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Developing Morality, Competence, and Sociability in Adolescence: A Longitudinal Study of Gender Differences

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Running Head: DEVELOPING MORALITY, COMPETENCE, AND SOCIABILITY

Developing Morality, Competence, and Sociability in Adolescence:

A Longitudinal Study of Gender Differences

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**Abstract**

Morality, competence, and sociability have been conceptualized as fundamental dimensions of social judgment that individuals use to evaluate themselves and other people and groups. The way in which adolescents perceive themselves along these dimensions affects the quality of their relationships across multiple social contexts. Given the centrality of morality, competence, and sociability for adolescents' social life, the purpose of this study was to understand how these dimensions develop over time with a focus on gender differences, since males and females can show distinct trajectories due to socialization and developmental processes. Participants were 916 (51.4% girls;  $M_{\text{age}} = 15.64$  years) adolescents involved in a three-wave longitudinal study with annual assessments. The findings highlighted that females reported increasing levels of morality and competence, while males showed decreasing levels in all dimensions. Furthermore, females also showed greater consistency in the configuration of morality, competence, and sociability, and inter-individual differences appeared to be already well-settled in each dimension for both males and females. Overall, this study increases the developmental understanding of how core dimensions of social judgment change in the adolescent phase, highlighting gender differences and similarities.

*Keywords:* morality, competence, sociability, gender, development

## Introduction

Morality, competence, and sociability have been conceptualized as fundamental dimensions of social judgment that individuals use to evaluate other people and groups (Leach, Ellemers, & Barreto, 2007) as well as themselves (Abele & Wojciszke, 2007). A growing corpus of evidence shows how these dimensions are at the basis of impression formation and influence actual social behavior (see Brambilla & Leach, 2014 for a review; Prati, Moscatelli, Van Lange, Van Doesum, & Rubini, 2018). Recently, it has also been shown that the way in which individuals perceive themselves along these dimensions affects the quality of their relationships across multiple social contexts (Crocetti, Moscatelli, Kaniūšonytė, Branje, Žukauskienė, & Rubini, 2018).

However, it is less known how morality, competence, and sociability develop over time in individuals. Adolescence is a key period in which to address this issue, as in this phase individuals undergo significant biological, cognitive, and social changes that prompt psychosocial development (for reviews see, Lerner & Steinberg, 2009; Meeus, 2016; Smetana, Campione-Barr, & Metzger, 2006). Furthermore, males and females can show distinct developmental trajectories due to socialization patterns (e.g., exposure to gender stereotypes) and developmental processes (e.g., differences in developmental timing) that can account for differences in how they perceive themselves in terms of morality, competence, and sociability. In line with these considerations, this longitudinal study was carried out in the light of the social psychological model on dimensions of social judgment (Leach et al., 2007) and with a novel developmental approach aimed at capturing how morality, competence, and sociability develop in male and female adolescents.

### **Morality, Competence, and Sociability as Core Dimensions of Social Judgment**

The social psychological literature has devoted considerable attention to the key dimensions along which individuals evaluate other people and groups (e.g., Moscatelli, Menegatti, Albarello, Pratto, & Rubini, 2019; Moscatelli & Rubini, 2011; Rubini, Moscatelli, Albarello, & Palmonari, 2007). According to the bi-dimensional model of social judgment (Abele & Wojciszke, 2007; Fiske, Cuddy, & Glick, 2007), individuals are motivated to evaluate other persons in terms of two main

aspects: *competence*, indicating the capability to pursue intents and goals, and *warmth*, which comprises traits related to friendliness, benevolence, and morality (Fiske et al., 2007). In the last decade, advances in theory have emphasized the importance of considering three, instead of two, dimensions of social judgment. This advance was prompted by the work of Leach et al. (2007), who demonstrated that in the warmth cluster a finer distinction should be made between morality on the one hand, and sociability on the other. *Morality*, as a means of evaluating individuals' intentions, is conceived as perceived correctness of social behavior, honesty, and trustworthiness; and *sociability* refers to the ability to have good relationships with others (Brambilla & Leach, 2014; Leach, Bilali, & Pagliaro, 2015). This implies that people can be moral without being sociable, and sociable without being moral.

In line with this finer distinction, convergent research has indicated that morality, competence, and sociability impact differently the evaluation of other people (cf. Brambilla & Leach, 2014). In fact, when individuals form an overall impression of a target person, they are more sensitive to information potentially revealing other people's morality rather than their competence or sociability (Brambilla, Sacchi, Menegatti, & Moscatelli, 2016; Goodwin, 2015; Goodwin, Piazza, & Rozin, 2014; Pagliaro, Ellemers, Barreto, & Di Cesare, 2016). Furthermore, trustworthiness is considered the most desirable characteristic for an ideal person to possess (Cottrell, Neuberg, & Li, 2007) and competent and sociable people are evaluated positively only when they are also moral (Landy, Piazza, & Goodwin, 2016). In this way, consistent evidence demonstrates the primacy of morality in perception of others.

