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MOTHERS, FATHERS AND THE INTERGENERATIONAL TRANSMISSION OF GENDER-ROLE ATTITUDES

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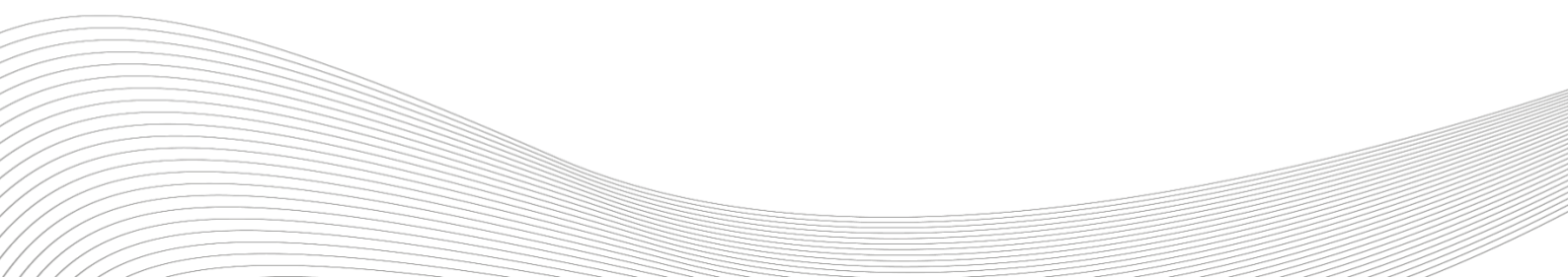


NON-TECHNICAL SUMMARY

Traditional gender beliefs play an important role in (re-)producing gender inequalities, and trends towards gender egalitarianism have stalled. As such, identifying factors that contribute to individuals upholding traditional versus egalitarian gender-role attitudes is an important scholarly endeavour. While previous studies have identified critical predictors—such as religion, education and parenthood—intergenerational influences have received little empirical attention. Drawing upon gender-socialization theory, we derive hypotheses about how parental attitudes towards gender roles are transmitted to their children, considering differences between mothers' and fathers' influences, parental (dis)agreement in attitudes, and moderation by child's gender. We then test these hypotheses using unique, high-quality data from a national sample of Australian 14/15-year-old adolescents (Growing Up in Australia: The Longitudinal Study of Australian Children).

We find substantial intergenerational correlations in gender-role attitudes: parents who espouse comparatively traditional (egalitarian) gender-role attitudes have children who also espouse comparatively traditional (egalitarian) gender-role attitudes. Paternal and maternal attitudes exert a similar degree of influence on their children's attitudes, and have complementary rather than cumulative effects. When one parent held gender-egalitarian attitudes (regardless of that parent's gender), the influence of the other parent's attitudes on the child diminished. In other words, egalitarianism seems to trump traditionalism when there is parental disagreement in gender-role attitudes. While fathers' attitudes influence sons' and daughters' attitudes equally, mothers' attitudes influence daughters' attitudes more than sons'. It seems therefore that, in our Australian sample, mothers play a particularly salient role in the gender socialization of their daughters.

Altogether, our findings provide strong, contemporary evidence that family influences play a pivotal role in the maintenance of the status quo concerning normative beliefs about the appropriate roles of men and women in society. To the extent that these beliefs impact on men's and women's relative life chances, such intergenerational influences also contribute to the reproduction of gender inequalities. Yet our findings provide also a glimpse of hope: egalitarianism is “intergenerationally stickier” than traditionalism, and so we may expect steady—though perhaps slow—movement towards more gender-egalitarian societies through cohort replacement. Further, if reducing gender biases in contemporary societies is a policy goal, then our findings indicate that interventions that target parents will have significant flow on effects for the next generation.



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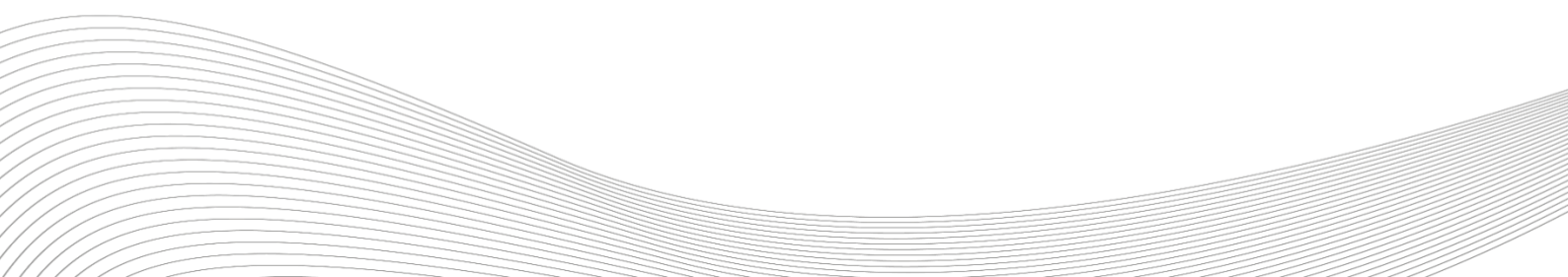
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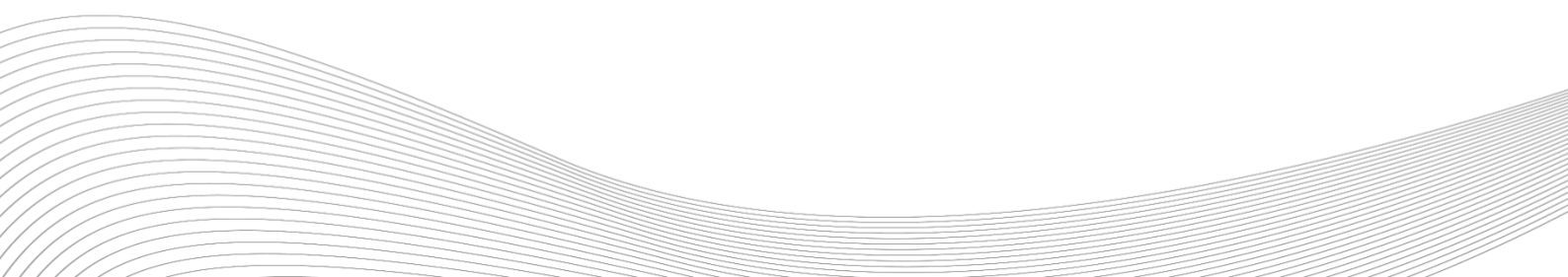
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ABSTRACT

Traditional gender beliefs play an important role in (re-)producing gender inequalities, and trends towards gender egalitarianism have stalled. As such, identifying factors that contribute to individuals upholding traditional versus egalitarian gender-role attitudes is an important scholarly endeavour. While previous studies have identified critical predictors—such as religion, education and parenthood—intergenerational influences have received little empirical attention. Drawing upon gender-socialization theory, we derive hypotheses about how parental attitudes towards gender roles are transmitted to their children, considering differences between mothers' and fathers' influences, parental (dis)agreement in attitudes, and moderation by child's gender. We test these hypotheses using unique, high-quality data from a national sample of Australian 14/15-year-old adolescents (Longitudinal Study of Australian Children, $n=1,806$). We find substantial intergenerational correlations in gender-role attitudes. Paternal and maternal attitudes exert a similar degree of influence on their children's attitudes, and have complementary rather than cumulative effects. While fathers' attitudes influence sons' and daughters' attitudes equally, mothers' attitudes influence daughters' attitudes more than sons'.

