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The Origins of Information Processing Preferences in Politics: Examining Parental Influence

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Abstract

Cognitive motivations (e.g., need for cognition and need to evaluate) and decision strategies (e.g., rational choice vs. heuristic-based) importantly shape political understanding, evaluations, and vote choice. Despite the importance of these cognitive factors, few studies have examined their origins. Adopting an exploratory framework with a primary focus on parental influence, we uniquely address this research gap by identifying potential pathways through which parents can affect this development. Using a convenience sample of college students who participated in a 10-week panel study with their parents, we reveal that, unlike many other political characteristics, there is little parent-child similarity in cognitive motivations and decision strategies. We, however, find some similarity in the information search behaviors parents and children exhibit during the mock election campaign. The findings highlight the need to further investigate not only additional parenting behaviors, but also the socializing role of the information environment itself.

Keywords: socialization, information processing, decision making, political cognition, need for cognition, need to evaluate

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Information processing preferences shape political understanding, attitudes, interest, evaluations, and voting behavior. The need for cognition, for example—the tendency to engage in and enjoy complex thinking (Cacioppo & Petty, 1982)—is associated with political ambivalence (Rudolph & Popp, 2007), candidate knowledge and issue-based thinking (Cacioppo, Petty, Kao, & Rodriguez, 1986), attitude strength (Smith, Haugtvedt, & Petty, 1994), political interest and media consumption (Condra, 1992), persuasiveness (Cacioppo, Petty, Feinstein, & Jarvis, 1996), and party evaluations (Arceneaux & Vander Wielen, 2013). The need to evaluate, which is “the extent to which people spontaneously evaluate objects or experiences as either good or bad,” (Bizer et al., 2004, p. 997) has similarly been linked to attitude extremity (Federico, 2004; Jarvis & Petty, 1996; Maio & Esses, 2001), media usage to follow campaigns (Bizer et al., 2000, 2004), political participation (Ibid.), and has been used as a surrogate for “online” processing (e.g., Chong & Druckman, 2010). Individuals with a high need for cognition are more likely

to think more deeply about candidates and issues, while individuals with a high need to evaluate are more likely to hold opinions about anything and everything.

Complementing these cognitive motivations are a number of decision strategies that predict, not least, the depth of information search in politics, affective polarization, and quality of vote choice (Lau, Kleinberg, & Ditonto, 2018; Lau & Redlawsk, 2006). We focus on four decision strategies that guide political preferences and behavior (rational choice, confirmatory, fast and frugal, and heuristic-based; see Lau et al., 2018; Lau & Redlawsk, 2006). The strategies are differentiated across two dimensions: the depth of information search and the relative balance applied in incorporating information into a decision. The rational choice model entails equal consideration of all available information. Individuals adopting the confirmatory model rely on preexisting knowledge structures to guide their (relatively deep, but passive) information search, accepting new information that is consistent with that knowledge and dismissing any that is contradictory. Fast and frugal and heuristic-based processors both engage in shallow information search. However, fast and frugal processors base decisions on a few salient attributes important to them, while heuristic-based processors search for just enough information to arrive at a satisficing (or “good enough”) decision.

Despite growing recognition of the predictive roles these cognitive factors hold in important political behaviors, very little is known about their origins. Prior research has found no systematic differences based on race or gender in the need for cognition and need to evaluate (e.g., Cacioppo & Petty, 1982; Jarvis & Petty, 1996; Padgett et al., 2010; see also Bizer et al., 2000, p. 1008), and neither fit neatly into any one dimension of personality (Cacioppo et al., 1996). Efforts to include these motivations in personality models “provide a useful reference, but [they] do not explain how or why individuals differ in need for cognition” (Ibid., p. 246). Lau et al. (2018) found evidence of gender and racial differences in preferred decision strategies, but the antecedents of these preferences remain largely unexamined. While previous research has focused on how cognitive motivations and strategies give way to individual differences in political outcomes, we ask from where those cognitive elements originate in the first place. The present study is thus a further extension of a question posed by Gauvain (2001): “How do we learn to think and why do we end up thinking the way we do?” (p. xiv).

Using the rich catalogue of political socialization research as our guide, we start our investigation by looking specifically at the role of parents. Research on political attitudes and behaviors has repeatedly identified parents as primary socializing agents. In this study, we test the extent to which this is true for information processing preferences in politics, and we outline the pathways through which parents may affect their child’s cognitive motivations and decision strategies.

Socializing Political Preferences vs. Socializing Political Cognition

Political preferences can be surprisingly stable over the life course. Independent studies on partisanship (Green, Palmquist, & Schickler, 2002; Jennings & Markus, 1984), political trust (Schoon & Cheng, 2011), social trust (Jennings & Stoker, 2004; Stolle & Hooghe, 2004), and political interest (Prior, 2010) support a developmental trajectory wherein individual preferences show greater malleability in youth and early adulthood, but then increasingly stabilize with age. Paralleling this “persistence of early socialization” (Sears, 1975), there is often a notable degree of parent-child similarity across various political outcomes, including shared partisanship, vote choice, attitudes, and levels of political knowledge (Jennings & Niemi, 1974; Jennings, Stoker, & Bowers, 2009; Niemi & Jennings, 1991; Tedin, 1974; Zuckerman, Dasovic, & Fitzgerald, 2007).

