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## Social class, parenting, and child development: A multidimensional approach

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### ABSTRACT

Children from upper-class families have better cognitive outcomes and fewer behavioural problems than those from working-class families. Previous studies highlighted that the class gap in child development is partially driven by differences in parenting styles, but they rarely looked at multiple, more specific dimensions of parenting, i.e., inductive reasoning, parenting consistency, warmth and anger. This study provides a systematic account of how parental social class shapes these four dimensions of parenting, and how these dimensions affect children's cognitive outcomes and behavioural problems. Using high-quality, longitudinal data, and both hybrid models and the generalized methods of moments, this study reports two main findings. First, upper-class parents significantly differ from lower-class parents in two parenting dimensions, displaying more *inductive reasoning* and *parenting consistency*, but no relevant class differences are found in the two emotion-type dimensions of parenting (i.e., *warmth* and *anger*). Second, all four parenting dimensions have a strong impact on children's behavioural problems, while they do not affect cognitive outcomes. An exception is *consistency*, the only dimension that affects both types of child outcomes. The study underscores the relevance of analysing parenting and child development from a multidimensional approach to better understand how upper-class parents transmit advantage to children.

### 1. Introduction

In industrialized countries, children from privileged backgrounds have better cognitive outcomes and fewer behavioural problems than those from disadvantaged backgrounds (Bernardi & Ballarino, 2016; Bowles & Gintis, 2002). As adults, they are more likely to be employed, have higher income and be less likely to divorce (Duncan, Ziol-Guest, & Kalil, 2010). Thus, despite the expansion of educational opportunities in the last several decades, family background is still a powerful predictor of children's skills development and education. The lack of weakening effects of family-of-origin on children's education (Breen & Mueller, 2020) has triggered a deep academic debate about the specific investments and practices through which parents transmit status to their children.

Sociologists and economists alike suggest that parents transmit their socioeconomic status through investments of time and money (Becker & Tomes, 1979; Bourdieu & Passeron, 1977). Parents make these investments in the hope that they will promote their children's future

educational and economic success. The mechanisms forming this complex system of social reproduction are at the core of social stratification research. Previous research in this field offers evidence of the role played by parental time investments (Cano, Perales, & Baxter, 2019; Hsin & Felfe, 2014), cultural capital (Meier Jæger & Breen, 2016) compensating for disadvantageous life events (Bernardi, 2014) or tailoring educational activities to a child's developmental stage (Kalil, Ryan, & Corey, 2012). A less explored pathway within this literature, however, is the study of dimensions of parenting like inductive reasoning, parenting consistency, warmth and anger.

This study aims to answer the following general question: What do upper-class parents do at home that give their children better cognitive outcomes and fewer behavioural problems? It examines two interrelated, more-specific goals: (a) how multiple dimensions of parenting (i.e., inductive reasoning, parenting consistency, warmth and anger) affect children's cognitive outcomes and behavioural problems, and (b) how social class shapes these dimensions of parenting. As such, this study contributes to the sociological literature on the intergenerational

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transmission of (dis)advantage in two key ways.

First, this study approaches the relationship between class and the style of parenting analysing parenting dimensions forming these styles that are less studied in the sociological literature. Upper-class parents tend to develop a “concerted cultivation” style of parenting, and children raised under this type of parenting tend to do better in multiple outcomes (Cheadle, 2008). However, when previous studies analysed specific subdimensions of broader styles of parenting, they typically focused on cultural capital-type of practices, like attending to museums, shared educational reading time or attending extracurricular activities, but neglected more emotionally typed parenting dimensions. This study contributes to the literature on social stratification by examining parenting styles in a more granular way and in this way observe how dimensions like “parenting consistency” or “warmth” vary by parental social class. This is important because focusing on multiple and specific dimensions can provide conceptual clarity and enable a broader range of parenting components to be assessed. Importantly, the study includes two types of child outcomes (cognitive skills and behavioural problems), allowing the analysis of how different parenting dimensions affect different types of child outcomes.

Second, although many longitudinal studies analyse the role of concerted cultivation on academic achievement or child development (e.g., Jæger, 2011), few studies modelled the data in a way that captures the dynamic nature of child development. This study uses dynamic panel regression models (i.e., the Arellano-Bond estimator), which produces a more robust estimate of the analysed parameters. This is particularly important when looking at the effect of parenting on child development, because of the methodological complexity associated with such an enterprise. The complexity arises due to the existing reverse causality between how parents’ parent, and how children behave, as both types of actions are simultaneously cause and effect (i.e., parental practices affect children’s behaviour, just as children’s behaviour affects parental practices).

Therefore, the aim of this study is to provide an empirical assessment of the associations between class, multiple dimensions of parenting, and children’s cognitive and non-cognitive outcomes. To accomplish this, we use high-quality, panel data, from the Longitudinal Study of Australian Children (LSAC).

## 2. Theoretical framework

Parenting refers to the activities, beliefs, concerns, interaction or emotions parents have in relation to their children, and it can be divided into three hierarchical levels: parenting *practices*, parenting *dimensions* and parenting *styles*. Parenting practices involve specific activities that are context dependent and vary from one situation to another (e.g., playing music, reprimands). Parenting dimensions, however, represent a relatively stable set of activities, attitudes or practices parents do with their children. And parenting styles refer to the broader theoretical concept that involves several dimensions of parenting (Jansen, Daniels, & Nicholson, 2012). This study focuses on the intermediate of the three levels: parenting dimensions.

Developmental psychology has theorized parenting dimensions since the 1930s (see Symonds, 1939). Following Darling and Steinberg (1993: 488), we define parenting dimensions as “a constellation of attitudes toward the child that are communicated to the child and that, taken together, create an emotional climate in which the parent’s behaviour are expressed.” This definition is interesting because it combines values, behaviours and emotions. Critiques of previous research into the intersection of class and parenting are based on isolated analyses of values (Hays, 1996), emotions (Hochschild, 1979) or behaviours (Kalil et al., 2012). Separately analysing specific dimensions of parenting solves this issue by simultaneously capturing these three aspects.

Based on previous survey instruments as well as theory on how to conceptualize parenting and relevant parent-child interactions, the LSAC managers included a total of eight parenting dimensions in the

dataset. While all parenting dimensions are theoretically relevant for parent-child relations and child development, we excluded four of the dimensions included in LSAC (over-protectiveness, parenting self-efficacy, monitoring, and hostility) from the analysis. This decision was taken because they were measured only in one or two waves and thus hampered our aim of conducting a longitudinal study with, at least, three waves of observations including information on family background, parenting dimensions and child cognitive and non-cognitive outcomes.

The four dimensions included in three waves of the LSAC and used in this study were as follow. First, *inductive reasoning*, which is based on parental guidance of children through communicative negotiations on how to behave in specific situations (e.g., at home, in institutions or with other adults) as well as explanations about *why* children have been corrected or asked to do something (Lareau, 2011); second, *parenting consistency*, which refers to the process of setting clear rules, making sure the child understands and correctly follows them (Scheck, 1979), and dedicating effort to adapting the rules to the child’s developmental stages (Corsini & Marsella, 1979); third, *warmth*, which refers to expressing enthusiasm and praise for children’s accomplishments, and demonstrating affection and love (MacDonald, 1992); finally, *anger*, which refers to frustration and irritability toward the child and negative emotional reactivity (Amato, 1990).