Keywords: Australia; attitudes; intergenerational transmission; families; gender; socialization

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Introduction

Across the developed world, the second half of the 20th century saw significant improvements in multiple indicators of gender equality, including widespread incorporation of women into the labour force, reductions in the gender pay gap, and increased representation of women in politics and positions of power (England 2010; Goldin 2006). However, since the 1990s, some of these trends have decelerated (England 2010; Scarborough, Sin and Risman 2019). As such, gender inequality remains a persistent feature of contemporary societies in the western world.

Gender-role attitudes (or beliefs) refer to *“individuals’ levels of support for a division of paid work and family responsibilities that is based on the notion of separate spheres [...] with men as breadwinners and women as homemakers”* (Davis and Greenstein 2009, 88). Sociological theory points to the importance of traditional gender beliefs as a core contributor to existing gender inequalities (Bolzendahl and Myers 2004; Davis and Greenstein 2009). Individuals adopt and perform gendered scripts in ways that produce and reproduce a social order that privileges men and masculinity over women and femininity, thereby reinforcing traditional gender divisions and inequalities (Connell 2005; West and Zimmerman 1987). The core tenets of this theoretical framework are reflected in extant empirical evidence. For example, studies have demonstrated that traditional gender-role attitudes are associated with female underemployment, unequal housework divisions, and domestic violence against women (Davis and Greenstein 2009). Mirroring the trends observed for objective indicators of gender equality, research has documented significant progress towards more gender-egalitarian social attitudes since the mid-20th century (Thornton and Young-DeMarco 2001). However, since the turn of the century this trend has also stalled, even regressed (Cotter, Hermsen and Vanneman 2011; Van Egmond et al. 2010).

Given firstly, the role traditional gender beliefs play in entrenching gender inequalities, and secondly, the stalling of trends towards gender egalitarianism, identifying factors that contribute to individuals developing traditional versus egalitarian gender-role attitudes is an important endeavour. Previous research findings point to low levels of education (Cunningham et al. 2005), religious beliefs (Seguino 2011), aging (Perales, Lersch and Baxter 2019) and parenthood (Evertsson 2013) as key factors contributing to individuals endorsing traditional gender beliefs. An aspect that has received comparatively little empirical attention is the role of intergenerational influences—or how mothers’ and fathers’ gender-role attitudes influence the gender-role attitudes of their offspring. This constitutes the focus of the present study. Understanding the role of parents in transmitting gender-role

attitudes to their offspring is important, as it offers a direct window into how a core social institution—the family—may foster or deter social change.

Gender-socialization theory posits that individuals develop schemas about gender from an early age through interaction with socializing agents (e.g., parents, siblings, and peers) and exposure to socializing channels (e.g., schools and media) (Burt and Scott 2002; Katz and Ksansnak 1994). Social learning perspectives argue that parents play a critical role in their children’s socialization, and are considered the primary gender socializing agents in the early years (Bussey and Bandura 1999; Davis 2007). In this paper, we draw upon these theories to derive hypotheses about the ways in which mothers’ and fathers’ attitudes towards gender roles are associated with those of their children. We contribute to the emerging body of evidence on the intergenerational transmission of gender-role attitudes by providing a more thorough theoretical and empirical account than found in previous studies. We not only conceptualize and test overall intergenerational correlations, but also differences between maternal and paternal influences, the effects of parental agreement and disagreement in attitudes, and the moderating role of child’s gender. Further, we advance existing knowledge by providing first-time evidence for a new country context (Australia). To accomplish this, we leverage high-quality data from a national sample of Australian 14/15 year-old adolescents and their parents (Longitudinal Study of Australian Children, $n=1,806$).

Conceptual Framework

Gender Socialization and the Intergenerational Transmission of Gender Role-Attitudes

The study of intergenerational correlations in gender-role attitudes is embedded within a broader body of work on the intergenerational transmission of values and cultural orientations (Bisin and Verdier 2010; Trommsdorff 2009). While several perspectives have been used to explain parent-child associations in socio-cultural views, socialization theory has come to dominate the literature. The socialization perspective rests on the assumption that the formation of social and cultural attitudes, including gender-role attitudes, takes place during childhood and adolescence (Vollebergh, Iedema and Raaijmakers 2001)—the so-called “impressionable youth” hypothesis/model. During this sensitive period of the life course, parents view the socialization of their children as one of their core child-raising responsibilities. With altruistic motivations, parents seek to inculcate values and attitudes in their children that they believe will improve their life experiences and prospects (Dhar, Jain and Jayachandran 2019; Doepke and Zilibotti 2017; Epstein and Ward 2011). These values and attitudes that parents aim to transfer to their children are often consistent with

those the parents espouse. At the same time, children learn by observing their parents' behaviours, which are commonly aligned with their beliefs.

Concerning the transmission of gender-role attitudes, gender-socialization theory posits that children learn about culturally normative gender roles from an early age (Blakemore 2003; Eagly 1987), with parents being again core to this process (Bussey and Bandura 1999; Davis 2007). An important mechanism whereby parents transmit their gender attitudes and behaviours to their offspring is role modelling, or the process whereby individuals engage in social learning through observation (Bussey and Bandura 1999; Eagly 1987). Children learn about the social world and the "appropriate" ways of conducting themselves within society by noting, internalising and emulating the behaviours of the individuals with whom they interact. Therefore, when a young child spends time with a parent, they will be exposed to and "absorb" the specific ways in which that parent understands and "does" gender. For instance, children may observe the ways in which their parents dress and present themselves, specialize in market versus non-market work and divide household tasks, or witness their parents discussing issues that make their gender views explicit.

The literature also points to direct parental exhortations concerning "desirable" ways of thinking about and enacting gender (Epstein and Ward 2011; Min, Silverstein and Lendon 2012; Platt and Polavieja 2016). Parents may directly impart tuition about gender when they encounter "teachable moments" as they move through their everyday lives. Take for example a situation in which a parent and a child encounter a male nurse or a female firewoman, in which the parent may transmit to the child that this is an appropriate or an inappropriate role depending on their personal beliefs. Parents may also comment on gender portrayals in books, television, games or other media when they share these with their children.

While parents are by no means the only source of gender socialization, they can exert a degree of control over their children's exposure to other socialization forces and agents—prioritising sources that champion their own gender-role attitudes. For example, parents can promote/restrict children's access to gendered versus non-gendered toys or clothing, or encourage/discourage their participation in gender-typical versus gender-atypical activities, and in homophilic versus gender-diverse friendship circles (Schrock and Schwalbe 2009). To steer their children towards their own gender beliefs, parents can also modulate their children's exposure to media (e.g., allow/disallow videogames or television shows that reify traditional gender roles), and strategically select the school the child will attend (e.g., seek/avoid religiously-affiliated or single-sex schools).

Based on these theoretical premises, we expect that *the gender-role attitudes of Australian adolescents will resemble those of their mothers and fathers (Hypothesis 1)*. While—to our knowledge—no study has tested this in the Australian context, research in other countries has yielded findings consistent with this postulation. For example, Moen, Erickson, and Dempster-McClain (1997) used US data from a New York community survey to study the intergenerational correlation of gender-role attitudes between mothers and daughters (n=246 mother-daughter dyads). Mothers' gender-role attitudes—measured in 1956, when these women were in their mid-30s—were significantly correlated with their daughters' gender-role attitudes—measured in 1986, when these women were in their late-30s. Other studies have reported similar findings for the US (Carlson and Knoester 2011; Cichy, Lefkowitz and Fingerman 2007; Davis and Wills 2010; Thornton, Alwin and Camburn 1983), the UK (Burt and Scott 2002; Platt and Polavieja 2016), Israel (Kulik 2002) and India (Dhar, Jain and Jayachandran 2019). In this study, we provide novel empirical evidence for Australia.

