nurra & Pansu, 2009; Van der Cruijen et al., 2018). In the present study, although all self-representations dimensions evaluated were significantly predicted by both parents' actual appraisals and reflected appraisals, results showed that the instrumental dimension had the stronger effect of parents' actual appraisals on parents' reflected appraisals and on self-representations, for both adolescent-mother and adolescent-father relationship's models. This finding is in line with the literature emphasizing that significant others' influence on individuals' self-representation may be stronger in some dimensions than others (Bois et al., 2005; Branje et al., 2003; Pfeifer et al., 2009; Van der Cruijen et al., 2018), especially those including more observable characteristics (Bollich et al., 2011, Vazire, 2010; Vazire & Carlson, 2011; Wallace & Tice, 2012), such as the attributes composing the instrumental dimension (i.e., organized, messy, hardworking and responsible). Withal, the inclusion of other significant others from adolescents' social network in the test of the LGSH could emphasize other self-representations dimensions as more permeable to those significant others' influence (Nurra & Pansu, 2009). For example, based on the results of prior research (Pfeifer et al., 2009), it can be hypothesized that peers' influence could be stronger for the social self-representations, which includes attributes such as friendly, caring, nice and

helpful; and that parents' influence could be stronger in the instrumental dimension, which includes the attributes responsible, organized, hardworking and untidy would remain relevant, even after considering the influence of peers.

Despite the positive aspects of the study, at least two main limitations should be considered in the interpretation of the results. Most importantly, even though our findings are in line with our theoretical reasoning, the cross-sectional design of this study does not allow us to draw strong conclusions on the causal relationships implied in our hypothesis. Indeed, the direction of some of the hypothesized relationships could be debatable. Namely, the association between reflected appraisals and self-perception could have an opposite direction than the one proposed in the LGSH model, thus reflecting a projection effect (e.g., Nurra & Pansu, 2009). However, there are reasons to doubt that a projection effect would, on itself, explain these mediational pathways. First, the direction of effects proposed by the LGSH has been previously supported in longitudinal studies (e.g., Bellmore & Cillessen, 2007; Bois et al., 2005). Second, as also emphasized by Nurra and Pansu (2009), there would be no reason for the actual appraisals direct effect on adolescents' self-representations (i.e., the effect of actual appraisals, controlling for the effect of reflected appraisals) to be significantly lower than the total effect. Third, the alternative model, testing the reverse direction of effects, was not supported. Thus, consistent with findings from research on meta-accuracy (Carlson et al., 2011), despite the potential effect of adolescents' own self-views on their reflected appraisals, results of this study indicate that they also look into parents' feedback and perceive their actual appraisals with sufficient accuracy. Thus, even though these findings must be interpreted with caution, they provide important insights for future studies on the LGSH. Still, future research focused on testing the LGHS in the parent-adolescent relational context should include longitudinal design studies with autoregressive controls in order to provide a stronger empirical support of the theoretical assumption that parents' actual appraisals

influence adolescents' self-representations through parents' reflected appraisals.

Another shortcoming of this study worth mentioning is that only parents were included as significant others. However, adolescence is marked by an increase in individuals' social network and in peers' importance. With age, the agreement between individuals' self-representations and peers' appraisals of the individual increases (Renk & Phares, 2004). Furthermore, research about family's influence on children's self-representations has emphasized the role of siblings (Dailey, 2010). Therefore, future studies should consider other significant others in the analysis of the LGSH. Finally, although fathers' and mothers' specific influence was supported, inclusion of more significant others could add to the debate on the specific vs. generalized influence.

Notwithstanding these limitations, findings of this study have important practical implications. Specifically, the associations among parents' actual appraisals, adolescents' reflected appraisals, and self-representations point to the need of including parents and other close significant others as key agents in interventions aimed at enhancing adolescents' self-representations. Such interventions should also focus on increasing parents' awareness about the potential effects of the feedback they give their children regarding their characteristics. To that end, such interventions should also target parent-child communication so that parents can be better aware of how adolescents perceive, understand and accommodate their parents' feedback and behaviour in their self-construction process. Parents' stimulation of positive reflected appraisals and self-representations in their children should rely on clear feedback contingent on adolescents' behaviour. This way adolescents will be better able to relate their attributes to their actual skills and not be too dependent on external feedback. Regarding implications for future research, this study reinforces the importance of relying in close significant others to understand adolescents' self-representation construction process.