Because cognitive dispositions such as the need to evaluate and need for cognition are also stable characteristics (Cacioppo & Petty, 1982; Cacioppo et al., 1996; Jarvis & Petty, 1996), we may expect parents to play a formative role in how children come to process and integrate political information. Previous work has found significant parent-child correlations in the need for closure (Dhont, Roets, & Van Hiel, 2013), risk-taking (Dohmen, Falk, Huffman, & Sunde, 2012), the negative interpretation of novel or ambiguous information (i.e., interpretation bias; Creswell, Schniering, & Rapee, 2005), and the tendency to reply “don’t know” on political questions (Rapoport, 1985), as well as mixed results on constructs like attributional biases (see, e.g., Alloy et al., 1999) and weaker parent-child correlations in broader thinking styles (Zhang, 2003).

In general, our social environment shapes how we view and process information (see Gauvain, 2001; Goodnow, 1990). Even though we all come equipped with the same cognitive hardware, our cognitive skills, modes of thinking, preferred processes, and knowledge content can differ due to variations in the emphases external contexts (social or cultural) place on knowing certain types of information, and on the ways we acquire and apply knowledge. The social environment tags which types of information are “important, difficult, ignorable, not for you, reserved for group X, best approached by method Y, and so on” (Goodnow, 1990, p. 275). Social context may place a higher value on members of certain groups knowing more about politics than it does on others. But even more, the socializing environment shapes how we collect and store the information that becomes the basis of that knowledge. For example, Western education often entails the presentation of large amounts of information “in abstract and decontextualized form,” placing greater weight on specific kinds of encoding and recall processes, such as elaboration, rehearsal, and organization, compared to “spatial and narrative strategies” that are more common in non-Western cultures (Gauvain, 2001, p. 128).

Political outcomes such as political knowledge, partisanship, political interest, issue attitudes, and vote choice often hold normative value. However, when it comes to *processing* political information, parents (unlike political scientists) probably have less interest and investment in *how* their children actually reach their political decisions, particularly if the desired outcome (or the *what*) is achieved. As long as the end is satisfactory, there may be no perceived “right way” in cognitive means. In addition, the specific ways parents process information and make political decisions may be outside of parents’ own conscious awareness. Many citizens employ heuristics when making political decisions, where they engage in a largely automatic, implicit processing of political information (Lau & Redlawsk, 2001; Sniderman, Brody, & Tetlock, 1991). Not confined to politics, “most of a person’s everyday life is determined not by their conscious intentions and deliberate choices but by mental processes that are put into motion by features of the environment and that operate outside of conscious awareness and guidance” (Bargh & Chartrand, 1999, p. 462). When prompted to explain the reasoning behind their political decisions or preferences, individuals often find post-hoc rationalizations (Haidt, 2001).

Experimental political studies may direct respondents’ attention to political information (e.g., candidate bios, news articles, etc.) before querying candidate or policy preferences, but the experiment is less likely to direct attention to *how* respondents make their decision. In one study, participants varied in their crime policy preferences depending on the frame in which information was presented (Thibodeau & Boroditsky, 2011). Participants in all groups cited the crime statistic as the reason for their preference, without awareness of how the frame was affecting the way they processed available information. Therefore, contrasting the case of political preferences such as policy attitudes or partisanship, parents may not themselves be aware of the problem-solving strategies they employ or cognitive motivations that guide their selection of information when making political decisions. These internal cognitive preferences are also unlikely to be something a child can witness directly.

In addition, the introduction of cable television and the Internet has increased viewing options and accessibility to political information. Together with the availability of smart devices, these changes have led to an increased privatization of information consumption, where viewing media in shared spaces (e.g., the television in the living room) has shifted to a “bedroom culture” (Bovill & Livingstone, 2001). Even the information consumption habits of parents are thus less likely to be observed—not just their processing preferences. Parents may discuss politics with their children, but this too does not necessarily mean that the ways in which parents find and process information will be transmitted.

Taken together, the literature provides a mixed prediction of parental influence in cognitive dispositions and decision making in politics. Like other elements of political development, we would expect parents to play an influential role. However, the absence of any value connotation regarding how a child should make political decisions, along with the implicit, unobservable nature of information processing, could reduce the scope of parental socialization compared to more overt, value-laden political outcomes such as partisanship.

The Dynamics of Parental Influence

If parents do shape the information processing preferences underlying political cognition, what shape does this influence take? What mechanisms underlie parent-child similarities? The most prolific model in traditional political socialization research concerns direct transmission, where children passively inherit the political values of their parents. Direct transmission can occur through the pathway of genetic heritability (see, e.g., Fowler, Baker, & Dawes, 2008), or social learning, as parents provide observable models for children to imitate. Parents may even provide direct instruction of that model. Children may further inherit social characteristics such as class, race, and education (e.g., Jennings et al., 2009), which could influence cognition and also generate political similarities between parents and their offspring. All of these pathways share the expectation of a positive correlation between parent and child political outcomes.