Maternal and Paternal Influences on Children's Gender-Role Attitudes

Although the fact that parents transfer their gender-role attitudes to their children is reasonably well established, less is known about whether mothers or fathers exert a stronger influence—partially because most research has focused exclusively on mothers (Davis 2007; Klann, Wong and Rydell 2018). In fact, different theoretical perspectives lead to different expectations. On the one hand, mothers perform a substantially higher share of the childcare than fathers when children are young as well as during adolescence (Craig, Powell and Smyth 2014). As a result, mothers spend significantly more time with their children than fathers (Cano, Perales and Baxter 2019). This suggests that young children will be disproportionately exposed to role modelling and direct teachings about gender from their mothers compared to their fathers. It also means that children may develop greater attachment to mothers than fathers (Biblarz and Stacey 2010). This is important, as parent-child attachment is recognised in the literature as a factor contributing to children respecting, engaging with and adopting parental beliefs and attitudes (Carlson and Knoester 2011; Min, Silverstein and Lendon 2012). Altogether, these arguments suggest that *children's gender-role attitudes will be more intensely influenced by mothers' than fathers' gender-role attitudes (Hypothesis 2a)*.

On the other hand, the literature on parenting styles and practices indicates that mothers and fathers relate to their offspring in different ways. Notably, fathers are more dominant, authoritarian and rigid in their interactions with children, and more likely to sanction

children's deviations from the behaviours that they deem appropriate (Biblarz and Stacey 2010; Klann, Wong and Rydell 2018). It follows that children may be more pressured into conforming to their fathers' than their mothers' orientations, including those associated with gender relations (Bussey and Bandura 1999). Further, children often resort to culturally defined gender stereotypes when making inferences about other people (Berndt and Heller 1986). Due to deeply ingrained patriarchal social structures, men tend to enjoy higher status than women across social settings (West and Zimmerman 1987), and so children may perceive their fathers as being more competent than their mothers (Kagan and Lemkin 1960). As such, it is possible that children attribute more credibility to their fathers' than their mothers' teachings about social issues, including those about gender roles. Altogether, these arguments suggest that *children's gender-role attitudes will be more strongly influenced by fathers' than mothers' gender-role attitudes (Hypothesis 2b)*.

Studies that have grappled with these issues empirically are few and far apart, and findings are mixed. Using data from a US community sample of adults aged 22/49 years (n=148), Cichy, Lefkowitz and Fingerman (2007) found stronger father-child than mother-child correlations in attitudes to marital roles. On the other hand, Dhar, Jain and Jayachandran (2019) reported a stronger influence of maternal than paternal gender-role attitudes on children's gender-role attitudes using Indian survey data (n=5,483). Using data from 206 US adolescents (1979 National Longitudinal Survey of Youth, NLSY79), Davis and Wills (2010) found that paternal and maternal influences had comparable magnitudes. The same conclusion was reached by O'Bryan, Fishbein and Ritchey (2004) using data from 9th to 11th graders from a US community sample (n=111). We contribute to building this evidence base by formally testing these competing hypotheses with optimal data and methods.

Child's Gender and Intergenerational Correlations in Gender-Role Attitudes

Based on previous literature comparing relationship dynamics in same-gender versus different-gender parent-child dyads, we theorize that the magnitude of correlations between parental and offspring gender-role attitudes will also vary depending on the child's gender. Psychological research on parent-child attachment has documented stronger bonds between same-gender parent-child dyads, whereby fathers display a predilection for their sons and mothers for their daughters (Perales, Jarallah and Baxter 2018; Raley and Bianchi 2006). Consistent with these same-gender filial preferences, mothers spend comparatively more time with their daughters, whereas fathers spend comparatively more time with their sons (McHale, Crouter and Whiteman 2003; Rossi and Rossi 1990). Through increased shared time expenditure and greater attachment, parents' gender-related teachings and role

modelling may disproportionately reach their same-gender children. Similarly, some perspectives maintain that children may be predisposed to seek or accept gender-related socialization from their same-gender parents. Since early childhood, children adopt gender identities and understand gender as a divisive, in-group/out-group social category (Bussey and Bandura 1999; Yee and Brown 1994). As such, young children may look up to their same-gender parents as aspirational role models—more so than to their different-gender parents, particularly for gender-related issues (Burt and Scott 2002; Cichy, Lefkowitz and Fingerman 2007; Kulik 2002; Platt and Polavieja 2016).

Based on these theoretical premises, we expect that *the gender-role attitudes of Australian girls (boys) will be more strongly associated with the gender-role attitudes of their mothers (fathers) (Hypothesis 3)*. Despite the substantial attention given to same-gender parent-child dyads in the theoretical literature, surprisingly few studies have examined whether these hypotheses are reflected in the data. Further, such studies have yielded inconsistent findings. Using US data from a Detroit community survey (n~900 offspring), Thornton, Alwin and Camburn (1983) found little difference in the degree of influence of maternal gender-role attitudes on the attitudes of their male and female children. These results were echoed in the aforementioned study by O'Bryan, Fishbein and Ritchy (2004), and in Farre and Vella (2013) using NLSY79 data from young people aged 15/22 years (n=2,870). In contrast, Platt and Polavieja's (2016) analyses of British adolescents aged 11/15 years (British Household Panel Survey, n=2,859) yielded stronger parent-child correlations in attitudes towards the sexual division of labour within same-sex than different-sex parent-child dyads. The results for India in Dhar, Jain and Jayachandran (2019) align with the British findings. Using a sample of 134 Israeli adolescents (13/14 years), Kulik (2002) reported stronger father-son than father-daughter correlations in gender-role attitudes, but no differences between mother-son and mother-daughter correlations. The present study provides a more encompassing examination of the role of parent-child gender similarity in the intergenerational transmission of gender-role attitudes, and first-time evidence for Australia.

Maternal and Paternal Gender-Role Attitudes: 'Cumulative Reinforcement' or 'Egalitarian Dominance'?

Despite individuals' tendency to engage in assortative mating—that is, to establish intimate relationships with others with whom they share social characteristics, in many families mothers and fathers hold dissimilar attitudes towards gender roles. In general, it is well-established that women hold more egalitarian gender-role attitudes than men (Davis and Greenstein 2009)—a pattern that applies also to mothers and fathers, more specifically (see

e.g., Burt and Scott 2002). In the context of the intergenerational transmission of gender-role attitudes, this poses interesting questions about how similarity and difference in parental attitudes may influence children's attitude formation. A first possible scenario is what we will refer to as 'cumulative reinforcement'. When both parents hold comparatively traditional or comparatively egalitarian gender-role attitudes, we may expect their children to develop attitudes that more closely resemble those of their parents. Children in these households will be exposed to consistent role-modelling about gender roles from both mother and father, and to a homogeneous set of parental messages about the "appropriate" roles of men and women in society (Platt and Polavieja 2016). As such, we may expect that *similarity in maternal and paternal gender-role attitudes will exert a "reinforcing effect", such that children develop gender-role attitudes that are more attuned with their parents' gender-role attitudes (Hypothesis 4a).*