Notably, morality, competence, and sociability are not only dimensions that individuals use to judge other people, but also core dimensions along which they evaluate themselves. Literature highlights that individuals tend to evaluate themselves as more moral, but not more competent, than others, a phenomenon also known as the Muhammad Ali effect (Allison, Messick, & Goethals, 1989; Van Lange & Sedikides, 1998). Moreover, they tend to overestimate their past moral behavior (e.g., donation, pro-social behavior), compared to others' behavior ("holier than thou";

Epley & Dunning, 2000). In addition, individuals are more sensitive to remarks regarding their morality than their competence (Rodriguez Mosquera, Manstead, & Fischer, 2002). Thus, extant research has considered how individuals evaluate themselves along the two dimensions of morality and competence (Abele & Wojciszke, 2007), while a more fine-grained analysis of how individuals perceive themselves using the distinction proposed by the three-dimensional model (i.e., morality, competence, and sociability; Leach et al., 2007) is currently lacking. More importantly, taking a developmental perspective allows to gain novel knowledge of how these dimensions change in adolescence.

### **Gender Differences in the Development of Morality, Competence, and Sociability**

Recently, it has been demonstrated that the extent to which adolescents perceive themselves as moral, sociable, and competent affects the quality of their relationships in various life domains (family, friends, and school contexts; Crocetti et al., 2018). More specifically, a primacy of morality, in terms of correctness of social behavior, honesty, and trustworthiness (Leach et al., 2007), has been documented. The more adolescents perceived themselves as highly moral, the more they reported strong family, friend, and school relationships over time. In addition, sociability also had positive effects, but they were limited to friendships, whereas competence did not lead to significant changes in relationships in any social context. Thus, if morality can be defined by multiple components (e.g., Graham, Nosek, Haidt, Iyer, Koleva, & Ditto, 2011; Lapsley & Carlo, 2014), taking a specific focus on its public dimension (Leach et al., 2007), captures an aspect that has a strong impact on adolescents' social interactions because trustworthiness and honesty have a fundamental role in establishing high-quality relationships across different contexts.

**Mean-level changes.** Adolescents' development can be captured by different patterns of mean-level changes of key psychosocial aspects (e.g., Bornstein, Putnick, & Esposito, 2017). These changes generally highlight adaptive pathways that can be qualified by adolescent maturation (for a review see Meeus, 2019). Notably, gender differences can account for variations in mean-level

changes of morality, competence, and sociability very likely because of gender stereotypes underlying socialization processes (Alfieri, Ruble, & Higgins, 1996; Cole et al., 2001; Kanka, Wagner, Buchmann, & Spiel, 2017). Research has shown that stereotypic representations of males and females become salient early in development (Bigler & Liben, 2007; Prentice & Carranza, 2002). Even preschool children might show personal endorsement of gender stereotypes (Weisgram, 2016), due to pervasive gender labeling as a meaningful category in their contexts (Bem, 1998; Liben & Bigler, 2017). Even though after age seven, children become more flexible in their endorsement of gender stereotypes (Martin & Ruble, 2004), these stereotypes continue to influence children and adolescents' behaviors and interests across academic, occupational, and leisure domains (Barth, Kim, Eno, & Guadagno, 2017; Boiché, Plaza, Chalabaev, Guillet-Descas, & Sarrazin, 2014; Jewell & Brown, 2013; Menegatti, Crocetti, & Rubini, 2017). Notably, research on gender identity has highlighted that self-perceived gender typicality is positively associated to psychological adjustment and peer acceptance in adolescence (Egan & Perry, 2001; Menon, 2011), especially when societal pressures to conform to gender norms are high (Smith & Leaper, 2006).

Overall, the consequences of gender stereotypes, whether considering adolescents or adults, at an explicit or implicit level, have been addressed in the light of the bidimensional model of warmth and competence (Cuddy, Fiske, & Glick, 2008). Accordingly, females are expected to behave in a nicer way than males, and males are expected to behave in a more competent way than females (Fiske, 1998). Adopting the three-dimensional model would allow to gain a more fine-grained understanding of how male and female adolescents develop along the three fundamental dimensions affecting social judgment (e.g., Brambilla & Leach, 2014) and human behaviors at large (e.g., Crocetti et al., 2018). Furthermore, evidence does not always confirm the competence hypothesis related to males' performance since adolescent females usually outperform males in school (for a meta-analysis see, Voyer & Voyer, 2014). In this vein, females might also report higher levels of competence than males.



**Rank-order stability.** Rank-order stability captures the extent to which inter-individual differences become stable over time (Bornstein et al., 2017). It is informative of whether the relative position of adolescents within a group of peers become increasingly fixed (Mroczek, 2007; Roberts & DelVecchio, 2000). For example, if Mary reports higher morality than Peter when they are 15 years old and this difference emerges also when they are 16 years old, this would speak of high rank-order stability. Extant literature indicates that rank-order stability increases in adolescence for multiple psychosocial aspects (Meeus, 2019), such as personality traits (Klimstra, Hale, Raaijmakers, Branje, & Meeus, 2009) and self-concept clarity (Crocetti, Rubini, Branje, Koot, & Meeus, 2016; Lodi-Smith & Crocetti, 2017).

Some evidence of gender differences in rank-order stability has been provided, suggesting that inter-individual differences are more stable in females than in males (Crocetti, Rubini et al., 2016; Klimstra et al., 2009). This might be due to differences in developmental timing. In fact, female adolescents reach physical and cognitive maturity about 1-2 years ahead of males (Beunen et al., 2000; Colom & Lynn, 2004; Giedd et al., 1999; Kroger, 1997; Meeus, van de Schoot, Keijsers, Schwartz, & Branje, 2010). This enables them to reflect on their own traits and characteristics at an earlier age. In this vein, females can achieve greater consistency in how they perceive themselves compared to others (Klimstra et al., 2009), although this difference is likely to disappear in late adolescence or emerging adulthood (Crocetti, Moscatelli, Van der Graaff, Rubini, Meeus, & Branje, 2016; Klimstra, Hale, Raaijmakers, Branje, & Meeus, 2010).

