Published in final edited form as:

J Child Fam Stud. 2019 July ; 28(7): 1878–1885. doi:10.1007/s10826-019-01411-x.

Positive Parenting Moderates the Effect of Socioeconomic Status on Executive Functioning: A Three-Generation Approach

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Abstract

Objective: While low parental socioeconomic status (SES) has been associated with lower levels of child executive functioning (EF), few have examined the intergenerational effect of SES on child EF across three generations. We adopt a resilience framework to investigate positive parenting as a protective factor in the intergenerational effect of low SES on child EF.

Methods: In a sample of 50 parents (70% female) and their oldest child (56% female, $M_{age} = 12.38$) from the Flint Adolescent Study, we estimated the effect of grandparent SES on child EF (i.e., Animal Sorting, Inhibition, Inhibition Switching) and examined the protective role of positive parenting using a multivariate regression model.

Results: Lower levels of grandparent SES was associated with lower levels of cognitive flexibility (i.e., Animal Sorting), but not inhibition (i.e., Inhibition, Inhibition Switching), at low levels of positive parenting.

Conclusion: These findings indicate the varied ways by which intergenerational SES may shape child EF. Further, positive parenting may offset the intergenerational influence of SES on child EF outcomes.

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Author Contributions: DBL designed and executed the study, conducted the data analyses, and wrote the initial draft of the manuscript. SA, ALM, and HFH collaborated with the design of the study and writing of subsequent drafts of the manuscript. JH and MAZ collaborated in the writing and editing of the final manuscript. All authors approved the manuscript as submitted.

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Conflict of Interest: All authors of this manuscript declare that they have no conflict of interest.

Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the University of Michigan's institutional review board and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent: Informed consent was obtained from all individual participants included in the study.

Keywords

intergenerational; socioeconomic status; executive functioning; parenting

Numerous researchers have found that low parental SES is linked to lower levels of child executive functioning (EF), a set of skills related to planning and carrying out goal-directed activities (Bernier, Carlson, & Whipple, 2010; Raver, Blair, & Willoughby, 2013; Hackman, Gallop, Evans, & Farah, 2015; Hook, Lawson, & Farah, 2013; Rhoades, Greenberg, Lanza, & Blair, 2011). Researchers have recently expanded this scope of inquiry across three generations (i.e., intergenerational transmission) and have documented associations between grandparent SES and child developmental outcomes such as academic achievement (Ferguson & Ready, 2011; Modin & Fritzell, 2009; Møllegaard & Jæger, 2015; Najman et al., 2004). Although less is known about the intergenerational effect of SES on child EF, a few scholars have acknowledged the importance of examining this effect as EF is known to underlie essential child developmental outcomes such as academic functioning and emotion regulation (Blair & Diamond, 2008). Researchers have also documented considerable evidence suggesting that positive parenting helps children overcome the negative effect of low parental SES on child EF (Bernier et al., 2010; Blair et al., 2011).

Distinct from overall cognitive ability, EF specifically engages the prefrontal cortex (PFC) to hold and manipulate complex information (i.e., working memory), inhibit impulses (i.e., inhibition), and adapt quickly and flexibly to changing situations (i.e., cognitive flexibility). These processes play a critical role in facilitating academic success (Blair & Raver, 2015) and socio-emotional development (Weisleder et al., 2016). Researchers have indicated that children from low SES families display lower levels of EF than their higher SES counterparts (Hackman et al., 2015; Raver et al., 2013), and that EF may in part contribute to the poorer academic and social-emotional outcomes that have been documented among children growing up in low-SES environments (Blair & Raver, 2015). Disparities in EF have, in turn, been attributed to parental influences, such as chaotic family environments and increased stress (Vernon-Feagans, Willoughby, & Garrett-Peters, 2016), which can disrupt brain development in areas tied to EF (e.g., PFC; Blair & Raver, 2016).