Combining two (warmth and consistency) parenting dimensions, researchers can create the classic parenting styles developed by Baumrind (1991): Authoritative (high warmth and high consistency), permissive (high warmth but low consistency), and authoritarian (low warmth but high consistency). The operationalization of Lareau’s parenting styles (i.e., concerted cultivation and natural growth) based upon parenting dimensions is less clear. A ‘concerted cultivation’ style “entails an emphasis on children’s structured activities, language development and reasoning in the home, and active intervention in schooling” (Lareau, 2011: 124). Therefore, inductive reasoning and consistency seem key dimensions in Lareau’s dividing line between her two styles of parenting. ‘Natural growth’ is defined by the use of directives (i.e., low reasoning), and low consistency. Research typically find that children raised by either a ‘concerted cultivation’ or a ‘authoritative’ parenting style have greater cognitive and emotional advantages (e.g., Bodovski & Farkas, 2008) compared to those raised by other parenting styles. But importantly, the skill premium provided by some parenting styles varies by context, region or situation (Doepke & Zilibotti, 2014). In line with this, Bourdieu and Passeron (1977) suggested that the advantage granted by upper-class parents’ childrearing is *not* due to merit or experience, but due to the similarity between the institutional knowledge and the knowledge intergenerationally transmitted in wealthy households.

Parenting dimensions should be related with other cross-domain measures of parenting styles, like investments of time or money. Inductive reasoning and calm negotiations with the child, a key component of ‘concerted cultivation’, would consume more time than using directives. Warmth and investments of money may positively be related, as some parents consider that giving material gifts to children is a way of expressing love and affection (Richins & Chaplin, 2015).

Regardless of how parenting dimensions and styles are associated, a key feature of the analysis of parenting dimensions—and a central aim of this study—is how they can differently relate to parental class and child development. That is, parenting dimensions offer a greater specificity than styles, and in this way, its analysis can help researchers to better understand the social stratification of parenting and child development (Smetana, 2017). For example, it can be that inductive reasoning is socially stratified, but it does not affect (or affect negatively) child development. Therefore, we could not conclude that reasoning is a key channel in the intergenerational transmission of advantage. It is not surprising that more specific domains of parenting explain more variation in child development (Rothenberg et al., 2019) than more aggregate construct of parenting (Bodovski & Farkas, 2008).

LSAC data intentionally included measures of parenting practices and dimensions (and not direct measures of styles) to allow researchers the possibility to use any of the three layers: practices, dimensions or styles. To ensure confidence in LSAC self-reported parenting measures, Zubrick, Lucas, Westrupp, and Nicholson (2014: 13) conducted an in-depth psychometric study where they determined (a) the psychometric properties of each parenting measure, (b) possible bias introduced via children's developmental changes across waves, or (c) the extent to which the items used to measure particular dimensions of parenting are reliable indicators of that construct. They also developed recommendations on the optimal use of LSAC parenting measures that we follow in this study. Table A1 in Appendix A presents a detailed list of the specific practices included in each of the dimensions analysed here. Next, we review previous studies on the topic to develop testable hypotheses on the relationships between social class, parenting and child development.

### 2.1. Dimensions of parenting and child development

This study analyses two broad types of skills typically measured in previous studies of parental practices and intergenerational transmission of advantage: cognitive skills and behavioural problems. Cognitive skills are the set of abilities associated with learning and problem solving. Children with well-developed cognitive skills have a good command of memory, speed of thought and well-coordinated psychomotor, verbal and spatial abilities. On the other hand, when children experience behavioural problems, they typically show a lack of emotional maturity, empathy, motivation, kindness, mental well-being or concentration, and have constant or repeated fears, worries, headaches and difficulties in enabling strong friendships or human connections (Farkas, 2003). Behavioural problems, in addition to cognitive skills, strongly influence educational (DiPrete & Jennings, 2012) and labour market outcomes (Hall & Farkas, 2011). Previous research in sociology, economics and developmental psychology shows different pathways through which parenting dimensions affect children's cognitive outcomes and behavioural problems.

*Inductive reasoning* is arguably the most-studied parenting dimension within the sociological literature. Lareau (2011) shows inductive reasoning is both more typical among upper-class families and offers children a formidable advantage through different interactions. For one thing, children exposed to greater doses of inductive reasoning have the chance, after being corrected, to discuss *why* with their parents. That offers children the opportunity at home to learn negotiation skills and tools of communication that are rewarded in other institutions, like schools (Han, 2021). Examples of specific tools are the ability to defend their own decisions over individual preferences and tastes, articulate coherent arguments in support of their cultural orientations and engage in conversations on a variety of topics with other agents outside the home, such as teachers (Denham & Brown, 2011). Therefore, positive parent-child encounters that display inductive reasoning should improve cognitive outcomes in children.

Previous studies also find that *parenting consistency* is another dimension of parenting having (Ermisch, 2008) powerful returns in education and the labour market. Based on data from the Millennium Cohort Study, Ermisch (2008) finds an association between parental discipline<sup>1</sup> and fewer behavioural problems in children, suggesting that parental discipline represents a relevant channel through which advantage is intergenerationally transmitted (see also Kiernan and Huerta (2008)). *Parenting consistency* gives children means to behave in a structured manner in their everyday lives. Details like punctuality or table manners represent the sort of behaviours that pay off outside of the home (Bourdieu & Passeron, 1977). Overall, developmental psychology highlights how consistent parenting is key to boosting children's trust in themselves, their parents and others. Trusting children develop a strong *sense of security* (Holmes, 1993). Consistent parenting also includes *responsiveness* – that is, parents with greater effective discipline adapt

their interactions based on the child's needs, status and developmental stage (Kalil et al., 2012).

Therefore, high levels of parental consistency may offer children a wide set of tools to feel confident in their knowledge of the structure of power inside and outside of the home (i.e., parents-children; teachers-students; employer-employee), and behave in accordance to them. Importantly, it also gives them the ability to know *how* to challenge someone's authority and *when* it is appropriate to do so (Lareau, 2011). Thus, parental consistency may reduce children's behavioural problems by structuring and making actions routine, which has been found to boost emotional stability (Moullin, Waldfogel, & Washbrook, 2014). Importantly, increases in emotional stability and well-being have been found to also lead to improvements of cognitive outcomes, as *skills beget skills* (Heckman & Mosso, 2014). Following these arguments, we expect the following:

**Hypothesis 1.** Parental inductive reasoning and parenting consistency are conducive to better cognitive outcomes and fewer behavioural problems in children

*Warmth* and *anger* are two sides of the same coin and they are dimensions of parenting shown by psychologists and economists to be at the core of the production of children's non-cognitive skills. Conger, Conger, and Martin (2010) found that children exposed to angry parenting may see their socio-emotional development threatened by the lack of attention and parent-child connection. Conversely, children in households where the emotional climate is characterized by warm encounters (and lack of anger) may experience a decrease in the risk of internalizing (e.g., symptoms of depression and anxiety) and externalizing behaviour (e.g., problems of conduct and hyperactivity) (Fiorini & Keane, 2014). Altogether, this line of argumentation leads us to argue that:

**Hypothesis 2.** Parental warmth and anger will strongly influence children's behavioural problems and their effects will be positive and negative, respectively

### 2.2. Social class and dimensions of parenting

The link between class and parenting has been a topic of recurrence in sociology since the seminal works of Kohn (1963) and Hochschild (1979), until more recent studies (e.g., Barbata-Viñas & Cano, 2017; Baker & Barg, 2019; Flaquer, Cano, & Barbata, 2020). In this section, we review previous studies and theoretical approaches to develop testable hypotheses about who is more prone to focus in which dimension of parenting.