A second and competing scenario is what we will refer to as 'egalitarian dominance'. Socialization perspectives have noted that attitudes and values that are less socially acceptable/desirable (i.e., those that are not endorsed by a majority of society) are more difficult for parents to transfer onto their offspring (Min, Silverstein and Lendon 2012). This is because—to be successful—parental socialization of children into non-normative socio-cultural attitudes must overcome other socializing forces that may steer their children in the opposite direction. In the context of gender-role attitudes—as noted earlier—there have been major shifts towards gender egalitarianism across the developed world, and contemporary public discourses are more aligned with egalitarian than traditional gender ideology (Cotter, Hermsen and Vanneman 2011; England 2010; Scarborough, Sin and Risman 2019; Van Egmond et al. 2010). Hence, parents may find it easier to transfer egalitarian than traditional gender-role attitudes onto their offspring. Based on these ideas, we expect that *children who are exposed to at least one parent with egalitarian gender-role attitudes will develop egalitarian gender-role attitudes themselves (Hypothesis 4b).*

To our knowledge, only Davis and Wills (2010) have previously tested a similar hypothesis—specifically, that fathers' gender-role attitudes would moderate the association between maternal and child gender-role attitudes. Against their expectations, they found evidence consistent with our 'egalitarian dominance' hypothesis: when adolescents had an egalitarian father, mothers' gender beliefs had no influence on their gender-role attitudes. Exploring similar issues, Platt and Polavieja (2016) examined how (dis)agreement in paternal attitudes towards the sexual division of labour influence their offspring's attitudes, identifying evidence of complex interrelationships between parental and child sex and parental and child attitudes. Fathers' attitudes affected sons' attitudes irrespective of mothers'

attitudes, but they only affected daughters' attitudes when consistent with mothers' attitudes. Similarly, mothers' attitudes affected daughters' attitudes irrespective of fathers' attitudes, but only affected sons' attitudes when consistent with fathers'. Our analyses complement these findings, thereby contributing to filling this significant gap in scholarly knowledge.

Data and Methods

Dataset and Sample Selection

To test the research hypotheses we use high-quality data from Growing Up in Australia: The Longitudinal Study of Australian Children (LSAC), a probability survey following two national cohorts of Australian children (Australian Institute of Family Studies 2018). The use of a large, national sample that enables generalization of the findings to the Australian population constitutes a strength of the present study, as the earlier literature is dominated by studies of small community samples (e.g., Cichy, Lefkowitz and Fingerman 2007; Davis and Wills 2010; Kulik 2002; Moen, Erickson, and Dempster-McClain 1997; O'Bryan, Fishbein and Ritchy 2004; Thornton, Alwin and Camburn 1983). The data at hand—collected in 2012/2014—is also much more recent than those analysed in earlier studies—typically dating from the 1970s to the 1990s. This allows us to provide an up-to-date account of the relationships of interest.

The LSAC sample was collected using complex probabilistic methods and was designed to be representative of Australian children born between March 2003 and February 2004 (B Cohort) and between March 1999 and February 2000 (K Cohort)—with the exception of children living in some remote areas of Australia. Since the study's baseline wave in 2004, these children have been followed biennially. The baseline sample size comprised 10,090 children (response rate: ~54 percent): 5,107 B-cohort children and 4,983 K-cohort children (Australian Institute of Family Studies 2018). LSAC collects information from multiple informants: the study child's parents, the study child, and—in some waves—a teacher or childcare worker. Such information is collected using different data-collection methods, including paper-based and computer-assisted face-to-face interviews, audio computer-assisted interviews, and leave-behind self-complete questionnaires. Compared to other birth-cohort studies, LSAC's panel attrition rates are low. For the K Cohort, ~90 percent of Wave-1 children were retained in Wave 2, ~87 percent by Wave 3, ~84 percent by Wave 4, ~79 percent by Wave 5 and ~71 percent by Wave 6 (Australian Institute of Family Studies, 2018).

In this study, we use data from Waves 5 and 6 from LSAC's K cohort, when information on gender-role attitudes was collected from parents (Wave 5) and children (Wave 6). In Wave 6, K-cohort children were 14/15 years old. The initial sample size for that wave and cohort was 3,537 children. We limit our analyses to children who resided with both male and female parents at the time of interview, and both of the parents were study respondents (n=2,796). Approximately 5 percent of cases had missing data on children's gender-role attitudes (n=149), and an additional 4 percent had missing data on the control variables (n=109). Missing data on gender-role attitudes affected 3 percent of mothers (n=87), whereas the equivalent figure for fathers was 27 percent (n=674). The larger share of missing data on paternal than maternal gender-role attitudes stems from the fact that fathers are often the secondary parent respondent in LSAC. While primary parent respondents completed a computer-assisted self-interview, secondary parent respondents completed a leave-behind self-complete questionnaire. The latter questionnaire incurred higher non-response (Norton and Monahan 2015). Due to this, we repeated our main analyses for maternal and paternal gender-role attitudes separately, without excluding cases with missing data on the other measure. The results—discussed below—were similar. Because the majority of the missing data was on the key explanatory and outcome variables (i.e., children's and parents' gender-role attitudes), we refrained from imputing these records. Our final analytic sample comprised 1,806 children with complete information across analytic variables.

Measuring Individual and Parental Gender-Role Attitudes

To measure children's, mothers' and fathers' gender-role attitudes, we use a battery of three questions measuring respondents' opinions about men's and women's roles within the family, the labour market and society. Respondents are presented with three statements, and asked to rate their degree of agreement with them on a scale from [1] "*strongly disagree*" to [5] "*strongly agree*". The statements are: [1] "*It is better for the family if the husband is the principal income earner outside the home and the wife has primary responsibility for the home and children*", [2] "*If both husband and wife work, they should share equally in the housework and childcare*", and [3] "*Ideally, there should be as many women as men in important positions in government and business*". To ensure that all items point in the same direction, the scores for Item 1 ("*It is better for the family...*") were reverse coded.

We combine responses to these three items into an additive index of gender-role attitudes by summing up their scores. In doing so, we exclude individuals without valid responses for all items. For ease of interpretation, the resulting index was rescaled to range from 0 (most

traditional attitudes) to 100 (most egalitarian attitudes) through the following linear transformation: $new\ score = (original\ score - 3) \times (100/12)$. Of note, the gender-role attitude questions were asked of mothers and fathers in LSAC Wave 5 (2012) and of their children in LSAC Wave 6 (2014). Hence, the parental measures enter the analyses as lagged indicators. This course of action has desirable statistical properties, as it reduces the risk of reverse causality (i.e., children’s attitudes influencing their parents’ attitudes).¹

The means and standard deviations for all gender-role attitude items and index are shown in Table 1. Children’ gender-role attitudes (mean=72.55, SD=17.89), as measured by their index scores, were more egalitarian than those of their mothers (mean=67.73, SD=16.54) and fathers (mean=63.33, SD=15.90). Results not shown in the table further reveal that girls’ gender-role attitudes (mean=77.05, SD=17.08) were substantially more egalitarian than boys’ (mean=68.17, SD=17.58). Table A1 in the Appendix presents pairwise correlations between all measures of gender-role attitudes. As could be expected, all correlations across child, mother and father measures were positive, suggesting both assortative mating on the basis of gender beliefs and intergenerational transmission of gender-role attitudes.