Acknowledgements

This research was supported by Portuguese Foundation for Science and Technology Doctoral Grant SFRH/BD/21507/2005, awarded to Ana Martins. We thank the schools for approving this study and especially all adolescents and participating int his work.

References

Arbuckle, J. L. (2017a). *Amos (Version 25.0)* [Computer Program]. Chicago: IBM SPSS.

Arbuckle, J. L. (2017b). *IBM SPSS Amos 25 User's Guide*. Chicago, IL: SPSS Inc. Development Corporation, SPSS Inc.

Barnett, M. A., Deng, M., Mills-Koonce, W. R., Willoughby, M., & Cox, M. (2008). Interdependence of parenting of mothers and fathers of infants. *Journal of Family Psychology, 22*, 561–573.

Becht, A. I., Nelemans, S. A., Branje, S. J. T., Vollebergh, W. A. M., Koot, H. M., Denissen, J. J. A., & Meeus, W. H. J. (2016). The quest for identity in adolescence: Heterogeneity in daily identity formation and psychosocial adjustment across 5 years. *Developmental Psychology, 52*(12), 2010–2021.

Bellmore, A. D., & Cillessen, A. H. N. (2006). Reciprocal influences of victimization perceived social preference, and self-concept in adolescence. *Self & Identity, 5*, 209–229.

Biesanz, J. C., West, S. G., & Millevoi, A. (2007). What do you learn about someone over time? The relationship between length of acquaintance and consensus and self-other agreement in judgments of personality. *Journal of Personality and Social Psychology, 92*(1), 119–135.

Bois. J. E, Sarrazin. P. G., Brustad, R. J., Chanal. J. P., & Trouilloud, D.O. (2005). Parents' appraisals, reflected appraisals, and children's self-appraisals of sport competence: A yearlong study. *Journal of Applied Sport Psychology, 7*, 273–289.

Bollich, K. L., Johannet, P. M., & Vazire, S. (2011). In search of our true selves: feedback as a path to self-knowledge. *Frontiers in Psychology, 2*, 312.

Branje, S. J. T., Van Aken, M. A. G. , Van Lieshout, C. F. M. , & Mathijssen, J. J. J. P. (2003). Personality judgments in adolescents' families: The perceiver, the target, their relationship, and the family. *Journal of Personality, 71*, 49–81.

Brewin, C. R., Andrews, B. & Furnham, A. (1996). Intergenerational links and positive self-cognitions: Parental correlates of optimism, learned resourcefulness, and self-evaluation. *Cognitive Therapy and Research, 20*, 247–263.

Carlson, E. N., & Furr, R. M. (2013). Resolution of meta-accuracy: Should people trust their beliefs about how others see them? *Social Psychological and Personality Science*, 4(4), 419–426.

Carlson, E. N., Furr, R. M., & Vazire, S. (2010). Do we know the first impressions we make? Evidence for idiographic meta-accuracy and calibration of first impressions. *Social Psychological and Personality Science, 1*(1), 94–98.

Carlson, E. N., Vazire, S., & Furr, R. M. (2011). Meta-insight: Do people really know how others see them? *Journal of Personality and Social Psychology, 101*(4), 831–846.

Chambers, J. R., Epley, N., Savitsky, K., & Windschitl, P. D. (2008). Knowing too much: Using private knowledge to predict how one is viewed by others. *Psychological Science, 19*(6), 542–548.

Cook, W. L. & Douglas, E. M. (1998). The looking-glass self in family context. A social relations analysis. *Journal of Family Psychology, 12* (3), 299–309.

Cooley, C. H. (1902). *Human Nature and social order* (1964 ed.). New York: Schribner's.

Dailey, R. M. (2009). Confirmation from family members: Parent and sibling contributions to adolescent psychosocial adjustment. *Western Journal of Communication, 73*(3), 273–299.

Dailey, R. M. (2010). Testing components of confirmation: How acceptance and challenge from mothers, fathers, and siblings are related to adolescent self-concept. *Communication Monographs, 77*(4), 592–617.

Fish, K., Rothermich, K., & Pell, M. D. (2017). The sound of (in) sincerity. *Journal of Pragmatics, 121*, 147–161.

Gallrein, A. M. B., Carlson, E. N., Holstein, M., & Leising, D. (2013). You spy with your little eye: People are "blind" to some of the ways in which they are consensually seen by others. *Journal of Research in Personality, 47*(5), 464–471.