Hochschild (1979) argued that the way in which parents express and suppress their emotions is in relation with culturally defined rules of feeling. She concludes that each social class, through the capacity in modulating the management of their emotions, "prepares its children to psychologically reproduce the class structure" (1979: 551). The work of Conger shows that the capacity to modulate parental emotions—e.g., anger, warmth—depends upon family income. For Conger and colleagues, the mediating factor connecting income and emotions is *stress* (Conger et al., 2010). The logic of this theoretical approach is straightforward: because lower-class parents have low and intermittent income, they face more stress, a type of emotional pressure that typically leads to psychological, and even physical, pain. Stress is coming from several sources, like living in poor neighbourhoods with greater exposure to violence which, ultimately, have negative consequences over body and mind, like anxiety or headaches. Neuroendocrinologists labelled this process as *allostatic load* (i.e., physiological effects of repeated exposure to acute stress) (McEwen, 2005). Therefore, reduced physical strength and brain's cognitive capacity due to stress leads to increased marital conflict and declines in parent-child attachment via angry parenting (for reviews, see Bradley & Corwyn, 2002; Masarik & Conger, 2017).

Although the theory of Conger et al. (2010) predicts significant and

relatively strong associations between social class and parental emotional investments on their children, empirical studies show mixed results. While some studies find weak associations between social class and parental emotions like warmth (Davis et al., 2001; Davis-Kean, 2005), others report no associations (Chan & Koo, 2011; Dodge, Pettit, & Bates, 1994). There are also studies reporting *negative* associations (Guo & Harris, 2000; Yeung, Linver, & Brooks-Gunn, 2002). Based on these postulates, we expect the following:

**Hypothesis 3.** Lower-class parents will display less warmth and more anger than upper-class parents. These associations will be statistically significant but substantially irrelevant

The classic work of Kohn (1963) linking class and parenting focused more on parental values rather than parenting dimensions, like inductive reasoning and parenting consistency. The key mechanism Kohn showed to link class and parental values was the role of work. He argued that upper-class parents have more responsibility and freedom at work, which implies the need of *self-direction*, a type of value these parents would cultivate in their children. Self-direction, typically found in upper-class individuals (Kohn & Schooler, 1969; Schooler & Schoenbach, 1994), is a concept tied to *parenting consistency*—we might assume that one needs high doses of consistency and control to be self-directed.

A more recent study qualitatively examining the relationship between class and parenting is found in Lareau (2011). This work is useful to understand why and how class impacts parenting. Her main argumentation is that upper-class parents have more resources (e.g., income, education or power over time) that they use to strategically invest on their children. These parents do so to promote in their children a type of development with greater educational returns, and to avoid downward social mobility (e.g., Breen & Goldthrope, 1997). As noted above, the types of investments upper-class parents use are wide and can range from structuring time around cognitive stimulating activities to display high doses of inductive reasoning, or being consistent in their discipline practices. Lareau (2011) labelled this style of educating children, “concerted cultivation”.

Previous studies mostly focused on dimensions like parents’ school monitoring, time in cognitively monitoring activities, attending to organised leisure or extracurricular activities (Cano, 2019; Hsin & Felfe, 2014; Kalil et al., 2012; Meier Jæger & Breen, 2016). To our knowledge, no study quantitatively assessed the relationship between social class and parenting dimensions like consistency or reasoning. Therefore, we base our following hypothesis in previous theoretical argumentations and related-type parenting dimensions:

**Hypothesis 4.** Social class will show a positive, significant, and substantial association with parenting consistency and inductive reasoning

### 3. Data & methods

This study uses data from *Growing Up in Australia: The Longitudinal Study of Australian Children* (LSAC). The LSAC is a biannual birth-cohort study that has collected information on Australian children and their families since 2004 that includes face-to-face interviews and questionnaires from the study child, their parents and a teacher or care-giver. The LSAC follows two cohorts of children: one born March 1999–February 2000 (4983 children) and one born March 2003–February 2004 (5107 children). These cohorts are called the “Kindergarten cohort” (K) and the “Birth cohort” (B), respectively. For further details on the study’s methodology, please refer to Australian Institute of Family Studies (2015). As noted above, one of the great advantages of the LSAC is that it provides extensive information about child-parent interactions, including longitudinal measures of parenting dimensions.

This study only considers the first three waves of the K cohort, when the children are four (wave 1), six (wave 2) and eight years old (wave 3). We selected these waves and cohort due to several reasons. First, these

ages are when children’s skills are more malleable by parents (Heckman & Mosso, 2014). Second, waves 1–3 of the K cohort provide the same tests scores to measure children’s cognitive development and behavioural problems, together with measures of multiple parenting dimensions. Third, this age represents a developmental stage when every dimension is applicable (e.g., inductive reasoning is not applicable at age 0–1). After excluding children with missing information in the variables included in the analyses, the final sample includes 8680 observations from 3940 children.

#### 3.1. Social class

Social class is measured using maternal level of education, which was divided into two categories (University degree and below University degree). Using education as a proxy for social class is consistent with prior qualitative research on class and parenting (Calarco, 2018; Barbeta-Viñas & Cano, 2017). This body of research has generally identified educational attainment (and especially the attainment of a bachelor’s degree) as a key dividing line in styles of parenting. Testing differences in parenting by education level may also better account for differences in the behaviour of parents who are not in the workforce (e.g., stay-at-home and unemployed parents). For example, in our sample, 30 % of mothers are not in the labour force, making variables like income or occupation coarse measures of social class.

#### 3.2. Dimensions of parenting

We use four dimensions of parenting reported by mothers: inductive reasoning, parenting consistency, warmth and anger. Paterson and Sanson (1999) developed the items used to measure reasoning, warmth and anger in the LSAC. The items measuring parenting consistency were inspired by those previously included in the National Longitudinal Study of Children & Youth in Canada (Statistics Canada, 2000). The LSAC variables are used to measure the four dimensions of parenting, which are created by calculating the mean of items that reflect each distinct dimension (for the specific items included in each dimension, see Table A1 in the Appendix A). Responses to every question were given on a five-point Likert scale, ranging from 1 = “never/almost never” to 5 = “all the time”. The final four dimensions have the same five-point scale. For more information about the measurement of the dimensions of parenting as included in LSAC, see Zubrick et al. (2014).

Focusing on measures of dimensions instead of styles has at least two advantages. First, this approach uses all of the existing data and it can examine the independent effects of each of the parenting dimensions (Power, 2013). Second, it maximizes conceptual clarity and can assess a broad range of parenting constructs (Zubrick et al., 2014). Using these four dimensions of parenting as independent variables in regression models may result in multicollinearity. However, this was not a problem, as Pearson’s correlation coefficients were all below 0.5 (see Table A3, Appendix A).