Analytic Approach

We model the intergenerational correlations between parents’ and children’s gender-role attitudes through multivariable linear regression models. The main models, which enable us to test Hypotheses 1 and 2a/2b, take the following form:

$$GRA_c = \alpha + GRA_m\beta_1 + GRA_f\beta_2 + X_{cmf}\beta_3 + \varepsilon \quad (1)$$

where the c, m, and f subscripts stand for ‘child’, ‘mother’ and ‘father’, respectively; GRA is the index measure capturing endorsement of egalitarian gender-role attitudes; α is the model’s intercept; β_1 and β_2 are the key parameters of interest capturing the intergenerational influences of maternal and paternal gender-role attitudes; X is a set of control variables for observable characteristics of children, mothers and fathers, and β_3 the respective vector of coefficients; and ε is the usual random error term.

¹ The Cronbach Alpha for the index measures was modest: .58 for children, .48 for mothers, and .45 for fathers. Yet it is well-established that Alpha scores tend to be downward-biased when indices comprise few items (Yuan and Bentler 2002). Under these circumstances, a better way to assess whether items should be combined into an index is to assess the mean inter-item correlations (Briggs and Cheek 1986). In our data, these were within the acceptable range: 0.28 (father index), 0.31 (mother index) and 0.40 (child index). In addition, to ensure that low internal consistency did not pose a threat to our results, we undertook separate analyses of each of the three items (Table 2).

The control variables in the X vector resemble those used in cognate studies and represent factors that may confound the associations between paternal and child gender-role attitudes. These covariates were carefully selected to ensure that they do not fall on the causal pathway between parents' and children's attitudes, as the inclusion of such variables would result in downward-biased associations of the intergenerational correlations. For this reason, we did not to control for factors that may be both a product of parental gender-role attitudes and a determinant of children's gender-role attitudes, such as maternal labour-force participation or parental household divisions of labour. They include child's sex (male/female), child's age (in months), child's participation in religious activities (yes/no),² presence of one or more brothers/sisters in the household (yes/no), whether a language other than English is spoken within the household (yes/no), whether the child is Indigenous (yes/no), and mother's and father's ages (in years) and highest educational qualification (degree/below degree).

To test Hypothesis 3, we augmented the principal specification in Equation (1) by adding interactions between mother's and father's gender-role attitudes and the dummy variable denoting whether the child was female (F):

$$GRA_c = \alpha + GRA_m\beta_1 + GRA_f\beta_2 + F_c\beta_3 + (F_c \times GRA_m)\beta_4 + (F_c \times GRA_f)\beta_5 + X_{cmf}\beta_6 + \varepsilon \quad (2)$$

The coefficients on the interactions (β_4 and β_5) provide a test of whether or not same-gender parent-child dyads exhibit stronger intergenerational correlations.

To test Hypotheses 4a and 4b, we expanded the principal specification in Equation (1) by adding an interaction term between the mother's and the father's gender-role attitudes:

$$GRA_c = \alpha + GRA_m\beta_1 + GRA_f\beta_2 + (GRA_m \times GRA_f)\beta_3 + X_{cmf}\beta_4 + \varepsilon \quad (3)$$

By interpreting the direction and statistical significance of the coefficient on the new interaction term (β_3), we can disentangle the 'cumulative reinforcement' and 'egalitarian dominance' scenarios outlined above.

² This variable takes the value one if the main parent respondent reported that the child attended religious services or classes at least once a week over the past three months *or* had attended a religious service, church, temple, synagogue or mosque with a parent or family member in the past month.

Empirical Evidence

Main Models: Hypothesis 1 & 2a/2b

In this section we present the results of our multivariable regression analyses. Model 1 in Table 2 is the principal specification, and is used to test Hypotheses 1, 2a and 2b. Hypothesis 1 posited that the gender-role attitudes of Australian adolescents would resemble those of their mothers and fathers. Consistent with this postulation, we found large and statistically significant correlations between children's gender-role-attitude index scores and their mothers' ($\beta=0.141, p<0.01$) and fathers' ($\beta=0.172, p<0.01$) index scores. Results from a Wald test revealed that the influences of fathers' and mothers' attitudes on children's attitudes were not significantly different from each other ($p>0.1$). Hence, we found support for neither Hypothesis 2a (which posed that children's gender-role attitudes would be more intensely influenced by their mothers' attitudes) nor Hypothesis 2b (stating that children's gender-role attitudes would be more intensely influenced by their fathers' attitudes). Instead, both mothers and fathers exerted a similar degree of influence on their children's gender-role attitudes.

The results for the control variables indicated that children exhibited more egalitarian gender-role attitudes when they were female ($\beta=8.787, p<0.01$), and more traditional gender-role attitudes when they were older within the cohort's age range ($\beta=-0.192, p<0.05$), Indigenous ($\beta=-7.731, p<0.05$) or participated in religious activities ($\beta=-1.678, p<0.1$). Neither having sisters ($\beta=-0.069, p>0.1$) nor brothers ($\beta=-0.030, p>0.1$) significantly influenced children's attitudes, and nor did coming from a non-English-speaking household ($\beta=-1.221, p>0.1$). Concerning parental characteristics, maternal university qualifications were associated with their children holding more egalitarian attitudes ($\beta=3.370, p<0.01$), whereas father's age ($\beta=0.043, p>0.1$), mother's age ($\beta=0.046, p>0.1$), and father's university qualifications ($\beta=0.642, p>0.1$) were not significantly correlated with children's gender role attitudes.

Models 2 to 4 in Table 2 disaggregate the intergenerational correlations across the three items that comprise the gender-role attitudes index. These models reveal seemingly large and statistically significant correlations between both parents' scores and children's scores for Item 1 (male breadwinning) and Item 3 (women in power positions). However, there were no statistically significant intergenerational correlations for Item 2 (housework divisions). We discuss these findings in more detail below.

Interaction Models: Hypothesis 3

Model 5 in Table 2 is used to test Hypothesis 3 (i.e., that the gender-role attitudes of Australian children would be more strongly associated with those of their same-gender parents). To do so, we added variables capturing interactions between the parents' gender-role attitudes and the child's sex to our principal specification. Only the interaction between mothers' gender-role attitudes and the child being female was statistically significant ($\beta=0.116$, $p<0.05$), lending partial support for Hypothesis 3. The meaning of this interactive effect can be better grasped by inspecting Figure 1, which shows the predicted means based on model estimates. While fathers' gender-role attitudes exerted indistinguishable influences on the gender-role attitudes of their male and female children (right-hand panel), the relationship between maternal and child gender-role attitudes was visibly steeper for female than male children (left-hand panel).

Interaction Models: Hypotheses 4a and 4b

We continued our empirical investigations by testing Hypothesis 4a (that similarity in maternal and paternal attitudes would exert a reinforcing effect on children developing attitudes that resemble their parents' attitudes) and Hypothesis 4b (that children exposed to one parent with egalitarian attitudes would develop egalitarian attitudes themselves). To accomplish this, we expanded the principal specification by including an interaction effect between mothers' and fathers' gender-role-attitude index scores (Model 6, Table 2). The estimated coefficient on this interaction effect was negative and statistically significant ($\beta=-0.003$, $p<0.05$). The meaning of this is easier to ascertain by inspecting the model's predictions presented in Figure 2. This reveals that mothers' index scores were more strongly correlated with children's scores when fathers espoused more traditional gender-role attitudes (left-hand panel). Similarly, fathers' index scores were more strongly correlated with children's scores when mothers held more traditional gender-role attitudes (right-hand panel). Further, there was a greater degree of variability in children's gender-role attitudes when either their mother or their father upheld traditional gender beliefs, and a smaller degree when either their mother or their father espoused egalitarian gender beliefs. This pattern of results is largely consistent with Hypothesis 4b: as long as one parent holds gender-egalitarian worldviews, children's attitudes will gravitate towards gender-egalitarian standpoints.