Although evidence points to the association between parental SES and child EF (see Hackman & Farah, 2009), scholars of the three-generation approach have argued that grandparent SES may influence child cognitive development even after controlling for parental SES, through multiple pathways (Ferguson & Ready, 2011). Scholars, to this end, have reported that grandparents may transmit economic (e.g., resources to foster a cognitively enriching environment), social (e.g., knowing people who can offer enrichment opportunities), and cultural (e.g., stimulating learning through cultural practices such as art capital to their grandchildren to improve cognitive functioning such as EF (Møllegaard & Jæger, 2015). Further, associations between grandparent SES and child intellectual ability and academic functioning have been documented in several studies (Ferguson & Ready, 2011; Modin & Fritzell, 2009; Najman et al., 2004). Despite these findings, the intergenerational pathways through which the association exists with respect to EF have not been well established.

Resilience theory (Fergus & Zimmerman, 2005) suggests that positive parenting is a protective factor that can mitigate the consequences of low parental SES on child development (Cates, Weisleder, & Mendelsohn, 2016; Weisleder et al., 2016). Indeed, interventions that address poverty-related disparities in child development have primarily focused on enhancing the quality of parenting (e.g., nurturing parent-child relationships, shared reading; Cates et al., 2016). Although few researchers have studied the intergenerational effects of socioeconomic deprivation on child EF, it is conceptually plausible for positive parenting to buffer the association between grandparent SES and child EF. Parents who play with their child and engage their child in informal learning activities (e.g., reading to the child) may shape their child's EF in a positive manner within the context of intergenerational socioeconomic deprivation (Devine, Bignardi, & Hughes, 2016). In addition, nurturing parents are more likely to teach their child self-regulatory strategies, which are skills that are intricately tied to EF (Hofmann, Schmeichel, & Baddeley, 2012; Bernier et al., 2010).

We used a three-generation approach to examine whether grandparent SES is associated with two subtypes of child EF (i.e., cognitive flexibility, inhibition), and whether this intergenerational effect is moderated by positive parenting. In light of research that documents a link between grandparent SES and child development (e.g., Ferguson & Ready, 2011), we hypothesize that lower grandparent SES will predict lower levels of child EF. Additionally, as positive parenting is hypothesized to promote better EF skills, especially for children from low SES families (Neville et al., 2013), we hypothesize that positive parenting will moderate the influence of grandparent SES on child EF.

Method

Participants

Participants included 50 parents (70.0% female) who had participated in the Flint Adolescent Study (FAS) and their oldest child (56% female; $M_{age} = 12.38$, $SD_{age} = 3.06$). The FAS started in 1994 and is an interview-based, longitudinal study examining the intergenerational transmission of risk for alcohol, tobacco, and other drug use (see <http://prc.sph.umich.edu/projects/flint-adolescent-study/>). The original FAS sample consisted of 850 ninth graders (parents in the current study) from four main public high schools in an urban, Midwestern city. After 12 waves of data collection over 19 years (1994–2012) among the original FAS participants, FAS participants who were parents of a 5–14 year old child were recruited to study intergenerational effects (2014–16). Participants with children were contacted using invitation letters and postcards to invite them and their child to participate in a follow-up study. We obtained consent/assent from both parents and children before the interviews were administered. Child assent was obtained after parents gave permission to recruit their child. The university Institutional Review Board approved all study protocols.

The data in the current study are from waves 1 (1995; parent data; $M_{parent_age} = 14.86$ years ($SD = 0.64$)), 6 (2000; parent data; $M_{parent_age} = 20.98$ years ($SD = 0.64$)), 10 (2010; parent data; $M_{parent_age} = 29.76$ years ($SD = 0.71$)), and 14 (2016 parent and child data; $M_{parent_age} = 35.84$ years ($SD = 0.83$); $M_{child_age} = 12.38$ years ($SD = 3.06$)). In addition, 77% ($n = 38$) of the children self-identified as Black/African American, 12% ($n = 6$) self-identified as White,

2% ($n=1$) self-identified as Hawaiian, and three participants did not provide information about their racial identification. Parents and their oldest child were included in the current analysis if the child was administered EF measures.