Gniewosz, B., Eccles, J. S., & Noack, P. (2012). Secondary school transition and the use of different sources of information for the construction of the academic self-concept. *Social Development, 21*(3), 537–557.

Gniewosz, B., Eccles, J. S., & Noack, P. (2015). Early adolescents' development of academic self-concept and intrinsic task value: The role of contextual feedback. *Journal of Research on Adolescence, 25*(3), 459–473.

Hallers-Haalboom, E. T., Groeneveld, M. G., van Berkel, S. R., Endendijk, J. J., van der Pol, L. D., Linting, M., Bakermans-Kranenburg, M. J., & Mesman, J. (2017). Mothers' and fathers' sensitivity with their two children: A longitudinal study from infancy to early childhood. *Developmental Psychology, 53*(5), 860–872.

Hallers-Haalboom, E. T., Mesman, J., Groeneveld, M. G., Endendijk, J. J., van Berkel, S. R., van der Pol, L. D., & Bakermans-Kranenburg, M. J. (2014). Mothers, fathers, sons and daughters: Parental sensitivity in families with two children. *Journal of Family Psychology, 28*, 138–147.

Harter, S. (2015). *The construction of the self: Developmental and sociocultural foundations*. New York: Guilford Publications.

Hergovich, A., Sirsch, U., & Felinger, M. (2002). Sell-appraisals, actual appraisals and reflected appraisals of preadolescent children. *Social Behaviour and Personality, 30,* 603–612.

Hoeve, M., Dubas, J. S., Gerris, J. R. M., van der Laan, P. H., & Smeenk, W. (2011). Maternal and paternal parenting styles: Unique and combined links to adolescent and early adult delinquency. *Journal of Adolescence, 34*(5), 813–827.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55.

Huerta, M. C., Adema, W., Baxter, J., Han, W., Lausten, M., Lee, R., & Waldfogel, J. (2013). Fathers' leave, fathers' involvement and child development: Are they related? Evidence from four OECD countries. *OECD Social, Employment and Migration Working Papers, No. 140*. Paris, France: OECD Publishing.

Human, L. J., & Biesanz, J. C. (2011). Through the looking glass clearly: Accuracy and assumed similarity in well-adjusted individuals' first impressions. *Journal of Personality and Social Psychology, 100*(2), 349–364.

Ichiyama, M. A. (1993). The reflected appraisal process in small-group interaction. *Social Psychology Quarterly, 56*, 87–99.

Jackson, J. J., Connolly, J. J., Garrison, S. M., Leveille, M. M., & Connolly, S. L. (2015). Your friends know how long you will live: A 75-year study of peer-rated personality traits. *Psychological Science, 26*(3), 335–340.

Jankowski, K. F., Moore, W. E., Merchant, J. S., Kahn, L. E., & Pfeifer, J. H. (2014). But do you think I'm cool?: Developmental differences in striatal recruitment during direct and

reflected social self-evaluations. *Developmental Cognitive Neuroscience, 8,* 40–54.

Kenny, D. A. & DePaulo, B. M. (1993). Do people know how others view them? An empirical and theoretical account. *Psychological Bulletin, 114*, 145–161.

Kinch, J. W. (1963). A Formalized Theory of the Self-Concept. *American Journal of Sociology, 68*, 481–486.

Klimstra, T. A., Kuppens, P., Luyckx, K., Branje, S., Hale III, W. W., Oosterwegel, A., ... & Meeus, W. H. (2016). Daily dynamics of adolescent mood and identity. *Journal of Research on Adolescence, 26*(3), 459–473.

Kline, R. B. (2015). *Principles and practice of structural equation modeling* (4th Ed.). New York, NY: Guilford Press.

Martins, A. C. (2013). *Auto-representação na Adolescência: Avaliação e Processo de Construção*. Lisboa: ISCTE-IUL, 2013. Tese de doutoramento.

Martins, A., & Calheiros, M. M. (2012). Construction of a self-complexity scale for adolescents. *Psychological Assessment, 24*(4), 973–982.

McGrath, E. & Repetti, R. (2000). Mothers' and fathers' attitudes toward their children's academic performance and children's perceptions of their academic competence. *Journal of Youth and Adolescence*, *29*(6), 713–723. Mead, 1934

McGrath, E. P., & Repetti, R. L. (2000). Mothers' and fathers' attitudes toward their children's academic performance and children's perceptions of their academic competence. *Journal of Youth and Adolescence, 29*, 713–723.