Additional Analyses and Robustness Checks

To test the sensitivity of our main findings we implemented a range of additional specifications; these results are summarised in Table 3. Model 7 demonstrates that the associations between parents' and children's gender-role attitudes remained similar in models with no control variables. Models 8 and 9 indicate that estimating such associations separately for mothers and fathers did not change the pattern of results either. Models 10 and 11 use all available information on gender-role attitudes from mothers' or fathers', not excluding cases with missing data on the other parent's score. Again, these models yielded a consistent set of results. The results of Model 12 demonstrate that the associations between parents' and children's gender-role attitudes are linear, as quadratic terms for the maternal and paternal index scores proved to be statistically insignificant. Finally we also re-estimated the models excluding covariates that could be argued to be mediators, rather than confounders, of the parental/child gender-role-attitude association (child's Indigenous status, child's age and children's participation in religious activities). The results (not shown) were again consistent to those of the main models. Altogether, the results from this battery of alternative specifications confirmed that our main findings were robust to different sample-selection and model-specification choices.

Discussion and conclusion

The present study has offered an encompassing examination of whether and how mothers' and fathers' gender-role attitudes are transmitted to their adolescent children. We contributed to the literature by more thoroughly theorising and testing the separate and intersecting roles of paternal and maternal influences; leveraging more recent, richer and more robust data than most previous empirical studies; and extending the evidence base to a new country context (Australia).

Consistent with expectations (Hypothesis 1), we found that the gender-role attitudes of Australian adolescents aged 14/15 years resembled those of their mothers and fathers. Specifically, we found positive intergenerational correlations of approximately 0.14 to 0.17 for either parent, *ceteris paribus*. The magnitude of these correlations is generally similar to those reported in cognate studies in the US, the UK and India. Compared to these countries, Australia tends to score higher in cross-national indices of female empowerment. For example, in 2014—when the LSAC Wave-6 data were collected—Australia ranked 19th in the global Gender Inequality Index ranking, the UK ranked 39th, the US 55th and India 130th (United Nations Development Programme 2015). Hence, our findings suggest that intergenerational continuity in gender-role attitudes operates regardless of a country's

gender climate. Cross-national comparative studies could shed light over which institutional mechanisms may inhibit or exacerbate these correlations.

Interestingly, item-specific analyses revealed positive, large and statistically significant correlations for the items capturing male breadwinning and female access to positions of power, yet small and statistically insignificant correlations for the item capturing housework divisions. Such difference may emerge because intergenerational correlations in values are argued to be stronger in domains to which adolescents attribute more importance (Schönpflug 2001), and it is plausible that male breadwinning and women accessing positions of power in society are more important for Australian adolescents than housework divisions.

Our second set of hypotheses aimed at establishing whether maternal (Hypothesis 2a) or paternal (Hypothesis 2b) gender-role attitudes would exert a stronger influence on adolescents' attitudes. We found support for neither of these hypotheses: fathers' and mothers' attitudes had a comparable effect on children's attitudes. One possibility is that the mechanisms expected to generate stronger maternal influences (higher attachment and greater mother-child time) and those expected to generate stronger paternal influences (authoritarian parenting and higher social status) offset each other. Either way our findings are consistent with those of earlier studies of US community samples (Davis and Wills 2010; O'Bryan, Fishbein and Ritchy 2004).

To further examine the role of gender in the intergenerational correlation of gender-role attitudes, we also theorized and tested moderation by child's gender. Based on psychological theory, we hypothesised that the gender-role attitudes of girls would be more strongly associated with their mothers' attitudes, and the gender-role attitudes of boys with those of their fathers (Hypothesis 3). Our findings were partially consistent with these postulations: mother-daughter correlations were stronger than mother-son correlations, but father-daughter and father-son correlations had a similar magnitude. It seems therefore that, in our Australian sample, mothers play a particularly salient role in the gender socialization of their daughters. Since women have more to lose as a result of entrenched gender inequality, it is possible that mothers have a stronger interest than fathers in breaking the cycle, and so they expend greater efforts to sway their daughters' beliefs towards egalitarian standpoints (Bolzendahl and Myers 2004). This scenario is consistent with our last set of findings, as explained below.

A final study aim was to explore how mothers' and fathers' gender-role attitudes interacted with each other to shape their children's gender-role attitudes. Two scenarios were

theoretically justifiable: that similarity in parental gender-role attitudes would prompt children to develop gender-role attitudes more attuned to their parents' (Hypothesis 4a), or that exposure to one parent with egalitarian attitudes would result in children espousing such attitudes (Hypothesis 4b). Our results were consistent with the latter 'egalitarian dominance' scenario: when one parent held gender-egalitarian attitudes (regardless of that parent's gender), the influence of the other parent's attitudes on the child diminished. In other words, egalitarianism seems to trump traditionalism when there is parental disagreement in gender-role attitudes. These results align tightly with Davis and Wills' (2010) findings based on an earlier and substantially smaller US sample, whereby mothers' gender-role attitudes had no influence on adolescents' gender-role attitudes in the presence of an egalitarian father. Notwithstanding assortative mating, these findings call for optimism amongst those advocating for a more gender-egalitarian society: policies, programs and interventions to foster egalitarian beliefs need only reach one parent to result in attitude change in the child. Further, as gender egalitarianism gains traction as a cherished social goal, we might expect traditional gender beliefs to be increasingly more difficult to transfer across generations.

Despite the importance of our findings, several study limitations must be acknowledged. These point towards avenues for further research. First, neither this nor previous studies account for the fact that parental gender-role attitudes may be correlated with family dissolution. Evidence suggests that parents holding more traditional gender-role attitudes are less likely to separate or divorce (Davis and Greenstein 2009). Hence, samples of adolescents who co-reside with their parents—including the one used here—may exclude families in which parents hold comparatively less traditional viewpoints. Correcting for this requires the availability of panel data on gender-role attitudes. Second, our analyses do not test for bidirectional influences between parental and child gender-role attitudes—that is, the possibility that adolescents' gender-role attitudes influence their parents' attitudes, in addition to the reverse (Min, Silverstein and Lendon 2012; Vollebergh, Iedema and Raaijmakers 2001). While the use of a lagged measure of parental attitudes minimizes any bias to our findings stemming from this scenario, studies using repeated measures of children's and parent's gender beliefs could explicitly test this premise. Finally, the study scope was deliberately restricted to consider correlations between parents' and children's gender *attitudes* at a single point in time. We nevertheless recognise that complementary bodies of work have considered the role of parental gender *behaviours*, such as divisions of domestic and paid labour, and/or how parental influences may weaken or strengthen over

children's life courses (see e.g., Farre and Vella 2013; Halpern and Perry-Jenkins 2016; Platt and Polavieja 2016).

Despite these limitations, our findings provide strong, contemporary evidence that family influences play a pivotal role in the maintenance of the *status quo* concerning normative beliefs about the appropriate roles of men and women in society. To the extent that these beliefs impact on men's and women's relative life chances (Davis and Greenstein 2009), such intergenerational influences also contribute to the reproduction of gender inequalities. Yet our findings provide also a glimpse of hope: egalitarianism is "intergenerationally stickier" than traditionalism, and so we may expect steady—though perhaps slow—movement towards more gender-egalitarian societies through cohort replacement. Further, if reducing gender biases in contemporary societies is a policy goal, then our findings indicate that interventions that target parents will have significant flow on effects for the next generation.