#### 3.3. Children’s cognitive outcomes and behavioural problems

Cognitive outcomes are measured using a short version of the Peabody Picture Vocabulary Test, version three (PPVT-III) administered by a survey interviewer. The PPVT-III is a validated and common psychometric test that measures children’s knowledge of the meaning of spoken words and their receptive vocabulary (Dunn & Dunn, 1997). The test involves an examiner presenting the child with four images, together with a word that describes one of these images. The examiner then asks the child to identify the appropriate image. The complexity of the words and images varies with age to match the test’s difficulty with children’s developmental stages. PPVT-III scores range from 0 to 100, where higher scores denote higher cognitive ability.

Children’s behavioural problems are captured using the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997). This is a



**Table 1**  
Descriptive statistics, pooled sample.

	Mean/ %	SD	Min.	Max.
<i>Parenting dimensions, mother's reports</i>				
Inductive reasoning	4.21	0.63	1.00	5.00
Parenting consistency	4.24	0.59	1.00	5.00
Warmth	4.41	0.49	1.33	5.00
Anger	2.15	0.58	1.00	4.50
<i>Child's PPVT and SDQ tests, mother's reports</i>				
Peabody Picture Vocabulary Test	72.69	7.80	34.18	96.98
Strength and Difficulties Questionnaire	7.65	4.97	0	33
<i>Social Class</i>				
Mother has University degree	34 %			
Mother has post-secondary education	50 %			
Mother did not complete secondary education	16 %			
<i>Basic Controls</i>				
Child's age (in months)	74.67	20.00	50.00	114.00
Child is female	49 %			
<i>Extended Controls</i>				
Father is manager	34.61 %			
Child lives with two biological parents	86.73 %			
Child speaks English at home	92 %			
At least one other child in household	42 %			
Child is indigenous	1 %			
Child had low birth weight	5 %			

Notes: Longitudinal Study of Australian Children. K Cohort, waves 1–3.

well-established measure commonly used in previous studies (e.g., Kiernan & Mensah, 2009). The version of the SDQ included in the LSAC consists of 25 questions about typical behaviours displayed by the child over the preceding six months, grouped into five domains: (i) hyperactivity, (ii) emotional symptoms, (iii) conduct problems, (iv) peer problems and (v) pro-social behaviour. Possible responses to each item are [0] “not true”, [1] “somewhat true” and [2] “certainly true”. Children’s functioning in each of the five domains is aggregated by adding up the scores in each of the five items. The overall SDQ index is calculated by summing scores in all five domains – it ranges from 0 (best outcome) to 35 (worst outcome). Table A2 in the Appendix A shows the specific items measured in each of the five domains.

### 3.4. Control variables

Regression models included a set of control variables commonly used in studies of social reproduction and child development. Control variables included child’s sex (male/female), ethnicity (whether English is the language spoken at home), whether the child is indigenous (yes/no), whether the child had low birth weight (below 2.5 kg/2.5 kg or more) and age (in months). The analysis also controls for family characteristics, such as whether the child was living with two biological parents (yes/no), the presence of a siblings at home (yes/no) and father’s social class (whether he is manager with high skill level or not). We use father’s occupation instead of father’s education because the latter variable has a huge proportion of missing observations—nearly 900). Table 1 shows descriptive statistics for all variables included in the analyses.

### 3.5. Analytical strategy

One of the main advantages of LSAC data is the richness of information and its panel structure. Panel regression models and a wide set of covariates that could confound the estimates of interest are used to exploit this. It is worth noting that biases coming from reverse causality in the estimated parameters testing Hypotheses 3 and 4 range from very low to non-existent, since education may affect parenting, but the reverse is rarely true. Reverse causality is, however, the source of endogeneity that may bias the estimation of Hypotheses 1 and 2, a type of hypotheses that implies the following endogenous question: Do

warmer parents raise better-developed children or do better-developed children make parents warmer? The Generalized Methods of Moments (GMM) is used to address this issue (see Arellano & Bond, 1991 for specification; and Roodman, 2009 for implementation). GMM exploits the longitudinal nature of the dataset, controlling for sources of bias coming from unobserved heterogeneity. The main advantage of this method is that it treats the dependent variable dynamically, which takes into account that (a) parental investment at time  $t$  increases the return on investment at time  $t + 1$ , and (b) past levels of children’s skills causally affect the current value (i.e. *path dependency* in skill accumulation (DiPrete & Eirich, 2006) or *dynamic complementarity*, in the terminology of Heckman and Mosso (2014)). Stata’s ado ‘xtabond2’ (Roodman, 2009) estimates the following equation:

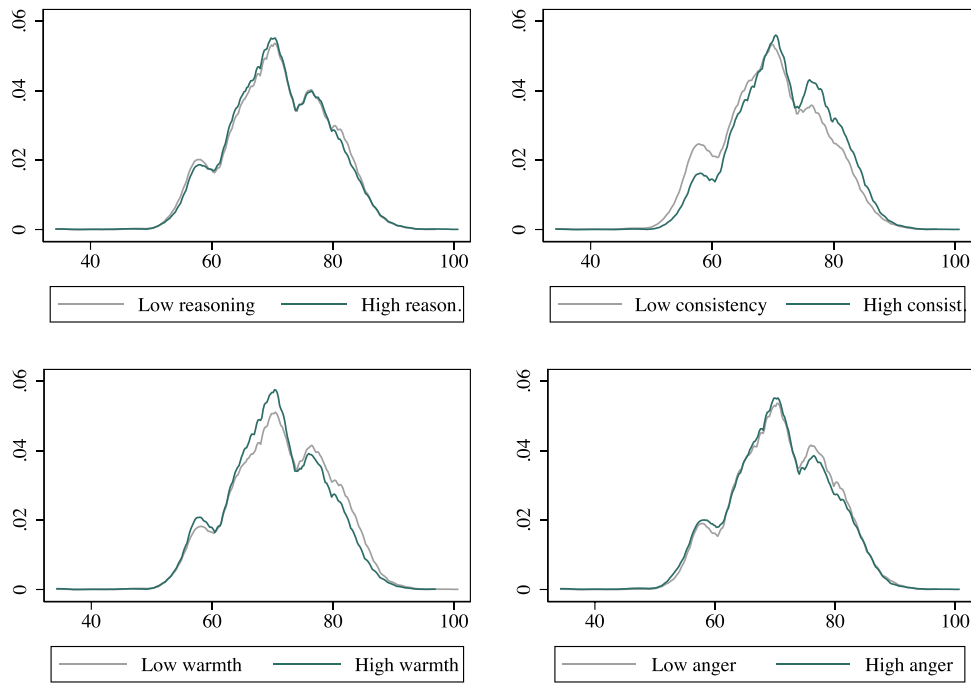
$$S_{it} = \beta_0 S_{i(t-1)} + \beta_1 DP_{it} + \beta_3 SC_{it} + \beta_4 X_{it} + \beta_5 CH_{it} + T + \delta_i + e_{it} \quad (1)$$

where  $S$  is the child’s skill (i.e. cognition and behavioural problems) at time  $t$ , which depends on the level of skill at time  $t-1$  (i.e.  $\beta_0$ , which corresponds with wave 2 when children are 6 years old);  $\delta$  is a child-specific effect that indexes time-invariant unobserved dispositions that may affect the child’s skill and parents’ investment (i.e. fixed effects);  $T$  indexes dummy variables for the three time periods covered in the data;  $\beta_1$  is the primary coefficient of interest to be estimated as it corresponds to the effect of the parenting dimensions on child development;  $SC$  captures parental social class;  $X$  is a vector of sociodemographic variables including number of siblings, family structure, whether the child is indigenous, and the language spoken at home;  $CH$  addresses specific indicators of a child’s development that might affect  $D$ , including sex, low birth weight, and age. The standard errors are adjusted for the clustering of observations within children.