McKinney, C., & Renk, K. (2008). Differential Parenting Between Mothers and Fathers Implications for Late Adolescents. *Journal of Family Issues, 29*(6), 806–827.

McLean, K.C. (2015). *The co-authored self: Family stories and the construction of personal identity*. New York, NY: Oxford University Press.

Mead, G. H. (1934). *Mind, self and society*. Chicago: University of Chicago Press.

Meeus, W. (2011). The study of adolescent identity formation 2000–2010: A review of longitudinal research. *Journal of research on adolescence, 21*(1), 75–94.

Murray, S. L., Holmes, J. G., & Griffin, D. W. (2000). Self-esteem and the quest for felt security: How perceived regard regulates attachment processes. *Journal of Personality and Social Psychology, 78*, 478–498.

Mustillo, S. A., Hendrix, K. L., & Schafer, M. H. (2012). Trajectories of body mass and self-concept in Black and White girls: The lingering effects of stigma. *Journal of Health and Social Behavior, 53*(1), 2–16.

Noels, K. A., Leavitt, P. A., & Clément, R. (2010). "To see ourselves as others see us": On the implications of reflected appraisals for ethnic identity and discrimination. *Journal of Social Issues, 66*(4), 740–758.

Nurra, C. & Pansu, P. (2009). The impact of significant others' actual appraisals on children's self-perceptions: What about Cooley's assumption for children? *European Joumal of Psychology of Education, 24*(2), 247–262.

Oosterwegel, A., & Oppenheimer, L. (2002). Jumping to awareness of conflict between self-representations and its relation to psychological wellbeing. *International Journal of Behavioral Development*, *26*(6), 548–555.

Oyserman, D. (2015) Identity-based motivation. In R. Scott & S. Kosslyn (Eds.) *Emerging Trends in the Social Sciences*. John Wiley & Sons.

Oyserman, D., & Markus, H. (1993). The sociocultural self. In J. Suls & A. G. Greenwald (Eds.), *Psychological perspectives on the self*, Vol. 4 (pp. 187–220). Hillsdale, NJ: Lawrence Erlbaum Associates.

Oyserman, D., Elmore, K., & Smith, G. (2012). Self, self-concept and identity. In M. Leary & J. Tangney (Eds). *Handbook of Self and Identity, 2nd Edition* (pp. 69-104). New York, NY: Guilford Press.

Paulus, M., Licata, M., Gniewosz, B., & Sodian, B. (2018). The impact of mother-child interaction quality and cognitive abilities on children's self-concept and self-esteem. *Cognitive Development, 48*, 42–51.

Pfeifer, J. H., & Berkman, E. T. (2018). The development of self and identity in adolescence: Neural evidence and implications for a value-based choice perspective on motivated behavior. *Child Development Perspectives, 12*(3), 158–164.

Pfeifer, J. H., & Peake, S. J. (2012). Self-development: Integrating cognitive, socioemotional, and neuroimaging perspectives. *Developmental Cognitive Neuroscience, 2*(1), 55–69.

Pfeifer, J. H., Kahn, L. E., Merchant, J. S., Peake, S. J., Veroude, K., Masten, C. L., ... & Dapretto, M. (2013). Longitudinal change in the neural bases of adolescent social self-evaluations: effects of age and pubertal development. *Journal of Neuroscience, 33*(17), 7415–7419.

Pfeifer, J. H., Masten, C. L., Borofsky, L. A., Dapretto, M., Fuligni, A. J., & Lieberman, M. D. (2009). Neural correlates of direct and reflected self-appraisals in adolescents and adults: When social perspective-taking informs self-perception. *Child Development, 80*(4), 1016–1038.

Phares, V., Fields, S., & Kamboukos, D. (2009). Fathers' and mothers' involvement with their adolescents. *Journal of Child and Family Studies, 18*(1), 1–9.

Phares, V., Fields, S., Kamboukos, D., & Lopez, E. (2005). Still Looking for Poppa. *American Psychologist, 60*(7), 735–736.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, *36*(4), 717–731.

Ray, R. D., Shelton, A. L., Hollon, N. G., Michel, B. D., Frankel, C. B., Gross, J. J., & Gabrieli, J. D. (2009). Cognitive and neural development of individuated self-representation in

children. *Child Development, 80*(4), 1232–1242.