**Profile similarity.** Profile similarity (or profile stability; Roberts, Caspi, & Moffitt, 2001) can be considered as a person-centered index capturing intra-individual consistency in a cluster of psychological dimensions. For instance, if James at 15 years old scores the highest on morality, reports intermediate scores on competence, and lower scores on sociability and he shows the same intra-individual rank-order at the age of 16, this would be indicative of a consistent profile (i.e., high profile similarity). Prior studies generally indicated that profile similarity is increasingly high

over the course of adolescence. This result has been found in the field of identity (Klimstra et al., 2010) and personality (Klimstra et al., 2009) research. Gender differences in profile similarity can be observed (Crocetti, Klimstra, Hale, Koot, & Meeus, 2013; Klimstra et al., 2009). They can be driven by females' earlier developmental timing, which in turn allow them to achieve intra-individual stability earlier than boys.

### **Current Study**

In line with the reasoning above, the overall goal of this study was to understand how male and female adolescents develop morality, competence, and sociability. In order to address this issue comprehensively, multiple indices of change and stability (mean level changes, rank-order stability, and profile similarity; Bornstein et al., 2017; Meeus, 2019) were examined in a three-wave longitudinal study with annual assessments. Considering the influence of gender stereotypes in the adolescent experience (e.g., Cole et al., 2001; Egan & Perry, 2001), gender differences in mean-level changes of morality, competence, and sociability were hypothesized. Since females are expected to be warmer than males and warmth encompasses the distinct dimensions of morality and sociability (Leach et al., 2007), we predicted that females would report higher morality and sociability. In addition, although males are stereotypically represented as more competent than females (Fiske, 1998), and competence is strongly linked to academic performance in adolescence, an aspect on which females outperform males (Voyer & Voyer, 2014), we expected that females would report also higher competence than males. Taking into account differences in developmental timing (e.g., Kroger, 1997), according to which females reach pubertal and cognitive maturity earlier than males, levels of rank-order stability (in morality, competence, and sociability) and profile similarity of females were expected to be higher than those of males.

### **Method**

#### **Participants**

Data for this study were drawn from the longitudinal research project “Mechanisms of promoting positive youth development in the context of socio-economical transformations (POSIDEV)”. This project aims at examining individual (e.g., personal characteristics), family (e.g., relationships with parents), and school (e.g., school engagement) factors related to positive youth development (for more information see Žukauskienė et al., 2015). Participants for the current study were 916 (51.4% females) adolescents attending grades 9 and 10 from high schools located in Northeastern Lithuania. At baseline, the age of participants ranged from 14 to 17 ( $M_{age} = 15.64$ ,  $SD_{age} = 0.70$ ). The sample was diverse in terms of family and socio-economic backgrounds. Most participants lived with two parents (68.5%); the remaining participants had a range of other family situations owing to parental divorce (18.4%), loss (4.7%), and migration (4.1%). Regarding the socio-economic status, 26% received state economic support (free nutrition at school), and in 20.8% of cases at least one of the parents was jobless. The sample was homogeneous in terms of ethnic background (i.e., absolute majority of the participants were Lithuanian and 0.76% were of different ethnic background).

Participants provided information for three waves, with one-year intervals between each wave. Of the original sample, 871 (response rate 95.09%) and 784 (response rate 85.59%) adolescents participated at T2 and T3 data collections. Results of Little’s (1988) Missing Completely at Random (MCAR) test yielded a  $\chi^2/df$  value of 1.63. Therefore, all 916 participants could be included in the analyses conducted by means of the Full Information Maximum Likelihood procedure available in *Mplus*.

## **Procedure**

This study was based on a community sampling approach: All high schools in Utena district municipality (Northeastern Lithuania) were selected for participation in the POSIDEV project. This municipality is representative of a typical Lithuanian small city. The study protocols were approved by the ethical committee of the Department of Psychology of the Mykolas Romeris University,

Vilnius, Lithuania. During the introductory meeting the adolescents were informed about the purpose of the study and that participation was voluntary. The parents were informed about the study through a written letter and asked to contact the school or the investigators if they did not want their children to participate.

The three assessments (T1, T2, and T3) took place in February-May 2013, 2014, and 2015 respectively. Before each wave, school administration and prospective participants were informed about the date and time of the assessment. Researchers and several trained research assistants administered the questionnaires at the schools during regular class hours. The students who were absent on the day of data collection were contacted the following week by the research assistants to arrange for the completion of the questionnaires. The adolescents were not paid for participation, but all students who completed the questionnaires were eligible for a lottery reward (i.e., they could receive one of these alternative prizes: USB flash drive, issue of popular “Psychology” journal, paper notebook, etc.).

## Measures

**Morality.** Adolescents rated the extent to which they perceive themselves to be moral by filling a subscale of the Self-Perception Profile for Adolescence (SPPA; Harter, 1988; for information about validity of the Lithuanian version see Crocetti et al., 2018). Five items were used to assess adolescents’ correctness of behavior: “I usually do the right thing”, “I often get in trouble for the things I do” (recoded), “I feel really good about the way I act”, “I do things I know I shouldn’t do” (recoded), and “I usually act the way I know I am supposed to”. Items were scored on a 4-point scale, ranging from 1 (not true for me at all) to 4 (very true for me). In this study, Cronbach's alphas were .65, .61, and .67 at T1, T2, and T3, respectively.