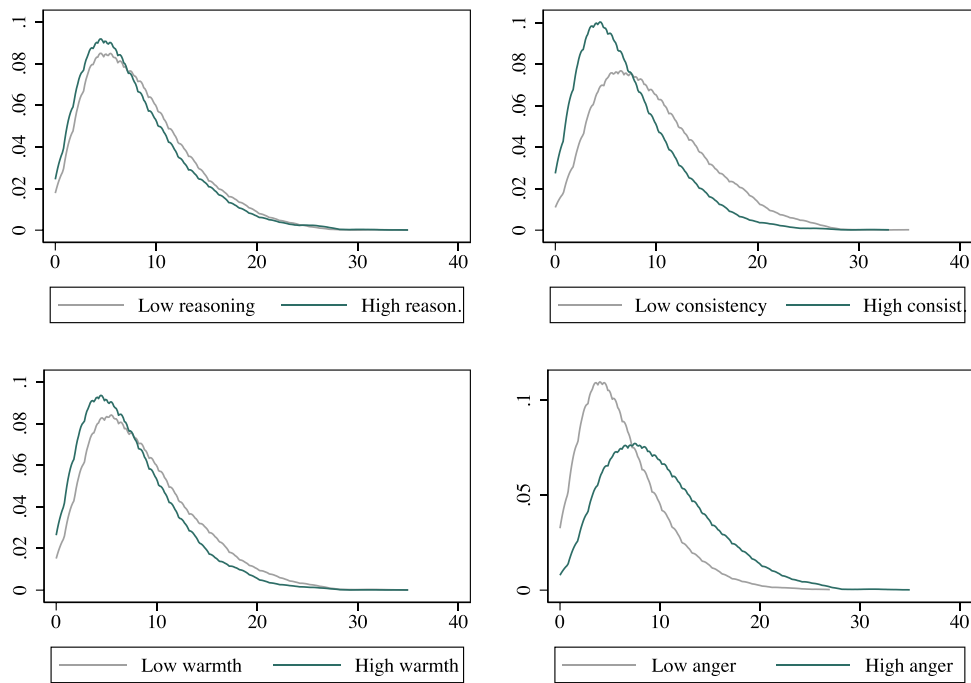
Testing Hypotheses 3 and 4 (i.e., the effect of education on parenting dimensions) also presents some methodological challenges. Commonly used modelling approaches in the literature (i.e., fixed and random effect models) are not suitable in testing these two hypotheses. Fixed effect models provide less biased estimates than random-effect models, but they focus on within-individual changes, and within variation in level of education in our data is nearly zero. Random effect models could be fruitful as they provide estimates of between effects, but they can provide biased estimates since they rest on the strong assumption that individual unobserved time-invariant factors are uncorrelated with measured variables. Therefore, we test Hypotheses 3 and 4 using hybrid models, a type of modelling that solves both issues: they provide between estimates for all variables, and without the assumption of random-effect models (Allison, 2009). The estimate of the effect of education on parenting dimensions using hybrid models takes the following form:

$$DP_{it} = \beta X_{jit} + \gamma^{WE} Z_{jt}^{WE} + \gamma^{BE} Z_j^{BE} + \eta_j + e_{jt} \quad (2)$$

where  $DP$  are the dimensions of parenting,  $i$  indexes mothers ( $i = 1, \dots, N$ ),  $t$  indexes time ( $t = 2004, 2008$  and  $2010$ );  $X$  is a vector of sociodemographic time-invariant variables including gender, whether the child was born with low weight or is indigenous, or whether the child speaks English at home;  $Z$ -variables are those time-varying factors like parents’ social class, age, number of siblings and family structure. These variables are decomposed into two components: *within effect*, which is represented with notation  $Z_{jt}^{WE}$ ; and *between effect*, represented with  $Z_j^{BE}$ . The latter effect (i.e., between) is derived by removing the between-case variance from  $Z_{jt}$  ( $Z_{jt}^{WE} = Z_{jt} - \bar{Z}_j$ ). This is also known as ‘fixed effects’. The vector  $\gamma^{WE}$  indexes the within effects. In line with this, the  $Z_j^{BE}$  refers to the between effects of the variables noted above, being the  $\gamma^{BE}$  the vector indexing the between-effects coefficients.  $\eta$  is the person-specific intercept (i.e. the random effect);  $e$  is the typical error term (i.e. “luck”). For a detailed discussion of this method and its Stata command ‘xthybrid’, which is used in this study, see Schunck and Perales (2017). The results produced by the hybrid models are unbiased estimates of the effect of education on dimensions of parenting.



**Fig. 1.** Child Cognitive Outcomes (PPVT) by Mother-reported Parenting Dimensions.  
 Notes: Longitudinal Study of Australian Children, K cohort, waves 1–3 (pooled sample).



**Fig. 2.** Child Behavioural Problems (SDQ) by Mother-reported Parenting Dimensions.  
 Notes: Longitudinal Study of Australian Children, K cohort, waves 1–3 (pooled sample).

**4. Results**

**4.1. Descriptive results**

Figs. 1 and 2 show descriptive results related to Hypotheses 1 and 2. These figures graphically present the bivariate association between the multiple dimensions of parenting and cognitive outcomes and behavioural problems in children. The graphs are kernel density plots showing

the distribution of PPVT (Fig. 1) and SDQ (Fig. 2) by the four parenting dimensions. “Low” and “high” are defined as being either below or above the respective mean. For example, a child that is exposed to “low anger” means that their mother ranked below 50 % of the anger distribution.

For cognitive outcomes (Fig. 1), differences by dimensions of parenting are minimal and only appreciable in the case of parenting consistency and, very slightly, in warmth. On the contrary, differences in

**Table 2**  
Distribution of mother-reported parenting dimensions by class (mother's level of education), pooled sample.

	Inductive Reasoning	Parenting consistency	Warmth	Anger	N
University degree	4.27	4.31	4.36	2.15	2983
Post-secondary	4.20	4.17	4.42	2.16	4343
Incomplete secondary	4.13	4.04	4.40	2.18	1349

Notes: Longitudinal Study of Australian Children, K cohort, waves 1–3.

**Table 3**  
GMM regressions of mother-reported dimensions of parenting and children's PPVT (cognitive outcomes) and SDQ (behavioral problems).