Renk, K., & Phares, V. (*2004).* Cross-informant ratings of social competence in children and adolescents. *Clinical Psychology Review, 24*, 239–254

Sawyer, S. M., Azzopardi, P. S., Wickremarathne, D., & Patton, G. C. (2018). The age of adolescence. *The Lancet Child & Adolescent Health, 2*(3), 223–228.

Sedikides, C., & Gregg, A. P. (2008). Self-enhancement: Food for thought. Perspectives on *Psychological Science, 3*(2), 102–116.

Shrauger, J. S., & Schoeneman, T. J. (1979). Symbolic Interactionist view of the self-concept: Through the looking glass darkly. *Psychological Bulletin, 86*, 549–573.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: new procedures and recommendations. *Psychological methods*, *7*(4), 422–442.

Silva, C. S., Martins, A. C., & Calheiros, M. M. (2016). Development and psychometric properties of the Self-representation Questionnaire for Adolescents. *Journal of Child and Family Studies, 25*(9), 2718–2732.

Smetana, J. G., Robinson, J., & Rote, W. M. (2015). Socialization in adolescence. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of socialization: Theory and research* (p. 60–84). Guilford Press.

Steinberg, L. (2013). *Adolescence* (8th dition). New York: McGraw Hill.

Stets J.E., Savage S.V., Burke P.J., Fares P. (2020) Cognitive and Behavioral Responses to the Identity Verification Process. In Serpe R., Stryker R., Powell B. (Eds.), *Identity and Symbolic Interaction* (65–88). Springer, Cham.

Swann, W. B., Jr., & Bosson, J. (2010). Self and identity. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of Social Psychology* (5th ed., pp. 589–628). NY: McGraw-Hill.

Tsai, K. M., Telzer, E. H., & Fuligni, A. J. (2013). Continuity and discontinuity in perceptions

of family relationships from adolescence to young adulthood. *Child Development*, 84, 471–484.

Van der Cruijsen, R., Peters, S., Van der Aar, L. P. E., & Crone, E. A. (2018). The neural signature of self-concept development in adolescence: the role of domain and valence distinctions. *Developmental Cognitive Neuroscience, 30*, 1–12.

Van der Cruijsen, R., Peters, S., Zoetendaal, K. P., Pfeifer, J. H., & Crone, E. A. (2019). Direct and reflected self-concept show increasing similarity across adolescence: A functional neuroimaging study. *Neuropsychologia, 129*, 407–417.

van Doeselaar, L., Becht, A. I., Klimstra, T. A., & Meeus, W. H. J. (2018). A review and integration of three key components of identity development: Distinctiveness, coherence, and continuity. *European Psychologist, 23*(4), 278–288.

Van Horn, K. R., & Marques, J. C. (2000). Interpersonal relationships in Brazilian adolescents. *International Journal of Behavioural Development, 24*(2), 199–203.

Vazire, S. (2010). Who knows what about a person? The self–other knowledge asymmetry (SOKA) model. *Journal of Personality and Social Psychology, 98*(2), 281–300.

Vazire, S., & Carlson, E. N. (2010). Self-knowledge of personality: Do people know themselves? *Social and Personality Psychology Compass, 4*(8), 605–620.

Vazire, S., & Carlson, E. N. (2011). Others sometimes know us better than we know ourselves. *Current Directions in Psychological Science, 20*(2), 104–108.

Wallace, H. M., & Tice, D. M. (2012). Reflected appraisal through a 21st-century looking glass. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of self and identity* (2nd ed., 124–140). Guilford Press.

Xu, X., Chen, Y., Zhao, Y., & Yang, J. (2015). The neural evidence of the reflected appraisal process as a main path for learning about one's self-knowledge of personality. *Biological Ppsychology, 110*, 85–90.

Yeung, K. T., & Martin, J. L. (2003). The looking glass self: An empirical test and elaboration. *Social Forces, 81*(3), 843–879.

Zell, E., Strickhouser, J. E., Sedikides, C., & Alicke, M. D. (2020). The better-than-average effect in comparative self-evaluation: A comprehensive review and meta-analysis. *Psychological Bulletin, 146*(2), 118–149.