**Competence.** Adolescents’ self-reported levels of competence were measured with a further subscale of the SPPA (Harter, 1988). Participants filled the following five items on a 4-point scale, ranging from 1 (not true for me at all) to 4 (very true for me): “I feel that I am just as smart as others

my age”, “I am pretty slow in finishing my school work” (recoded), “I do very well at my class work”, “I have trouble figuring out the answers in school” (recoded), “I feel that I am pretty intelligent”. In this study, Cronbach's alphas were .72, .71, and .73 at T1, T2, and T3, respectively.

**Sociability.** Also for measuring sociability, a subscale of the SPPA (Harter, 1988) was used. Respondents filled these five items on a 4-point scale, from 1 (not true for me at all) to 4 (very true for me): “I find it hard to make friends” (recoded), “I have a lot of friends”, “I am very hard to like” (recoded), “I am popular among my peers”, “I feel that I am socially accepted”. In this study, Cronbach's alphas were .76, .73, and .73 at T1, T2, and T3, respectively.

## Results

### Preliminary Results

Descriptive statistics of the study variables are reported in Table 1. Bivariate correlations within each wave of data collection are displayed in Table 2. As can be seen, morality, competence, and sociability were significantly and positively interrelated.

### Mean Level Changes

The first purpose of this study was to examine *mean-level changes* in morality, competence, and sociability<sup>1</sup>. To reach this aim, a Multivariate Latent Growth Curve (LGC) analysis (Duncan, Duncan, & Strycker, 2006; Preacher, 2010) was performed to estimate multiple attributes of change (i.e., intercept and linear slope) for each dimension and to examine their reciprocal interplay. Specifically, the means of intercepts and slopes capture average developmental trajectories reported by a group of informants, whereas the variances of intercepts and slopes indicate inter-individual

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<sup>1</sup> As a preliminary step, longitudinal measurement invariance (Little, 2013; Van de Schoot, Lugtig, & Hox, 2012) was tested. Thus, for each dimension the configural (baseline), metric (in which factor loadings were constrained to be equal across time), and scalar (in which both factor loadings and item intercepts were constrained to be equal across time) models were compared. Model comparisons were conducted considering changes in fit indices (e.g., Chen, 2007). Findings indicated the establishment of the three levels of longitudinal measurement invariance for all study constructs.

differences in the levels and rates of change. Correlations between intercepts and between slopes estimate associations between latent growth factors.

Analyses were conducted in *Mplus* 7.8 (Muthén & Muthén, 1998-2016), by means of the Maximum Likelihood Robust (MLR) estimator (Satorra & Bentler, 2001). The model fit was tested relying on multiple indices (Byrne, 2012): the Tucker-Lewis Index (TLI) and the Comparative Fit Index (CFI), with values higher than .90 indicative of an acceptable fit and values higher than .95 revealing an excellent fit; and the Root Mean Square Error of Approximation (RMSEA), with values below .08 indicative of an acceptable fit and values less than .05 representing a good fit.

The model fit the data well in the total sample,  $\chi^2 = 88.600$ ,  $df = 18$ ,  $CFI = .972$ ,  $TLI = .943$ ,  $RMSEA = .066$  [.052, .080]. A multi-group approach was used to model intercepts and slopes separately for males and females and differences were tested for significance by means of the Wald test. Also this model fit the data well,  $\chi^2 = 105.439$ ,  $df = 36$ ,  $CFI = .972$ ,  $TLI = .944$ ,  $RMSEA = .065$  [.051, .080].

Intercepts and slopes for the total sample and for males and females separately are reported in Table 3 and estimated means are displayed in Figures 1-3. As can be seen, in the total sample morality was found to be stable over time. However, this stability masked a clear gender difference, in both the intercept and the slope. In fact, females reported a significantly higher level of morality than males and this difference became even more pronounced over time since females' scores increased (albeit not significantly,  $p = .087$ ), whereas males' scores decreased significantly. Similarly, competence was found to be stable in the total sample, but also in this case there was a gender difference. In fact, although the initial levels of competence were comparable, their rate of change was significantly different: competence decreased significantly for males whereas it increased significantly for females. Finally, sociability was found to decrease significantly in the total sample. Although this decrease was more pronounced for males (i.e., it was statistically significant) than for females (it was not statistically significant), this overall difference did not reach

statistical significance ( $p = .092$ ). Thus, for sociability the developmental trajectory was found to be comparable for males and females, whereas development of morality and competence differed significantly across gender groups.

Within each gender group, differences between intercepts and slopes were then tested. As indicated with subscripts reported in Table 3 within columns, for females the intercepts of morality and sociability were comparable and significantly higher than the intercept of competence. In addition to this, females' positive slopes of morality and competence were significantly different from the negative slope of sociability. For males, the intercept of sociability was significantly higher than the intercepts of competence and morality (which did not differ from each other), and no significant differences in the negative slopes were found. Taken together, these results suggest that for females, morality became the dimension on which they scored the highest, whereas for males it was sociability<sup>2</sup>.

Finally, correlations between growth factors were examined in the total sample and for males and females separately. In this case, no significant gender differences were found. As indicated in Table 4, significant positive associations among all intercepts and slopes were detected, suggesting that morality, competence, and sociability were developmentally related. This result was very robust and consistent for males and females.