Procedures

During each wave, trained interviewers conducted interviews with the parents and children at the parents' home or in various community settings (e.g., public library). Participants were also asked to complete a paper-and-pencil questionnaire that included items about the participant's socio-demographic background, parenting style, and sensitive topics such as substance use. Interviewers then administered EF assessments to the children of the interviewed parent individually.

Measures

Parent and Child's Demographic Information.—The participant and their oldest child's sex, age, and race were collected at either wave 1, wave 6, wave 10, or wave 14 of data collection. Parents self-reported their sex at wave 1 and reported the sex of their oldest child at wave 14. Sex was categorized as 0 (*male*) or 1 (*female*). With regards to race, the child self-reported their race at wave 14, and indicated whether they were American Indian/Alaska Native, Asian/Pacific Islander, Black/African American, Hawaiian/Other Pacific Islander, White, or Other. Lastly, parents also self-reported their age at wave 1, wave 6, wave 10, and wave 14, while their oldest child self-reported their age at wave 14.

Grandparent SES.—At wave 1, participants were asked to indicate their mother and father's occupation. Each occupation was subsequently assigned a prestige score based on the 1989 NORC General Social Survey (Fujishiro, Xu, & Gong, 2010; Nakao & Treas, 1990). To obtain prestige scores, 1,500 participants from the General Social Survey (GSS) were randomly divided into 12 subsamples; 10 of which were used to rate the occupational prestige of 740 occupational titles. The selected occupational titles were familiar to the American public and represented a considerable proportion of the labor force (e.g., "Lawyer" was selected, but "U.S. Supreme Court Justice" was not). Occupational titles were rated on a scale of 1 to 9, and prestige scores were calculated using a prestige formula that converted aggregate ratings on a 0 to 100 scale (Nakao & Treas, 1990). In our sample, the highest occupational prestige score was 64.38 which reflects jobs such as scientists and company managers, while the lowest prestige score was 30.98 which reflects jobs such as cooks and billing clerks. The highest occupational prestige score of the two parents were used for analysis when there was more than one parent. The average prestige score was 38.86 ($SD = 10.65$), indicating that the average grandparent had jobs that reflect low occupational prestige.

Researchers have demonstrated the predictive and concurrent validity of occupational prestige (Cherkas et al., 2006; Pedersen et al., 2017). For instance, occupational prestige can predict health outcomes (Pedersen et al., 2017) and, in some cases, be a stronger contributor to health than educational attainment (Pedersen et al., 2017). In one of the few studies that examined the role of parent occupational prestige on child outcomes, youths with parents who reported higher occupational prestige scores were more likely to be involved in

prosocial, organized activities (e.g., afterschool program, religious), which, in turn, reduced the likelihood of alcohol, tobacco and marijuana uses (Eisman et al., 2017). Occupational prestige is also strongly and positively associated with other indicators of SES, such as income (e.g., $r = .75$; Easton-Brooks & Davis, 2007) and educational attainment (Cheng & Furnham, 2012), further suggesting that occupational prestige is a valid approximation of SES.

Parental SES.—Parental educational attainment, which is a commonly used indicator of parental SES in studies of child development (Carozza et al., 2010), was measured using a single item at wave 6. Respondents indicated their level of educational attainment on a 3-point Likert type scale ranging from 0 (*12th grade and below*) to 2 (*one to four years of college*). Responses were then dummy coded with “12th grade and below” selected as the referent group.