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Tables and Figures

Table 1. Sample means and standard deviations

	Mean/%	SD
<i>Gender-role attitudes</i>		
Child's GRA Index (0-100)	72.55	17.89
Mother's GRA Index (0-100)	67.73	16.54
Father's GRA Index (0-100)	63.33	15.90
Child's GRA Item 1: Male breadwinner (1-5)	3.49	1.05
Mother's GRA Item 1: Male breadwinner (1-5)	3.16	0.86
Father's GRA Item 1: Male breadwinner (1-5)	3.17	0.98
Child's GRA Item 2: Housework divisions (1-5)	4.06	1.09
Mother's GRA Item 2: Housework divisions (1-5)	4.07	0.79
Father's GRA Item 2: Housework divisions (1-5)	3.89	0.93
Child's GRA Item 3: Power positions (1-5)	4.15	1.05
Mother's GRA Item 3: Power positions (1-5)	3.90	0.74
Father's GRA Item 3: Power positions (1-5)	3.54	0.93
<i>Controls</i>		
Child is female, %	49.28	
Child's age (in months)	178.87	4.26
Child has sister/s, %	55.59	
Child has brother/s, %	58.31	
Child speaks language other than English at home, %	7.86	
Child is Indigenous, %	1.22	
Child participates in religious activities, %	30.40	
Mother's age (in years)	45.91	4.53
Father's age (in years)	48.08	5.33
Mother has University qualifications, %	40.59	
Father has University qualifications, %	37.04	
<i>n</i>		1,806

Notes: LSAC, Cohort K, Wave 6 (age 14/15 years, Year 2014). GRA: Gender-role attitudes. SD: Standard deviation.

Table 2. Models of children's gender-role attitudes index (0-100), main specifications

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Mother's GRA Index (0-100)	0.141***				0.084**	0.338***
Father's GRA Index (0-100)	0.172***				0.160***	0.388***
Mother's GRA Index × Father's GRA Index					0.028	
Child is female × Mother's GRA Index					0.116**	
Child is female × Father's GRA Index						-0.003**
Mother's GRA Item 1: Male breadwinner (1-5)		0.148***				
Father's GRA Item 1: Male breadwinner (1-5)		0.170***				
Mother's GRA Item 2: Housework divisions (1-5)			0.005			
Father's GRA Item 2: Housework divisions (1-5)			0.011			
Mother's GRA Item 3: Power positions (1-5)				0.090***		
Father's GRA Item 3: Power positions (1-5)				0.140***		
Child is female	8.787***	0.333***	0.254***	0.455***	-0.885	8.754***
Child's age (in months)	-0.192**	-0.005	-0.008	-0.010*	-0.192**	-0.181*
Child has sister/s	-0.069	-0.006	0.013	-0.015	-0.102	-0.064
Child has brother/s	-0.030	-0.073	0.027	0.032	-0.134	-0.018
Child speaks language other than English at home	-1.221	0.007	-0.047	-0.097	-1.180	-1.159
Child is Indigenous	-7.731**	-0.246	-0.346*	-0.308	-7.665**	-7.946**
Child participates in religious activities	-1.678*	-0.113**	-0.051	-0.064	-1.685*	-1.562*
Mother's age (in years)	0.046	0.004	0.003	0.002	0.035	0.057
Father's age (in years)	0.043	0.003	0.005	-0.005	0.043	0.033
Mother has University qualifications	3.370***	0.247***	0.068	0.115**	3.384***	3.423***
Father has University qualifications	0.642	0.005	0.042	0.061	0.614	0.681
Constant	77.157***	2.957***	4.821***	4.973***	82.240***	61.811***
<i>n</i>	1,806	1,806	1,806	1,806	1,806	1,806
R ²	0.141	0.130	0.031	0.094	0.144	0.143

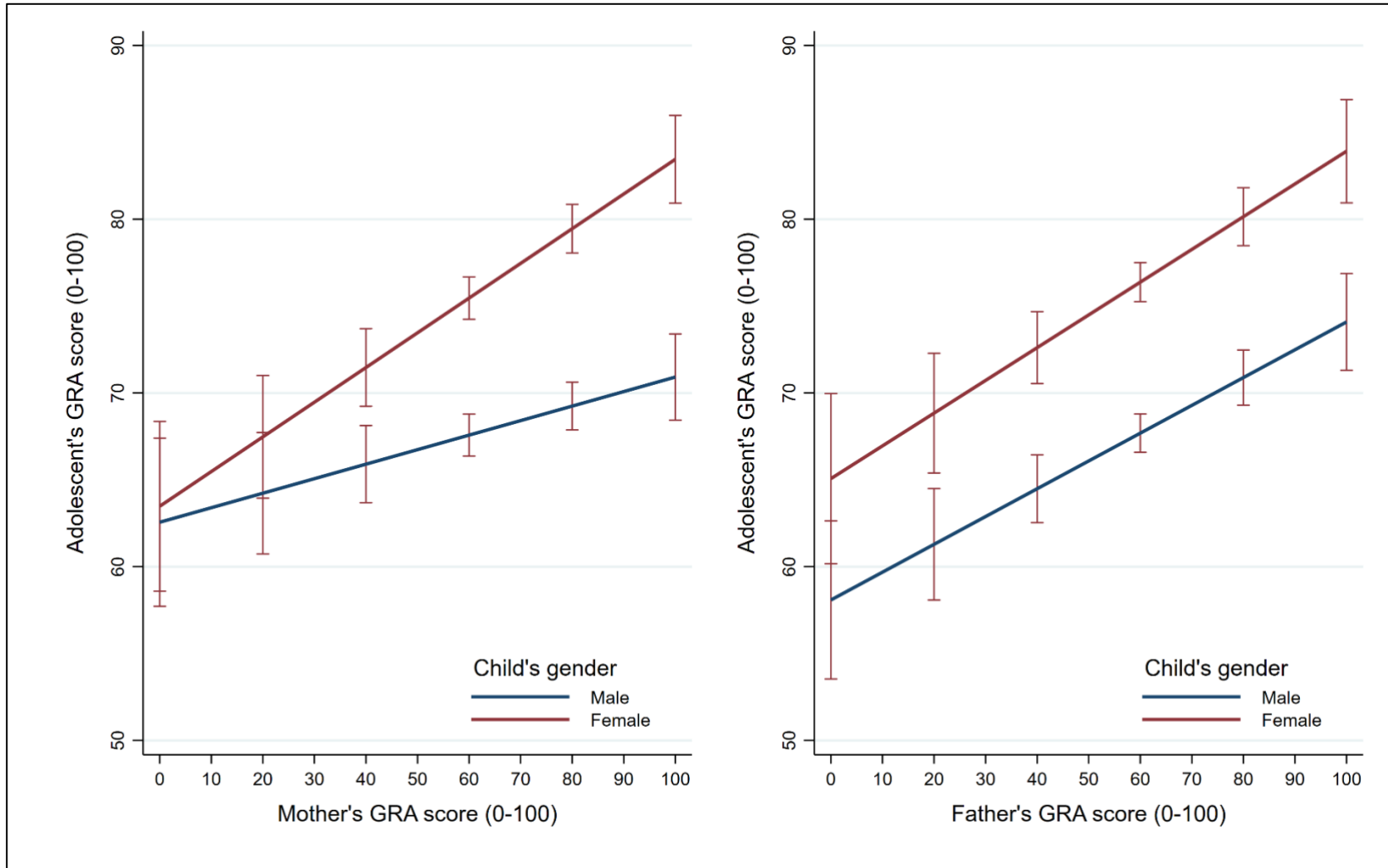
Notes: LSAC, Cohort K, Wave 6 (age 14/15 years, Year 2014). GRA: Gender-role attitudes. Statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3. Models of children's gender-role attitudes index (0-100), supplementary specifications