### **Rank-Order Stability**

The second purpose of this study was to examine whether the rank-order of adolescents on morality, competence, and sociability was maintained over time. To this end, rank-order stability was evaluated by performing in SPSS Pearson's test-retest correlations (e.g., correlation between morality at Time 1 and morality at Time 2). Coefficients about or higher .60 can be interpreted as

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<sup>2</sup> A further confirmation of this can be obtained by rank ordering at each wave observed scores of morality, competence, and sociability for males and females separately. For males the first dimension was, at each wave, sociability; whereas for females it was morality.

indicating a high degree of stability (e.g., Mroczek, 2007). Findings, reported in the first part of Table 5, indicated that one-year rank-order stability was high for each dimension.

To test gender differences in rank-order stability, correlation coefficients were transformed into  $z$ -scores using Fisher  $r$ -to- $z$  transformations, and then these  $z$ -scores were compared for statistical significance ( $p < .05$ ). Results indicated that, with only one exception (T2-T3 stability in competence was significantly higher for females), rank-order stability was similar for males and females. Furthermore, rank-order stability values increased over time for sociability ( $p < .05$ ), while they remained stable for morality and competence.

### **Profile Similarity**

Finally, profile similarity was analyzed. For each individual a  $q$ -correlation (e.g., Block, 1971) was computed, by correlating a rank-ordered set of dimensions at one measurement occasion (e.g., T1) with a rank-ordered set of the same dimensions at the subsequent measurement occasion (e.g., T2). The higher the  $q$ -correlation, the more stable a configuration of dimensions within a person is (e.g., Roberts et al., 2001). Findings, reported in the second part of Table 5, indicated that profile similarity was moderately high and that the T2-T3 score was significantly higher for females than it was for males. Thus, over time females' intra-individual configuration of self-reported morality, competence, and sociability became more organized than that of males.

### **Discussion**

Morality, competence, and sociability are fundamental dimensions on which individuals base their evaluation of themselves, of other people, and groups (e.g., Brambilla & Leach, 2014). While prior research highlighted that these dimensions, especially morality, have main implications for enhancing development of adolescents' nurturing relationships across family, peers, and school contexts (Crocetti et al., 2018), it remained less understood how they develop in adolescence. This



longitudinal study addressed this gap, by providing novel insights on gender differences and similarities in the adolescent development of morality, competence, and sociability.

First, mean level changes highlighted that females reported higher morality than males and this difference became stronger over time, since females increased in morality and males decreased. Furthermore, females and males showed similar initial levels of competence but different trajectories: females showed increasing levels of competence and males decreasing ones. In addition, development of sociability in males and females was similar. Second, rank-order stability was found to be high and similar for males and females, suggesting that inter-individual differences in morality, competence, and sociability are already established in adolescence. Finally, profile similarity was initially similar in males and females but became greater in females over time, highlighting that the intra-individual configuration of morality, competence, and sociability within each person is more stable for females than for males. Overall, this evidence provides a comprehensive understanding of how morality, competence, and sociability develop in males and females, as further discussed below.

### **Developmental Trajectories: When Females and Males Take Different Roads**

Pronounced gender differences were found in the development of morality. Females reported higher morality than males and this difference widened over the three years of investigation, as females and males showed opposite trends, with females increasing and males decreasing in morality. These findings also provide evidence that complements extant research on adolescent development of empathy, another important component of morality. In adolescence females exhibit higher empathy than males and this difference tends to be particularly accentuated in middle adolescence (Van der Graaff, Branje, De Wied, Hawk, Van Lier, & Meeus, 2014). Additionally, the present findings are consistent with gender differences in prosocial behaviors, with females exhibiting more unselfish behavior than males (e.g., Van der Graaff, Carlo, Crocetti,

Koot, & Branje, 2018). Overall, these studies show convergent evidence by highlighting that the developmental trajectory of morality for female adolescents is consistent across related aspects.

With respect to competence, males and females did not differ initially, but over time females reported greater competence than males. Whereas males are usually expected to be more competent than females (Eagly, 1987; Fiske, 1998), this evidence might imply that females try to acquire competence skills as much as their male teenagers as a means to fill the gender gap on this important dimension. Furthermore, these findings are in line with the consideration that perceptions of competence might be rooted in domains that vary according to the development period that is examined. In adolescence being competent is strongly defined by academic achievement, an aspect on which females usually have better performances than males (e.g., Pop, Negru-Subtirica, Crocetti, Opre, & Meeus, 2016). In contrast, in adulthood competence becomes more strongly tied to job careers (e.g., promotion to highly ranked job positions), that are usually more favorable for males.

As far as sociability is concerned, in the present research males and females reported comparable initial levels of sociability, which decreased over time for both groups. The decrease in perceived sociability may be due to the doubts that adolescents frequently experience about their social skills and the possibility of establishing sincere friendships with their peers (Maes, Vanhalst, Spithoven, Van den Noortgate, & Goossens, 2016). In this respect, it should also be noted that the more adolescents intensify their interactions across multiple contexts, the more they become aware of the complexity and difficulty in re-negotiating their existing relationships (e.g., to develop more symmetrical relationships with their parents; De Goede, Branje, & Meeus, 2009) or establishing and maintaining new stable relationships (e.g., romantic relationships; Rogers, Ha, Updegraff, & Iida, 2018).