Table 1

Correlations among the model variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. I. SR	-----																			
2. S. SR	.293**	-----																		
3. E. SR	-.015	-.150*	-----																	
4. O. SR	-.201**	.096	.001	-----																
5. I. MRA	.800**	.261**	-.144*	-.189**	-----															
6. S. MRA	.319**	.639**	-.204**	-.057	.428**	-----														
7. E. MRA	-.128	-.340**	.580**	-.011	-.199**	-.359**	-----													
8. O. MRA	-.253**	.030	.040	.740**	-.282**	-.139	.029	-----												
9. I. MAA	.599**	.169*	-.036	-.132	.591**	.183*	-.105	-.206**	-----											
10. S. MAA	.158*	.375**	-.192**	-.118	.216**	.479**	-.227**	-.133	.269**	-----										
11. E. MAA	-.191**	-.232**	.378**	.023	-.257**	-.241**	.329**	.076	-.279**	-.264**	-----									
12. O. MAA	-.211**	-.052	.120	.439**	-.274**	-.173*	.090	.462**	-.261**	-.156*	.137	-----								
13. I. FRA	.750**	.286**	-.137	-.161*	.843**	.407**	-.179*	-.238**	.516**	.214**	-.240**	-.177*	-----							
14. S. FRA	.285**	.609**	-.227**	.083	.349**	.746**	-.292**	.011	.194**	.397**	-.241**	-.046	.446**	-----						
15. E. FRA	-.057	-.235**	.616**	-.035	-.132	-.219**	.724**	-.011	-.044	-.196**	.312**	.109	-.187**	-.286**	-----					
16. O. FRA	-.324**	-.035	-.041	.655**	-.371**	-.149*	.013	.856**	-.272**	-.117	.045	.464**	-.333**	.003	-.031	-----				
17. I. FAA	.459**	.054	-.099	-.084	.363**	.161*	-.140	-.171*	.621**	.190**	-.216**	-.157*	.435**	.186**	-.156*	-.203**	-----			
18. S. FAA	.122	.303**	-.103	-.057	.019	.411**	-.166*	-.039	.092	.424**	-.169*	.054	.125	.364**	-.211**	-.070	.276**	-----		
19. E. FAA	.012	-.124	.336**	-.059	-.062	-.110	.270**	.023	-.089	-.135	.418**	.053	-.108	-.115	.365**	.033	-.241**	-.242**	-----	
20. O. FAA	-.245**	-.047	.071	.394**	-.190**	-.186**	.024	.441**	-.182*	-.052	.089	.503**	-.188**	-.027	.078	.472**	-.230**	-.133	.130	-----
Mean	3.44	4.14	1.73	3.56	3.37	4.11	1.63	3.60	3.44	4.26	1.91	3.46	3.37	4.05	1.65	3.43	3.40	4.22	1.94	3.30
SD	.80	.46	.82	.97	.94	.68	.82	1.10	.85	.61	.99	1.00	.92	.67	.82	1.15	.78	.59	.94	1.02

Note: I = Instrumental; S = Social; E = Emotional; O = Opposition; SR = Self-representations; MRA = Mother's reflected appraisals; FRA = Father's reflected appraisal; MAA = Mother's actual appraisals; FAA = Father's actual appraisals. *$p < .05$ ** $p < .01$