	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Mother's GRA Index (0-100)	0.157***	0.179***		0.191***		0.192
Father's GRA Index (0-100)	0.183***		0.216***		0.216***	0.261**
Mother's GRA Index × Mother's GRA Index						-0.000
Father's GRA Index × Father's GRA Index						-0.001
Child is female		9.042***	8.830***	8.798***	8.746***	8.760***
Child's age (in months)		-0.018	-0.196**	-0.186**	-0.202**	-0.191**
Child has sister/s		-0.103	-0.268	-0.102	-0.263	-0.069
Child has brother/s		0.001	-0.159	-0.205	-0.279	-0.052
Child speaks language other than English at home		-1.387	-1.263	-1.337	-1.457	-1.188
Child is Indigenous		-4.875*	-7.191**	-7.037*	-7.227**	-7.774**
Child participates in religious activities		-1.662**	-1.687*	-2.106**	-2.188**	-1.632*
Mother's age (in years)		0.037	0.081	0.046	0.082	0.047
Father's age (in years)		0.092	0.012	0.037	0.027	0.040
Mother has University qualifications		4.045***	3.774***	3.611***	3.918***	3.391***
Father has University qualifications		0.848	0.632	1.175	0.542	0.673
Constant	50.280***	51.289***	84.415***	83.697***	85.023***	72.702***
<i>n</i>	1,806	2,451	1,864	1,806	1,806	1,806
R ²	0.063	0.115	0.124	0.120	0.126	0.141

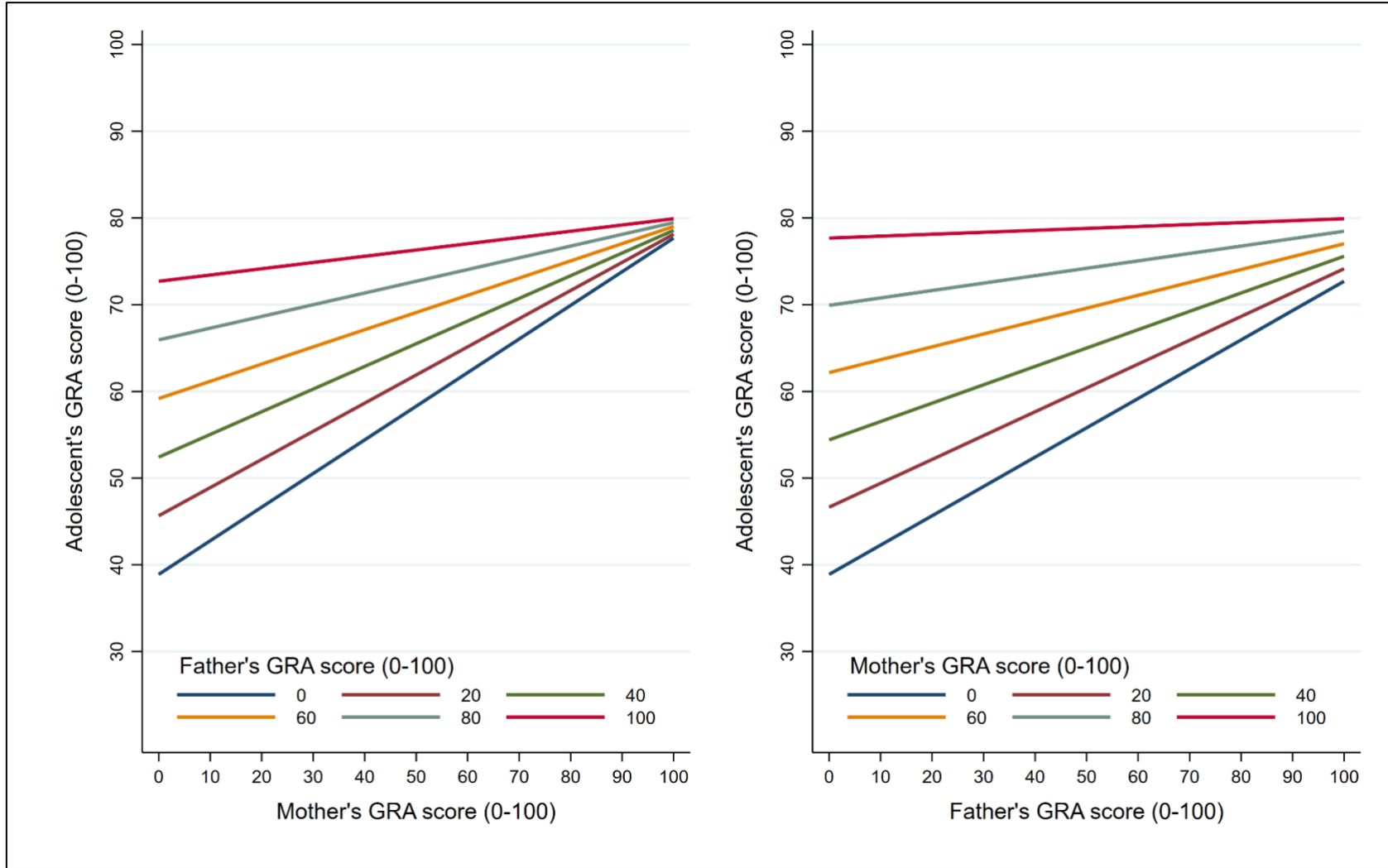
Notes: LSAC, Cohort K, Wave 6 (age 14/15 years, Year 2014). GRA: Gender-role attitudes. Statistical significance: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Figure 1. Predicted means of children's gender-role attitudes index, marginal effects from model interacting mother's and father's gender-role attitudes with child's gender



Notes: LSAC, Cohort K, Wave 6 (age 14/15 years, Year 2014). GRA: Gender-role attitudes. Based on the results of Model 5 in Table 2.

Figure 2. Predicted means of children's gender-role attitudes index, marginal effects from model interacting mother's gender-role attitudes with father's gender-role attitudes



Notes: LSAC, Cohort K, Wave 6 (age 14/15 years, Year 2014). GRA: Gender-role attitudes. Based on the results of Model 6 in Table 2.

Appendix

Table A1. Pairwise correlations between measures of gender-role attitudes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) Index, child	1.000											
(2) Index, mother	0.198	1.000										
(3) Index, father	0.210	0.321	1.000									
(4) Item 1, child	0.683	0.229	0.217	1.000								
(5) Item 2, child	0.752	0.061	0.078	0.210	1.000							
(6) Item 3, child	0.792	0.133	0.156	0.237	0.541	1.000						
(7) Item 1, mother	0.193	0.685	0.303	0.230	0.081	0.105	1.000					
(8) Item 2, mother	0.070	0.668	0.127	0.083	0.013	0.053	0.098	1.000				
(9) Item 3, mother	0.136	0.765	0.222	0.148	0.025	0.116	0.207	0.462	1.000			
(10) Item 1, father	0.211	0.313	0.718	0.245	0.071	0.137	0.325	0.129	0.179	1.000		
(11) Item 2, father	0.034	0.093	0.598	0.048	0.005	0.017	0.065	0.066	0.066	0.097	1.000	
(12) Item 3, father	0.164	0.229	0.759	0.130	0.075	0.152	0.202	0.061	0.200	0.265	0.315	1.000

Notes: LSAC, Cohort K, Wave 6 (age 14/15 years, Year 2014). $n=1,806$.