	PPVT (Cognitive outcomes)		SDQ (Behavioural problems)	
	$\beta$	SE	$\beta$	SE
<i>Dimensions of parenting (Mother's reports)</i>				
Inductive reasoning	-0.055	0.119	0.247**	0.093
Parenting consistency	0.295**	0.141	-0.517***	0.119
Warmth	-0.156	0.167	-0.357*	0.149
Anger	-0.068	0.140	2.044***	0.151
<i>Controls</i>				
Age (in months)	0.195***	0.020	0.036*	0.016
Child is female	-0.556***	0.116	-0.899***	0.106
Child is Indigenous	-0.839**	0.308	0.724*	0.317
Child has siblings at home	-0.739***	0.118	-0.376***	0.097
Child had low birth weight	-0.738**	0.235	0.476*	0.225
Child speaks English at home	1.324***	0.228	0.051	0.164
Mother has University degree	1.280***	0.140	-0.595***	0.116
Father is Manager	0.918***	0.128	-0.562***	0.107
Two biological parents	0.321*	0.040	-1.166***	0.147
Lag of PPVT/SDQ	0.232***	0.043	0.348***	0.046
Controls	Yes		Yes	
N	4202		4446	

Notes: Longitudinal Study of Australian Children, K cohort, waves 1–3. All models control for a set of covariates including parents' social class, family structure, child's age, sex, ethnicity, weight at birth, and whether English is the language spoken at home. Significance levels: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

behavioural problems by parenting dimensions were exceptionally salient (Fig. 2). Children whose parents display high consistency had fewer behavioural problems on average, while children whose parents display high levels of anger showed exceptionally high levels of behavioural problems. This is coherent with Darling and Steinberg, who argue that “depending on the specific developmental outcome of interest, different parenting practices would be more or less important” (1993: 493).

Table 2 shows descriptive results for the dimensions of parenting disaggregated by parent's class (Hypotheses 3 and 4). The biggest difference by class was found in consistency. In this dimension, mothers with University degree showed an average of 4.31, while those with incomplete secondary averaged at 4.04. Table 2 also shows a decreasing level of inductive reasoning by social class (e.g., University degree: 4.27; incomplete secondary: 4.14). For the case of those dimensions that more directly address parental emotional investments (i.e., warmth and anger), descriptive results tell a different story. For warmth, the educational gradient turned negative: the less education, the warmer the mother was. For anger there were no class differences. Except for anger, all differences were statistically significant at the 95 % confidence level.

#### 4.2. The effect of parenting dimensions on child cognitive outcomes and behavioural problems

A first set of regressions (Table 3) estimated the effect of mother-reported dimensions of parenting on children's cognitive outcomes and behavioural problems, using Generalized Methods of Moments (GMM). GMM captures the dynamic nature of child development and parenting reactions to how children grow up by conditioning the current estimate of the dependent variables to previous cognitive outcomes and behavioural problems, as well as parents' previous investments. All models relate to three parent and child observation points, when the child is aged 4, 6 and 8.

The results shown in Table 3 are generally in line with Hypotheses 1 and 2. They yielded evidence of productivity hierarchies by dimension of parenting and type of outcome. For child behavioural problems, the largest associations were found in anger ( $\beta = 2.044$ ;  $p < 0.001$ ), followed by parenting consistency ( $\beta = -0.517$ ;  $p < 0.001$ ), warmth ( $\beta = -0.357$ ;  $p < 0.05$ ) and, latest, inductive reasoning (0.247;  $p < 0.01$ ).

Cognitive outcomes, on the contrary, showed very small and statistically insignificant associations with the analysed dimensions of parenting, with one exception: parenting consistency. The effect of mother-reported measures of parenting consistency on a child's cognition showed statistically positive significant results (0.295;  $p < 0.05$ ). Warmth, anger and inductive reasoning did not have any significant or substantial effect on child cognitive outcomes.

Control variables also showed interesting differences on what is relevant for children's skills development. For example, being the only child (i.e., no siblings) led to a significant increase in cognitive outcomes, but a decline in emotional stability (i.e., an increase in behavioural problems). Family structure (living with two biological parents) appeared as the substantially largest, statistically significant predictor of behavioural problems (besides anger), but its effect was modest in predicting cognitive outcomes.

#### 4.3. The effect of class on parenting dimensions

Table 4 presents results from panel regression models estimating the effect of social class (i.e., level of education of the mother) on the multiple mother-reported parenting dimensions. In this table, two sets of regressions are presented: above (Panel A) with basic controls and, below (Panel B), with extended controls. The estimated coefficients from hybrid models in Table 4 show both within and between effects of class on parenting dimensions. Since, in our data, education barely varies within individuals, our main estimates to be interpreted are those from between effects (i.e., differences in parenting dimensions between upper and lower-class mothers). For a discussion on the interpretations of between and within effects, see Snijders and Berkhof (2008) or Wooldridge (2010).

Looking at Panel B of Table 4 (i.e., model with all control variables) we see that class had a positive and significant effect mainly on parenting dimensions like parenting consistency and inductive reasoning, not so in more emotion-type parenting dimensions (i.e., warmth and anger). The lower the class, the less discipline and reasoning parents required. For the case of parenting consistency, mothers with University degree were 0.155 more consistent on the five-point scale ( $p < 0.001$ ) than University-educated parents. For the case of inductive reasoning, those with University degree displayed 0.094 more than those without ( $p < 0.001$ ). Finally, for warmth, the educational gradient turned from positive to negative, with mothers without University degree showing a significantly warmer attachment (0.059) to their children, compared to those with University degree ( $p < 0.01$ ). Class differences in anger were negligible and statistically insignificant. Control variables were in line with expectations and will not be

**Table 4**  
Regression Models of Class and Parenting Dimensions.

	Inductive Reasoning		Parenting consistency		Warmth		Anger	
	$\beta$	SE	$\beta$	SE	$\beta$	SE	$\beta$	SE
<i>Panel A</i>								
Mother has University degree (within)	-0.082	0.050	-0.022	0.019	0.021	0.033	-0.000	0.018
Mother has University degree (between)	0.091***	0.016	0.203***	0.017	-0.057**	0.013	-0.021	0.024
<i>Intercept</i>	4.469***	0.080	3.369***	0.083	4.538***	0.020	2.413***	0.074
<i>Basic controls</i>	Yes		Yes		Yes		Yes	
<i>Extended controls</i>	No		No		No		No	
<i>N observations</i>	8680		8680		8680		8680	
<i>Panel B</i>								
	$\beta$	SE	$\beta$	SE	$\beta$	SE	$\beta$	SE
Mother has University degree (within)	-0.083	0.050	-0.021	0.041	0.020	0.033	0.001	0.040
Mother has University degree (between)	0.094***	0.017	0.155***	0.018	-0.059**	0.014	-0.016	0.017
<i>Basic controls</i>								
Child's age in months (within)	-0.002***	0.000	0.001***	0.000	-0.002***	0.000	-0.000	0.000
Child's age in months (between)	-0.001	0.001	0.009***	0.001	-0.002**	0.000	-0.001	0.001
Child is female	-0.023	0.014	-0.013	0.015	0.014	0.012	-0.108	0.014
<i>Extended controls</i>								
Father is manager (within)	0.000	0.020	0.016	0.016	-0.012	0.013	0.006	0.016
Father is manager (between)	-0.003	0.020	0.100***	0.021	-0.052**	0.016	-0.031	0.019
Two biological parents (within)	-0.030	0.036	0.007	0.029	0.005	0.023	-0.041	0.028
Two biological parents (between)	-0.048*	0.020	0.115***	0.022	-0.000	0.017	0.001	0.021
Child is Indigenous	0.016	0.040	-0.238***	0.042	-0.020	0.033	0.094	0.039
Child has siblings (within)	-0.036	0.026	-0.009	0.021	-0.080***	0.017	0.056	0.021
Child has siblings (between)	-0.037*	0.015	-0.025	0.016	-0.091***	0.012	-0.002	0.015
Child had low weight at birth	-0.008	0.029	-0.013	0.031	-0.006	0.024	0.000	0.029
Child speaks English at home	-0.032	0.022	0.287***	0.023	0.021	0.021	-0.101	0.022
<i>Intercept</i>	4.418***	0.080	2.982***	0.081	4.638***	0.062	2.275	0.367
<i>R<sup>2</sup> between</i>								
<i>N observations</i>	8680		8680		8680		8680	

Notes: Longitudinal Study of Australian Children, K cohort, waves 1–3. Models of Panel A include basic controls of child's age and sex. Significance levels: \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ .

discussed further.