Notably, differently from what expected, the current study highlights that female developmental trajectories of morality and sociability varied significantly; during the three-year study morality increased whereas sociability decreased. This difference provides supporting

evidence to the importance of distinguishing morality and sociability, as two non-overlapping constructs, pointing to the heuristic value of the three-dimensional model proposed by Leach and collaborators (Leach et al., 2007; Leach, Carraro, Garcia, & Kang, 2017).

Considering initial levels and changes in all dimensions simultaneously, the dimension on which females scored the highest was morality, while for males it was sociability. In fact, at the beginning of the study females' scores of morality and sociability were both significantly higher than those of competence. However, as they grew up, they showed increased morality and decreased sociability. As a result, morality became the dimension on which females scored the highest. Males, on the other hand, at the beginning of the study scored higher on sociability than on competence and morality, and during the study, they showed a linear decrease in all dimensions. This evidence further advances the theoretical understanding of the different roles of morality and sociability. Theoretically, both morality and sociability are important for strengthening interpersonal and group relationships (Abele & Wojciszke, 2007, 2014), since individuals are motivated to understand whether others have good intentions and are friendly, kind, and nice (Fiske et al., 2007; Ybarra, Chan, & Park, 2001). However, it seems that females consider morality very important in their development, whereas males seem to rely more on sociability.

Notably, although sociability appears important for males, it declines significantly over time, similarly to what happens to self-reported levels of morality and competence. This might indicate that males become increasingly critical of the all set of their traits. The transition from middle to high school, as well as the pubertal development, might trigger in-depth self-reflection. Thus, while males may have a tendency to inflate their self-perception in childhood, they can become more critical about themselves in adolescence (Crocetti, Rubini et al., 2016; Van Dongen-Melman, Koot, & Verhulst, 1993).

### **Inter-Individual Differences in Morality, Competence, and Sociability**

In this study, rank-order stability was high and comparable across dimensions (Mroczek, 2007). Differently from what hypothesized, results were similar for males and females, with only one exception (females had higher T2-T3 rank-order stability in competence than males). Overall, this evidence informs about the maintenance of individual differences in morality, competence, and sociability over time. This result can be interpreted in the broader context of adolescent development, by considering that rank-order stability indices of this study were comparable to those observed in other domains of adolescent development (for a review see Meeus, 2019), such as development of personality (see Roberts & DelVecchio, 2000 for a meta-analysis), self-concept clarity (Crocetti, Rubini et al., 2016), and identity (Meeus, 2011).

### **Stability in Intra-Individual Configurations of Morality, Competence, and Sociability**

Results regarding profile similarity indicated that the stability of a person's configuration of morality, competence, and sociability was moderate-to-high. It is worth noting that these indices were generally lower than those found for personality (Klimstra et al., 2009) and identity (Meeus, 2011) dimensions. In addition to this, and partly confirming our hypothesis, gender differences were not found initially (i.e., in T1-T2 values) but emerged over time (i.e., they were found in T2-T3 profile similarity). These results underscore that when females grow older, they show greater intra-individual maturation than males.

### **Practical Implications**

Overall, results of this study bring good and bad news for females. The good news is that females show increasing levels of both morality and competence. In this way, they become well-equipped to face upcoming developmental tasks related to the transition to young adulthood. In fact, changes in self-reported morality and competence, with females increasing in both dimensions and males decreasing, might have important implications for later development and goal achievement. There is some evidence regarding job hiring and retention decisions suggesting that, for male candidates, competence ratings dominate decisions made, whereas women are expected to show

competence *as well as* morality (Moscatelli, Menegatti, Ellemers, Mariani, & Rubini, 2018; Prati, Menegatti et al., 2018). This means that women need to achieve higher standards to be hired compared to men. Thus, females' increase in both morality and competence can be an adaptive way to cope with future barriers in the job context.

The bad news is that the females' developmental trajectories may show that they are aware of existing gender stereotypes (e.g., Barth et al., 2017; Jewell, & Brown, 2013) and conform to societal expectations and pressure. It has been demonstrated that whereas gender typicality (e.g., the extent to which individuals' perceptions are considered typical for the own gender) is positively correlated with adjustment (e.g., self-esteem), feeling pressures to conform to gender norms (e.g., feeling pressures from peers and/or parents) and non-accepting them have negative implications for adjustment (Egan & Perry, 2001; Smith & Leaper, 2005). Since findings showed significant variance in initial levels of all dimensions, it would be interesting to identify a subgroup of females who shows a less favorable profile and who might be worth of attention, given the burden that low gender typicality brings to adjustment. Notably, challenging social stereotypes has been proved to have both social benefits, such as increased tolerance, as well as individual benefits, by enhancing cognitive flexibility (Prati, Vasiljevic, Crisp, & Rubini, 2015).

### **Strengths, Limitations, and Suggestions for Future Research**

This study should be considered in light of both its strengths and its limitations, with the latter pointing to directions for future research. From a theoretical point of view, a main strength of this study was its cross-fertilization approach, by means of which it was possible to enhance the developmental understanding of how the dimensions of social judgment encompassed in the social psychological model proposed by Leach et al. (2007) change in the period of adolescence. In this respect, it is worth noting that, in line with Leach's model, morality was defined as correctness of social behavior, honesty, and trustworthiness. Notwithstanding the centrality of these aspects for inferring individuals' good or harmful intentions, other components of morality, such as issues

regarding justice, welfare, and rights, which are the focus of attention in the social domain theory (Smetana, 2013), could be addressed in further research.