Positive Parenting.—Participants reported the frequency of positive parenting behaviors such as showing physical and verbal affection to their child during the past month using 3-items from the Parenting Dimensions Inventory scale (Power, 2002). Participants responded on a 5-point Likert-type scale of 0 (*not in the past month*) to 4 (*everyday*). The Cronbach alpha for the Positive Parenting scale was .89. Sample items include “hugged or shown physical affection to your child(ren)” and “spent time with your child(ren) doing one of (his/her/their) favorite activities.”

Executive Functioning (Child).—The Neuropsychological Assessment, Second Edition, (NEPSY-II) was used to assess cognitive flexibility and inhibition, two central EF skills. The Animal Sorting subtest was used to assess cognitive flexibility. In this task, participants are shown eight cards and asked to look for ways that the cards are the same and different. The participants receive a score that reflects the total number of correct and incorrect sorts within the allotted time frame, and reflects cognitive flexibility (i.e., capacity to form new concepts and shift set from one concept to another; Korkman, Kirk, & Kemp, 2007).

The Inhibition and Inhibition Switching subtests were used to assess the child’s capacity to inhibit habitual responses and enact novel responses. In the Inhibition task, the child is asked to state the alternate names of shapes and arrows, whereas in the Inhibition Switching task, the child is asked to state the alternate names of shapes and arrows depending on the color of the shape or arrow. Specifically, the Inhibition subtest assessed the child’s ability to provide the opposite of the correct response, while the Inhibition Switching subtest assessed the child’s ability to switch between providing the correct and opposite response. A child’s performance on the inhibition subtests reflects the time it took for him or her to complete the measure after taking into account their incorrect responses in each subtest (Korkman et al., 2007).

Interviewers were trained in administering the EF battery in a standardized manner as detailed in the NEPSY-II administration guide (Korkman et al., 2007). Interviewers also scored the subtests and generated scaled and composite scores as detailed in the NEPSY-II scoring guide (Korkman et al., 2007). Age-adjusted standard scores were used for data

analysis for all NEPSY-II derived variables (i.e., Animal Sorting, Inhibition, and Inhibition Switching).

Data Analyses

Descriptive statistics, correlations, and multivariate regression analyses were conducted using *Mplus* 8.2 (Muthén & Muthén, 2018). A multivariate regression model was estimated to approximate the effects of grandparent SES, covariates, and the protective role of positive parenting on all three EF outcomes (Johnson & Wichern, 2007). As a precursor to examining the study aims, *t*-tests and χ^2 tests were conducted using SPSS v24.0 (IBM Corp., Armonk, NY, USA) to examine if our study sample (i.e., children assessed on EF) differed from the overall FAS sample at wave 14. Maximum likelihood estimation with robust standard errors were used to generate model parameters due to non-normality in the study variables, and unstandardized coefficients are reported. In addition, to handle missing data, full information maximum likelihood was used to generate likelihood functions for only the data that were available for each case. All continuous independent variables were centered prior to analysis and interaction terms were generated using centered variables. Lastly, an ad-hoc power analysis was conducted to ascertain the statistical power of the estimated model.

Results

Descriptive statistics for the study variables are reported in Table 1. Bivariate associations were generally small. Notably, performance on Animal Sorting was correlated with parental SES and grandparent SES. Furthermore, no differences were found between the sample of children and parents who were included and excluded in this study at wave 14 (see Table 2).

With regard to the first study aim, a multivariate regression model was estimated to examine the effect of grandparent SES on EF outcomes controlling for parental SES, positive parenting, and the sex of the child. Grandparent SES was not associated with Animal Sorting, Inhibition, or Inhibition Switching (see Table 3), after controlling for parental SES, positive parenting, and the sex of the child. Of note, parental SES predicted Animal Sorting (i.e., $b = 1.34$, $p = .04$), but not Inhibition or Inhibition Switching. Additionally, animal sorting and inhibition (i.e., $r = .32$, $p < .01$) and inhibition and inhibition switching (i.e., $r = .42$, $p = .03$) were significantly associated in the model.