These results suggest that there is a statistically significant association between social class and those dimensions addressing parental practices (i.e., parenting consistency and inductive reasoning), as we expected in Hypothesis 4. For those dimensions capturing emotional investments (i.e., warmth and anger), the associations are very small and only appreciable in warmth. Therefore, Hypothesis 3 is not confirmed.

#### 4.4. Sensitivity analyses

To test the robustness of the results presented in the main analyses, we estimated a set of regressions using alternative measurements and specifications (all results are available upon request). First, because SDQ was mother-reported, the results may be subject to social desirability bias and parental subjectivity about assessing their own child. Therefore, similar GMM models were estimated to test Hypotheses 1 and 2 against the results in Table 3, using teacher-reported SDQ ( $N = 3012$  observations), instead of parent-reported SDQ. Results of this sensitivity analysis were similar to those reported in the main analyses. Second, because education is only one dimension of social class, we replicated the analyses of Table 4 using measures of occupation. Results of this sensitivity analysis did not invalidate the main analyses reported here, but they added some nuances. Associations between class and parenting were slightly more statistically significant for education than for occupation, although direction and magnitude of the associations were similar. More importantly, when both variables (i.e., education and occupation) were added simultaneously into the model, level of education absorbed most of the associations between occupation and parenting dimensions. This result suggests that it is parental education what matters for parenting's stratification. Finally, all analyses were replicated using father-reported measures of parenting, with similar results than those of mother-reported measures.

## 5. Discussion and conclusion

This study examined the role of parenting in the intergenerational transmission of (dis)advantage using high-quality longitudinal data. In doing so, it contributes to the literatures on children's skill formation (Chan & Koo, 2011; Ermisch, Jäntti, & Smeeding, 2012; Hsin & Felfe, 2014) and class divides in parental investments in children (Cha & Park, 2020; Cooper, 2020; Kalil et al., 2012; Lareau, 2011; McLanahan, 2004; Meier Jæger & Breen, 2016). We accomplish this by analysing a large sample of children aged 4–8 from the LSAC data (2004–2008), and using a research design that controls for reverse causality and unobserved heterogeneity. Next, we discuss the main findings of the study.

In testing Hypothesis 1 (i.e., parental inductive reasoning and parenting consistency are conducive to better cognitive outcomes and fewer behavioural problems in children), this study finds that the strongest positive effects for cognitive outcomes and behavioural problems in children are driven by parental parenting consistency. Unexpectedly, results show that increasing parental inductive reasoning has no effect for children's cognitive outcomes, and it very slightly increases their behavioural problems. Therefore, Hypothesis 1 is only partially confirmed.

In testing Hypothesis 2 (i.e., parental warmth and anger will strongly influence children's behavioural problems and their effects will be positive and negative, respectively), we find this hypothesis empirically confirmed: warmth and anger are powerful predictors of child (non-cognitive) development. The effect of anger is particularly large and, as expected, negative. Children exposed to parental anger have more behavioural problems (a one-point increase on the five-point scale of mothers' anger results in an increase of 2.5 on the SDQ 35-points scale,  $p < 0.001$ ). However, anger does not affect children's cognitive outcomes. The effect of warmth is also particularly strong, significant and, again, only affecting behavioural problems, but not cognitive outcomes. These results for Hypotheses 1 and 2 are coherent with previous studies



showing how an authoritative parenting style, i.e., high control (reasoning and consistency) and high support (warmth and lack of anger) (Baumrind, 1991) better shapes children's cognitive development and socio-emotional competence.

An important finding of this study is, therefore, that the production function of children's behavioural problems seems to be different from the production function for cognitive skills development. This result highlights the importance of analysing parenting and child development from a multidimensional perspective. Separated constructs and dimensions of parenting differently relate with distinct types of children's skills development. The finding that the dimensions of parenting analysed here mainly shape non-cognition but not so cognitive outcomes is consistent with recent empirical evidence using a research design for causal analysis (Fiorini & Keane, 2014). Therefore, while cognitive outcomes are mainly dependent on the temporal and monetary investments made by parents (Esping-Andersen, 2009, chapter 4), behavioural problems mainly depend on parenting emotions, and parenting consistency.

In testing Hypothesis 3 – that lower-class parents will display less warmth and more anger than upper-class parents – we find no empirical evidence supporting our expectation. Lower-educated mothers appear to develop a slightly warmer attachment with their children than their University-educated counterparts. This pattern of negative association between class and warmth was also found by Guo and Harris (2000), and Yeung et al. (2002). This finding has important theoretical implications, as previous research typically links upper-class with an authoritative style of parenting, which represents greater warmth, and control (here proxied via consistency). However, when we split authoritative style of parenting into its two components (i.e., warmth and control), warmth correlates little, and negatively, with class. Therefore, the positive relationship between class and authoritative style of parenting might not be as straightforward as previously thought. Finally, anger is a dimension of parenting that does not vary by parents' social background.

For the case of our last Hypothesis – that social class will show a positive, significant, and substantial association with parenting consistency and inductive reasoning—our empirical analyses confirm that expectation, particularly for the case of consistent parenting. In this dimension of parenting, we do find class gaps, regardless if the variable used as a proxy for social class was education or occupation. It is worth noting that even for the dimension of parenting that most strongly varies by social class—parenting consistency—the magnitude of the estimated associations is rather small: the difference between University educated parents and those with incomplete secondary is 0.2–0.3 on a five-point scale. This pattern of weak results in parenting differences by social class is consistent with recent evidence in the U.K. (Cooper, 2020), U.S. (Cha & Park, 2020), and Europe (Cano, 2019). Therefore, sizeable class gaps are mostly found in consistency and reasoning, but not so in emotion-type dimensions, where associations are very small, and even negative for the case of warmth.

Coming back to the question ‘what do upper-class parents do at home that give their children better cognitive outcomes and fewer behavioural problems?’, this study uncovers parenting consistency as an important mechanism through which class advantage is intergenerationally transmitted. This type of parenting is based on setting limits, control, and monitoring the child to ensure that parental tasks or corrections have been correctly followed by the child. It is therefore a type of discipline that is neither physical nor intrusive or punitive (Strohschein et al., 2008). To get a sense of the magnitude of these associations, a one-point increase in parental consistency increases the child's PPVT score by a 0.024 standard deviation, and having a mother with University degree increases the PPVT score by a 0.070 standard deviation. Having a University degree leads to an increase in consistency of around 0.2 in the 5-point scale. To our knowledge, this is the first quantitative

longitudinal study simultaneously analysing how this dimension of parenting varies by social class, and how it affects child outcomes. This finding opens relevant questions for future studies to further research.