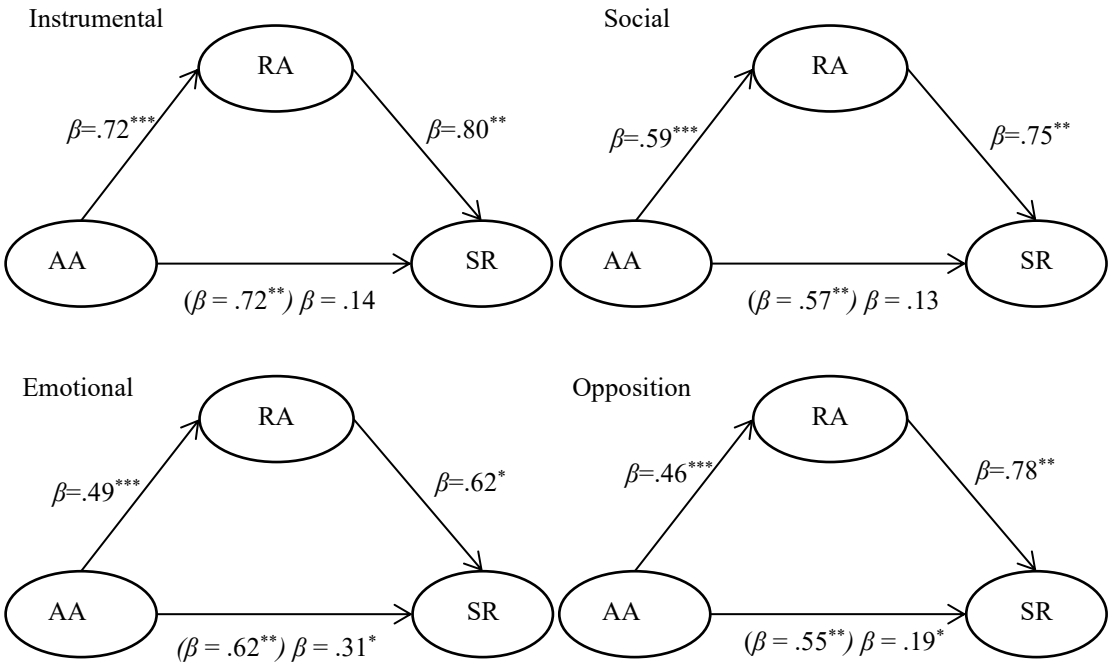

Figure 1. Model examining mothers' reflected appraisals as mediators on the association between mothers' actual appraisals and adolescents' self-representations. Beta coefficients in brackets refer to the total effect of mothers' actual appraisals on adolescents' self-representations. AA = Actual appraisals; RA = Reflected appraisals. $^{*}p < 0.05$ $^{**}p < 0.01$ $^{***}p < .001$

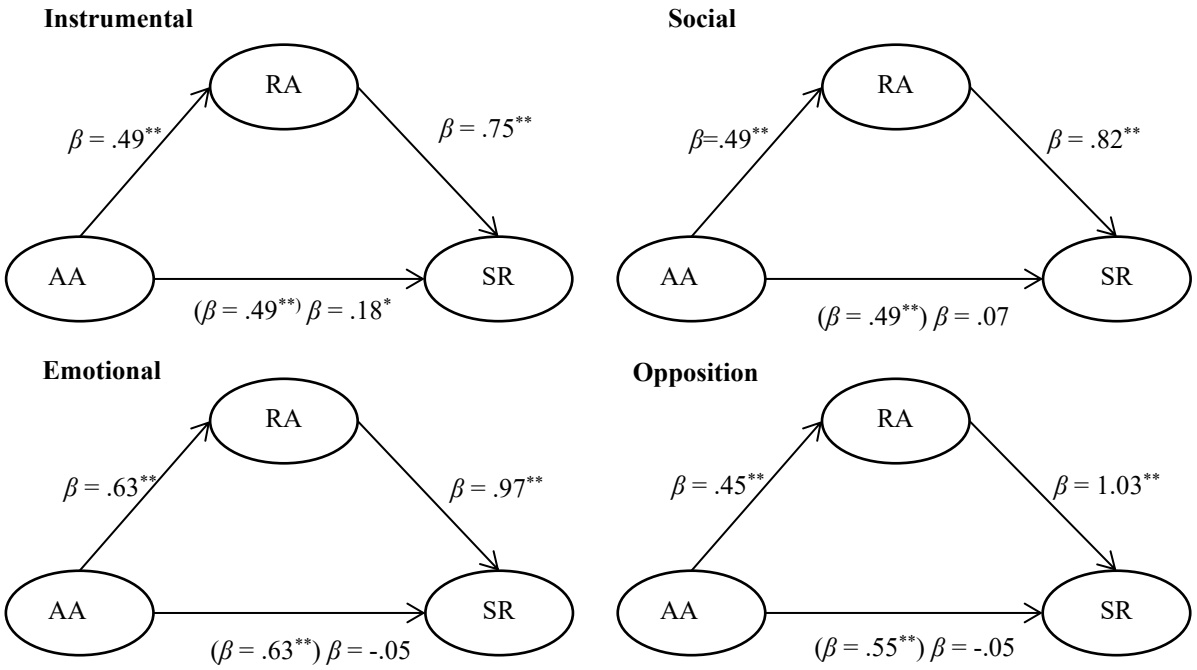

Figure 2. Model examining fathers' reflected appraisals as mediators of the association between fathers' actual appraisals and adolescents' self-representations. Beta coefficients in brackets refer to the total effect of fathers' actual appraisals on adolescents' self-representations. AA = Actual appraisals; RA = Reflected appraisals.
$^{*}p < 0.05$ $^{**}p < 0.01$ $^{***}p < .001$