With regards to the second study aim, an interaction term between grandparent SES and positive parenting was constructed to predict EF outcome in the multivariate regression model (see Table 3). A significant interaction was observed for Animal Sorting ($b = -.10$, $p < .01$), but not for Inhibition or Inhibition Switching (see Table 3). Post-hoc analysis indicated that lower levels of grandparent SES were associated with lower scores of Animal Sorting for children who received low ($b = .11$, $p < .01$; see Table 4) levels of positive parenting, but not for children who received moderate or high levels of positive parenting (see Figure 1).

The focus of our Monte Carlo study was to determine if we had adequate statistical power with our sample size of 50 to detect interactions. 10,000 samples were drawn, and the

population data was generated from our estimated model. We had ample statistical power to detect an interaction effect for animal sorting (.86), but not inhibition (.26) and inhibitions switching (.11), suggesting that our model was powered to detect large effects.

Discussion

The current study contributes to the body of research on the intergenerational effects of SES on child development in multiple ways. First, consistent with our hypothesis, we found that grandparent SES predicted child EF above and beyond parent SES. Second, positive parenting moderated the association between grandparent SES and child EF. Third, the association of grandparent SES and child EF differed across subcomponents of EF.

Our findings build upon prior intergenerational research on general intelligence and academic achievement (e.g., Ferguson & Ready, 2011). Results from the current study reveal that SES is associated with child EF across three generations. Given the importance of EF for academic achievement (Blair & Raver, 2015), if lower SES is associated to poorer EF across generations, this suggests that EF may be a pathway through which [early] disparities in academic achievement become established and persist. Our results suggest that it is important to consider the intergenerational effects of SES when seeking to understand potential influences on child EF. Although we did not study why this may be the case, it is not difficult to consider several mechanisms for why low SES effects may persist across generations including fewer resources in the family, school, and community to nurture EF development. In particular, many parents in our sample have lived in intergenerational poverty, where schools and community resources (e.g., libraries) are scarce and under-resourced. One might surmise that these youths have less opportunities to engage in EF enriching activities (e.g., reading, physical exercise; Raver et al., 2013), and are more vulnerable to high levels of early life stress (e.g., neighborhood violence) which, in turn, can hinder EF development in children (Bos et al., 2009).

Our results also suggest that the intergenerational effects of SES on child EF may be preventable. Specifically, our finding that positive parenting reduced the negative effects of low grandparent socioeconomic status on child EF supports the protective model of resilience theory (Fergus & Zimmerman, 2005) which posits that a third variable can help reduce the negative effects of a risk factor on a positive outcome. Our finding that positive parenting (i.e., affection, spending time) moderated the negative effect of grandparent SES on EF suggests that it is possible to offset the deleterious effects of low SES on child development. Indeed, many programs are focused on parenting as a way to counteract the negative effects of low SES on child development (Diamond & Lee, 2011); the current findings suggest that improved EF could be an additional benefit to such programming. Furthermore, the fact that we found moderating effects of parenting in a small, relatively high-risk sample, and across a wide child age range, suggests that this is a robust finding.

Interestingly, our findings also suggest that intergenerational SES is associated with some, but not all domains of EF. Specifically, grandparent SES predicted performance on Animal Sorting, but not performance on Inhibition or Inhibition Switching. Although we did not hypothesize that our results would only extend to Animal Sorting, this pattern of findings

suggests that SES may be most salient for EF processes that reflect complex and global EF skills such as cognitive flexibility, concept formation and switching, as assessed in the Animal Sorting task. Yet, SES may have less influence on more automatic processes such as response inhibition. EF skills such as cognitive flexibility can be thought of as more *cool*/EF skills that do not involve reactive processes, whereas EF skills such as inhibition are considered more *hot* EF skills as they involve impulse control needed to control reactive responses (Zelazo & Carlson, 2012). Although SES has been linked to both hot and cool EF skills (Hackman, et al., 2015), this pattern of findings suggests that SES may have a stronger influence on the neurobiological mechanisms tied to cognitive flexibility (e.g., medial prefrontal cortex; Logue & Gould, 2014) than to impulse control (Ursache & Noble, 2016). This distinction should be investigated in future work. Lastly, while grandparent SES had large effects on subtypes of child EF, we had a limited sample size, with adequate statistical power to detect only large effects. Accordingly, it is imperative that researchers assess the influence of grandparent SES on grandchild executive functioning within in a larger sample.