From a methodological perspective, strengths of this study include the longitudinal design, which allowed examination of how morality, competence, and sociability change in the adolescent phase, and the large sample size, involving a representative group of high school students from Northeastern Lithuania (all schools in the region were sampled). However, this three-wave design did not permit to test non-linear developmental patterns nor monitoring how these dimensions change in the transition from adolescence to adulthood, and the results cannot be generalized to other contexts. Therefore, future studies with more waves of data collection, covering a longer developmental period, and involving representative samples from different nations, are needed. These studies could reveal potential non-linear trends, uncover whether the gender differences documented in the current study continue to be present in late adolescence and in the transition to young adulthood, and examine the replicability of current results across different cultural groups.

### **Conclusion**

Previous research clearly showed that morality, competence, and sociability affect social judgment (Brambilla & Leach, 2014) and influence the quality of young people's relationships with their main social contexts (family, peers, and school; Crocetti et al., 2018), however it paid less attention to understanding how these dimensions develop in adolescence. The current longitudinal study addressed this gap, by providing novel insights into adolescent development of morality, competence, and sociability. It highlighted that whereas females increased in morality and competence, males showed another trajectory of development, with decreasing levels in all dimensions. Furthermore, females also showed greater consistency in the configuration of morality, competence, and sociability, with morality being the most important. Finally, inter-individual differences already appeared to be well-settled in each dimension and this result was similar for both males and females. Taken together, this evidence furthers existing knowledge considerably,

showing how core dimensions of social judgment that have relevant implications for adolescents' social interactions develop in males and females.

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Table 1

*Observed Means (M) and Standard Deviations (SD) for all Study Variables at Each Time Point (T)*

|                    | T1       |           | T2       |           | T3       |           |
|--------------------|----------|-----------|----------|-----------|----------|-----------|
|                    | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> |
| <b>Morality</b>    |          |           |          |           |          |           |
| Males              | 2.86     | 0.48      | 2.86     | 0.45      | 2.79     | 0.47      |
| Females            | 2.97     | 0.49      | 2.98     | 0.46      | 3.04     | 0.47      |
| Total              | 2.92     | 0.49      | 2.92     | 0.46      | 2.93     | 0.49      |
| <b>Competence</b>  |          |           |          |           |          |           |
| Males              | 2.88     | 0.50      | 2.89     | 0.50      | 2.84     | 0.50      |
| Females            | 2.84     | 0.52      | 2.94     | 0.51      | 2.94     | 0.51      |
| Total              | 2.86     | 0.51      | 2.92     | 0.51      | 2.89     | 0.51      |
| <b>Sociability</b> |          |           |          |           |          |           |
| Males              | 2.96     | 0.57      | 2.91     | 0.55      | 2.88     | 0.53      |
| Females            | 2.93     | 0.56      | 2.92     | 0.55      | 2.90     | 0.56      |
| Total              | 2.94     | 0.56      | 2.91     | 0.55      | 2.89     | 0.55      |

Table 2

*Bivariate Correlations among Study Variables Within Each Time Point (T) (for Males/Females/Total)*

|             | T1                   |                      | T2                   |                      | T3                   |                      |
|-------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|             | Competence           | Sociability          | Competence           | Sociability          | Competence           | Sociability          |
| Morality    | .38***/.38***/.37*** | .22***/.14**/.17***  | .42***/.47***/.45*** | .30***/.23***/.26*** | .43***/.47***/.46*** | .30***/.30***/.29*** |
| Competence  | 1                    | .34***/.30***/.32*** | 1                    | .41***/.40***/.40*** | 1                    | .44***/.40***/.42*** |
| Sociability |                      | 1                    |                      | 1                    |                      | 1                    |

*Note.* \*\*  $p < .01$ , \*\*\*  $p < .001$ .

Table 3

*Multivariate Latent Growth Curve Analyses: Means (M) and Variance ( $\sigma^2$ ) of the Growth Factors (Intercepts and Slopes)*

|                    | Intercept (I)              |            | Slope (S)                 |            |
|--------------------|----------------------------|------------|---------------------------|------------|
|                    | <i>M</i>                   | $\sigma^2$ | <i>M</i>                  | $\sigma^2$ |
| <b>Morality</b>    |                            |            |                           |            |
| Males              | <b>2.86<sub>b</sub>***</b> | 0.12***    | <b>-0.03<sub>x</sub>*</b> | 0.01       |
| Females            | <b>2.97<sub>a</sub>***</b> | 0.13***    | <b>0.02<sub>y</sub></b>   | 0.01       |
| Total              | 2.92***                    | 0.13***    | -0.01                     | 0.01       |
| <b>Competence</b>  |                            |            |                           |            |
| Males              | 2.89 <sub>b</sub> ***      | 0.16***    | <b>-0.04<sub>x</sub>*</b> | 0.02       |
| Females            | 2.86 <sub>b</sub> ***      | 0.16***    | <b>0.04<sub>y</sub>**</b> | 0.01       |
| Total              | 2.88***                    | 0.16***    | 0.00                      | 0.01*      |
| <b>Sociability</b> |                            |            |                           |            |
| Males              | 2.96 <sub>a</sub> ***      | 0.20***    | -0.05 <sub>x</sub> **     | 0.02       |
| Females            | 2.93 <sub>a</sub> ***      | 0.20***    | -0.02 <sub>x</sub>        | 0.01       |
| Total              | 2.94***                    | 0.20***    | -0.03***                  | 0.02*      |

*Note.* Values in bold are significantly different ( $p < .05$ ) for males and females at the Wald test.