### 5.1. Limitations and avenues for further research

Despite the high-quality panel cohort data and the refined methods of analysis, this study indeed has limitations that demands future methodological refinement. A key issue in any study of this kind is that social desirability bias may affect the parent-reported metrics of parenting dimensions, and parents may overrate their own involvement and abilities with children, for fear of being judged as a maladapted parent. This might explain the null finding in the relationship between class and anger, as anger is a particularly sensitive dimension of parenting for parents to talk about with an interviewer. However, previous studies using similar measures of parenting that adjusted for social desirability concluded that “results did not differ substantially when statistically controlling for social desirability” (Hardy, Padilla-Walker, & Carlo, 2008: 216). But even though social desirability bias may downward our estimates, we still do find significant class gaps in three out of the four analysed dimensions of parenting. This bias warrant attention that class gaps in parental investments may be larger than showed here. Second, the panel structure of the data over-represents upper-class parents, largely leaving out families in economic hardship and with strong welfare dependency: (e.g., only 2 % of mothers in the sample were unemployed). Although this is of concern, this study aims to analyse class differences in parenting and their effects on child skill development, rather than focus on the effect of stressors due to critical life events like unemployment. In addition, although not identical, the main conclusions of this study remain similar when replicating analyses using other proxies for social class (i.e., occupation). Third, the Arellano-Bond models used to test Hypotheses 1 and 2 need at least three waves of observed data for each individual, since child cognitive outcomes and behavioural problems are estimated as a function of the lagged child outcomes, which are themselves instrumented by its lagged value. This is problematic because it reduces the sample size leading to a possible imprecision in the estimated coefficients. Therefore, we also estimated Hypotheses 1 and 2 using cross-lagged panel models (Leszczensky & Wolbring, 2019), a type of analysis useful when dealing with reverse causality and that has less restrictions over number of needed waves for the analysis. Results of cross-lagged panel models showed similar findings than those reported in our main analysis and they are available upon request. Finally, the instrument measuring behavioural problems (SDQ) is mother-reported, which may introduce measurement error in our estimates, since parents tend to judge their children more subjectively than other agents do. To overcome this issue, the regressions testing the relationship between parenting and child behavioural problems were replicated using a teacher-reported version of the SDQ. Results of this sensitivity test did not differ from those reported in this study.

There are several relevant topics for that future studies might consider to focus on. First, to possibly refine measures of parenting dimensions via three options: (i) directly observed parent-child interactions (e.g., video recording), (ii) physiological indicators measuring emotional levels (Koelstra et al., 2011), and/or (iii) collecting multiple measures from parents as well as children, teachers, or other family members. Second, this study particularly stressed the analysis of the different effects of multiple parenting dimensions across two distinct types of child outcomes (cognitive development and behavioural problems). But we only used a single indicator for parental class—level of education. Therefore, analysis of possible effects of different indicators of parental SES or class (e.g., occupation, income) across different types of parenting dimensions represent a promising avenue for future

research in social stratification, since each indicator of class might affect each parenting dimensions differently. Third, future studies might consider focusing on parents' gender and look at whether mothers and fathers significantly differ in each of the parenting dimensions, and if so, how. Finally, in this study we neglected the role of changing dynamics of SES or parenting across the life course. A key avenue for future research and further refinement of this study is represented by the analysis of class, parenting, and child development dynamically (i.e., a trajectory-based approach).

### 6. Conclusion

Altogether, this study concludes that there are no class differences in anger, small differences in warmth and inductive reasoning, and a sizeable class divide in parenting consistency, a parenting dimension that has a significant positive effect on both children's cognitive and non-cognitive outcomes. Therefore, parenting consistency appears as a relevant dimension of parenting that transmits intergenerational advantage. In addition, children's cognitive and non-cognitive productions functions are sensitive to different types of parenting dimensions. Children's cognitive outcomes are not related to parental emotions, while children's non-cognitive development is dramatically impacted by these same parental emotions. Finally, this research shows some evidence that children from lower-class households are comparatively disadvantaged in their development, not because they are exposed to more anger or less warmth, but because children of the upper-class are exposed to greater consistency and reasoning, a proxy for structuration, control or discipline (Lareau, 2011: 202). These findings contribute to an important scholarly debate on parenting and the social reproduction of inequality.

### Note

<sup>i</sup>Ermisch (2008) calls "parenting style" one of six factors used to index family "structuration" (i.e. whether there are many rules at home, meals are served at the same hour every day and bedtimes are fixed). This represents a construct similar to "parenting consistency". The other measures he used were reading to the child, other educational activities and taking children to libraries.

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### Appendix A

**Table A1**  
List of items included in each of the parenting's dimensions.

Dimensions of parenting	Questions
Inductive reasoning	1. Talking it over and reason with this child when he/she misbehaved? 2. Explain to this child why he/she was being corrected?
Parenting consistency	1. When you give this child an instruction or make a request to do something, how often do you make sure that he/she does it? 2. If you tell this child he/she will get punished if he/she doesn't stop doing something, and he/she keeps doing it, how often will you punish him/her? 3. How often does this child get away with things that you feel should have been punished? 4. How often is this child able to get out of punishment when he/she really sets his/her mind to it? (reverse coded) 5. When you discipline this child, how often does he/she ignore the punishment? (reverse coded)
Warmth	1. How often do you express affection by hugging, kissing and holding this child? 2. How often do you hug or hold this child for no particular reason? 3. How often do you tell this child how happy he/she makes you? 4. How often do you have warm, close times together with this child? 5. How often do you enjoy doing things with this child? 6. How often do you feel close to this child both when he/she is happy and when he/she is upset?
Anger	1. Of all the times you talk to this child about his/her behaviour, how often is this praise? (reverse scored) 2. Of all the times you talk to this child about his/her behaviour, how often is this disapproval? 3. How often are you angry when you punish this child? 4. How often do you feel you are having problems managing this child in general?

**Table A2**  
Mother-reported Strength and Difficulties Questionnaire.

	Items included
Hyperactivity	(i) restless, overactive, cannot stay still for long; (ii) constantly fidgeting or squirming; (iii) easily distracted, concentration wanders; (iv) can stop and think things out before acting; (v) sees tasks through to the end, good attention span.
Emotional symptoms	(i) often complains of headaches, stomach aches or sickness; (ii) many worries, often seems worried; (iii) often unhappy, down-hearted or tearful; (iv) nervous or clingy in new situations, easily loses confidence; (v) many fears, easily scared.
Conduct problems	(i) often has temper tantrums or hot tempers; (ii) generally obedient, usually does what adults request; (iii) often fights with other children or bullies them; (iv) often argumentative with adults; (v) can be spiteful to others.
Peer problems	(i) rather solitary, tends to play alone; (ii) has at least one good friend; (iii) generally liked by other children; (iv) picked on or bullied by other children; (v) gets on better with adults than with other children.
Pro-social behaviour	(i) considerate of other people's feelings; (ii) shares readily with other children (treats, toys, pencils etc.); (iii) helpful if someone is hurt, upset or feeling ill; (iv) kind to younger children; (v) often volunteers to help others (parents, teachers, other children).

**Table A3**  
Correlations Between Independent Variables.

Mother-reported dimensions of parenting	(1)	(2)	(3)	(4)
Inductive reasoning (1)	1.00	0.22	0.44	-0.14
Parenting consistency (2)		1.00	0.14	-0.30
Warmth (3)			1.00	-0.39
Anger (4)				1.00

Source: Longitudinal Study of Australian Children. K Cohort, Waves 1-3.

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