Limitations and Future Research

Strengths of the study were the intergenerational design and direct assessments of child EF. Yet, several study limitations require noting. First, the generalizability of our findings is limited to a small sample of relatively low SES, predominantly Black/African American families. The child's race was also not included in the model due to the lack of variability in the construct as over three fourth of the sample identified as Black/African American. Future research that examines the potential intergenerational influence of SES on EF in more representative samples would be useful. Nevertheless, our results provide a first look at the intergenerational effects of SES on EF and the role of parenting in moderating the effects in a sample of youth at greater risk for poor EF outcomes. In addition, due to the small sample size in our study, our study lacks the requisite statistical power to detect some effects. Consistent with results from the ad-hoc power analysis, we did not have adequate power to detect the protective role of positive parenting between grandparent SES and child inhibition. Yet, we did have adequate power to detect main effects for SES and moderating effects for parenting for Animal Sorting suggests that the effect size of these variables are potentially large. Thus, our results suggest that future research on SES, EF, and positive parenting in larger and more diverse samples is warranted. Another limitation is that we used single measures of SES in our study. Scholars have noted the benefits of employing a combination of SES indicators such as educational attainment and income (McLoyd, 1998). We used occupational prestige for grandparents and parental educational attainment to control for more proximal SES effects. Notably, however, prestige scores consider both education and mobility for an occupation. Future research, however, may benefit from including additional indicators of SES (e.g., material and financial assets) of both parents and grandparents. In addition, to understand the mechanisms by which SES may shape the development of EF, it would also be useful to gather information about the home environment (e.g., cognitive and emotional quality, reading to the child) to include in our intergenerational analysis.

In conclusion, our study is one of the first to examine the intergenerational effect of SES on child EF. Our findings extend prior research by suggesting that positive parenting may offset

the intergenerational effect of SES on child EF. Findings extend prior research by indicating that intergenerational SES may uniquely influence cognitive flexibility. From a clinical perspective, our findings lend support to parent training interventions (e.g., Parent Child Interaction Therapy; Danko, Brown, Schoick, & Budd, 2016) because enhancing parenting skills may counter the adverse effects of intergenerational socioeconomic deprivation. As is usually the case, however, the relations between SES, parenting, and EF are highly complex, with factors such as family process and parental stress as important contributors. Our study lays the foundation for further work on the intergenerational mechanisms that influence child development.

Funding:

This research was supported by a grant from the National Institute of Drug Abuse (NIDA) (5R01DA035811-05) for the fourth (H.F.H.) and last author (M.A.Z.).

Appendix

Table 1

Descriptive Statistics and Inter-correlations of Study Variables

	1	2	3	4	5	6	7	M (SD) or %
1. Grandparent SES	--							38.86 (10.87)
2. Parental SES	.22	--						1.11 (0.83)
3. Positive Parenting	-.13	.26	--					4.59 (0.84)
4. Female (Child)	.00	.22	.07	--				56% Female
5. Animal Sorting	.32 *	.29 *	-.13	-.04	--			6.42 (3.45)
6. Inhibition	.06	-.07	-.15	.02	.30 *	--		9.32 (3.78)
7. Inhibition Switching	.02	-.22	-.05	-.29 *	.20	.41 *	--	9.02 (4.02)

Note.

* is $p < .05$.