Within columns, different subscripts indicate significant differences ( $p < .05$ ) between intercepts and between slopes calculated within each gender group.

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

Table 4

*Correlations among Latent Growth Factors (for Males/Females/Total)*

|                | Correlations between intercepts |                      |  | Correlations between slopes |                      |  |
|----------------|---------------------------------|----------------------|--|-----------------------------|----------------------|--|
|                | 2                               | 3                    |  | 2                           | 3                    |  |
| 1. Morality    | .09***/.10***/.09***            | .06***/.04***/.05*** |  | .02***/.01***/.02***        | .02***/.01***/.02*** |  |
| 2. Competence  | -                               | .10***/.09***/.09*** |  | -                           | .02***/.01***/.02*** |  |
| 3. Sociability |                                 | -                    |  |                             | -                    |  |

*Note.* None of the reported values were statistically significant between males and females at the

Wald test.

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

Table 5

*Rank-Order Stability and Profile Similarity*

| <b>Rank-order stability</b> | T1-T2 | T2-T3      |
|-----------------------------|-------|------------|
| <b>Morality</b>             |       |            |
| Males                       | .55   | .57        |
| Females                     | .59   | .64        |
| Total                       | .57   | .62        |
| <b>Competence</b>           |       |            |
| Males                       | .57   | <b>.55</b> |
| Females                     | .64   | <b>.72</b> |
| Total                       | .60   | .65        |
| <b>Sociability</b>          |       |            |
| Males                       | .56   | .64        |
| Females                     | .63   | .68        |
| Total                       | .60   | .67        |
| <b>Profile similarity</b>   |       |            |
| Males                       | .36   | <b>.35</b> |
| Females                     | .43   | <b>.47</b> |
| Total                       | .40   | .42        |

*Note.* T = time point. Values in bold are significantly different ( $p < .05$ ) for males and females.

All correlations were significant at  $p < .001$ .

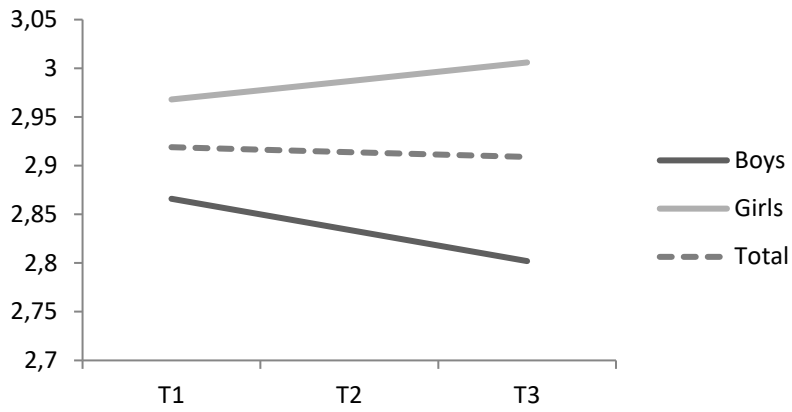


Figure 1. Estimated Growth of Morality

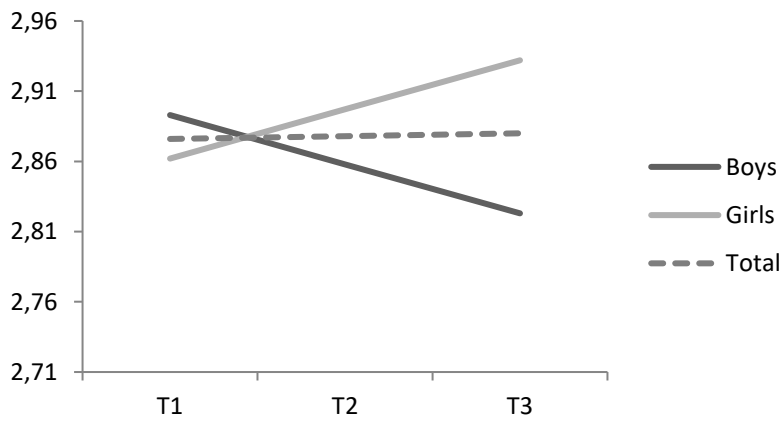


Figure 2. Estimated Growth of Competence

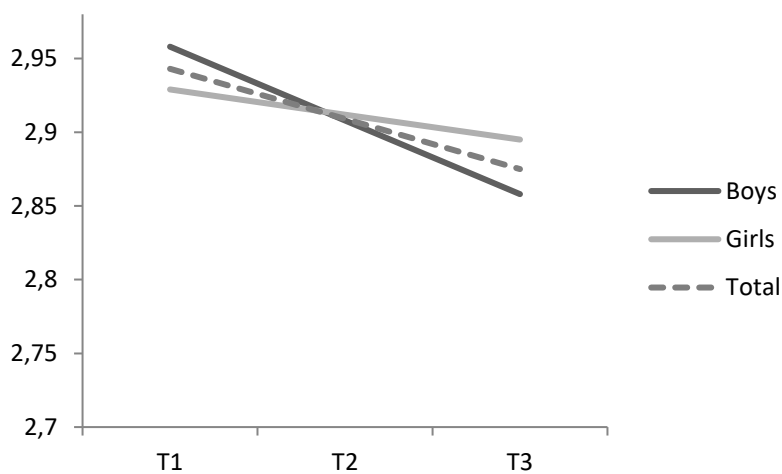


Figure 3. Estimated Growth of Sociability