Table 2

Attrition Analysis of Children With and Without Executive Functioning Scores at Wave 14

Independent Means <i>t</i> -Tests	<i>t</i> -statistic	<i>df</i>	<i>p</i> -value
Grandparent SES	-.43	127	.67
Positive Parenting	-1.22	104	.23
Chi-square Tests	χ^2 Statistics	<i>df</i>	<i>p</i> -value
Child's Sex	.03	1	.87
Parental Education	2.57	2	.28

Table 3

Predictors of Executive Functioning in Multivariate Regression Model

	Main Effects-Only				Interaction			
Animal Sorting	<i>b</i>	<i>s.e.</i>	<i>P</i>	<i>95% C.I.</i>	<i>b</i>	<i>s.e.</i>	<i>P</i>	<i>95% C.I.</i>
Grandparent SES	0.08	0.05	.09	−0.01, 0.17	0.04	0.04	.37	−0.04, 0.12
Parent - College	2.65	1.28	.04	0.14, 5.16	3.96	1.32	> .01	1.37, 6.56
Parent - HS Graduate	1.94	1.28	.13	−0.57, 4.44	2.65	1.31	.04	0.10, 5.20
Positive Parenting	−0.65	0.64	.31	−1.91, 0.61	−0.59	0.31	.06	−1.21, 0.02
Child's Sex	−0.51	1.02	.62	−2.51, 1.49	−1.12	.99	.26	−3.07, 0.84
Interaction	--	--	--	--	−0.10	.02	> .01	−0.14, −0.05
Inhibition	<i>b</i>	<i>s.e.</i>	<i>P</i>	<i>95% C.I.</i>	<i>b</i>	<i>s.e.</i>	<i>P</i>	<i>95% C.I.</i>
Grandparent SES	0.03	0.05	.50	−0.06, 0.13	0.01	0.06	.82	−0.10, 0.12
Parent - College	−0.63	1.41	.65	−3.41, 2.14	−0.09	1.62	.96	−3.27, 3.09
Parent - HS Graduate	0.46	1.57	.77	−2.61, 3.54	0.75	1.64	.65	−2.46, 3.96
Positive Parenting	−0.54	0.48	.26	−1.48, 0.40	−0.51	0.50	.30	−1.48, 0.46
Child's Sex	0.48	1.17	.68	−1.81, 2.78	0.22	1.18	.85	−2.09, 2.53
Interaction	--	--	--	--	−0.05	0.04	.30	−0.13, 0.04
Inhibition Switching	<i>b</i>	<i>s.e.</i>	<i>P</i>	<i>95% C.I.</i>	<i>b</i>	<i>s.e.</i>	<i>P</i>	<i>95% C.I.</i>
Grandparent SES	0.02	0.05	.68	−0.08, 0.12	0.02	0.06	.71	−0.09, 0.13
Parent - College	−1.48	1.69	.38	−4.80, 1.84	−1.59	1.92	.41	−5.35, 2.18
Parent - HS Graduate	−1.30	1.73	.45	−4.69, 2.09	−1.42	1.87	.45	−5.09, 2.24
Positive Parenting	−0.06	0.50	.90	−1.03, 0.91	−0.09	0.50	.87	−1.06, 0.89
Child's Sex	−2.04	1.24	.10	−4.48, 0.39	−1.94	1.31	.14	−4.50, 0.62
Interaction	--	--	--	--	0.02	0.04	.72	−0.07, 0.10

Note. HS = high school. Interaction = Grandparent SES X Positive Parenting.

Table 4

Conditional Effect of Grandparent SES on Animal Sorting

	<i>b</i>	<i>s.e.</i>	<i>P</i>	<i>95% C.I.</i>
−1 SD Positive Parenting	.12	.03	> .01	.05, .18
Average Positive Parenting	.04	.04	.37	−.04, .12
+ 1 SD Positive Parenting	−.04	.05	.41	−.15, .06

Figure 1.

The association between grandparent SES and animal sorting at one standard deviation below the mean, the mean, and one standard deviation above the mean for positive parenting.

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