Transmission may also depend on the quality of the parent-child relationship, with trust, affection, emotional bonds, and frequency of interaction forming a critical part of the “social logic” of partisanship, for example (Zuckerman et al., 2007). The result is a two-stage socialization process, where children must first have a positive, trusting relationship with their parents before they then adopt parental political values as their own. This framework retains the basic premise that the parent’s political characteristic is observable or somehow perceptible. Broader parenting practices, devoid of explicit political content, can likewise shape political development without necessary reference to the parent’s own political values or behaviors (Bougher, 2018).

Are these pathways also relevant for the transmission of information processing preferences in politics? To the extent that genetics or social characteristics such as class or race shape cognitive development, children may inherit the cognitive styles and problem-solving strategies of their parents. Pathways that require social learning—whether a direct model where children imitate their parents, or a two-stage model that rests on the parent-child relationship—may be more circumspect given the implicit nature of political processing described in the previous section.

Alternatively, parents may indirectly affect the processing of information by helping build and cultivate cognitive skills in other domains that can later be transferred to politics. Familial environments may vary in the demands they place on a child’s cognition, fostering one thinking style or decision strategy over others. For example, chaotic home environments may promote strategies that process information quickly, not exhaustively, whereas

environments that afford children greater time to make their decisions but hold negative consequences for wrong choices may encourage a more thoughtful, deliberative processing of information.ⁱ In this sense, the social context specifies the appropriate mode of thinking, placing greater value on cognitive flexibility and adaptability than the universal superiority of any one thinking style; context “provides children with opportunities to develop cognitive skills in ways suited to the circumstances of their lives” (Gauvain, 2001, p. 17).

Reflecting on potential antecedents of the need for cognition, Cacioppo et al. (1996) proposed that “the literature on intrinsic motivation may provide a useful starting point” (p. 247). Intrinsic motivations like the need for cognition emanate from an environment that fulfills the psychological needs for competence, relatedness, and autonomy (Ryan & Deci, 2000). Children are more intrinsically motivated when their parents successfully balance these needs by, for example, showing warmth, respecting their child’s opinion, involving children in family decisions, or affording children an appropriate level of independence. Parental warmth and relatedness provide the safe base to explore and grapple with information that may challenge existing knowledge structures; autonomy gives children an opportunity to further develop their processing skills and strategies through independent experimentation and control over their own decisions; and opportunities to participate in family decisions provide an outlet to apply learned skills and strategies, increasing competence.

Apart from developmental work examining the transmission of information processing bias related to anxiety, few studies have explored the link between parenting and broader thinking styles.ⁱⁱ Studying the links between adult attachment style, curiosity, and need for closure, Mikulincer (1997) found that individuals with secure attachment searched for more information, held more positive attitudes towards searching for information, and were more likely to integrate that information into their existing knowledge structures. Secure attachment, formed in childhood, provided adults with the confidence to actively venture into the new and unknown, adjusting existing cognitive structures when necessary. Insecure individuals, in contrast, tended to rely on what they already knew and were reluctant to integrate new information. Parental warmth and responsiveness have similarly been associated with increased capacity for complex thinking and creativity, and the tendency to engage in independent and organized thought (Fan & Zhang, 2014).

Our work bridges this thin body of research to that on political socialization. Adopting the same approach used in traditional political socialization studies, we first assess the plausibility of direct transmission of political information processing preferences by examining parent-child correspondence in cognitive motivations, decision strategies, and information search behaviors. We then consider the role of broader parent-child dynamics, looking specifically at autonomy-supportive parenting.

Hypotheses

Given the paucity of research in this area, our a priori assumptions are limited. Using prior studies in political socialization as a guide, we expect *a positive correspondence between parent and child cognitive motivations and decision strategies* (H1), whether due to genetics, shared social context and characteristics, or (less likely) social learning, but that this correspondence will be *weaker than parent-child associations on more observable, value-laden political preferences and orientations* (H2).

Our next set of hypotheses requires us to introduce the concept of autonomy-supportive parenting, which encapsulates nonpolitical parenting practices and reflects the quality of the parent-child relationship. Our measure is derived from the discussed intrinsic motivation literature that places a premium on competence, relatedness, and

autonomy. Within a two-stage socialization model, social learning is filtered through dynamics such as parental warmth and responsiveness. In keeping with this model and existing research, we expect *autonomy-supportive parenting to play a moderating role in the transmission of political preferences* (H3).

The expectations regarding autonomy-supportive parenting and cognitive preferences are less straightforward. On the one hand, the two-stage political socialization model may also hold for the transmission of cognitive motivations and decisions strategies, affording a moderating role to autonomy-supportive parenting. However, the prior literature review depicts information processing as less observable and value-laden than conventional political values or behaviors, rendering social learning models inapplicable. Parental warmth and responsiveness may afford children greater curiosity and security to explore new information, untethering them from parental models of information processing. Similarly, the curiosity and security autonomy-supportive parenting instills may encourage wider and deeper information search as evidenced by either seeking out more information or spending more time on articles available in our study. Alternatively, secure children may be more confident in their information search, enabling them to gather information more efficiently. We thus offer this part of the analysis as a unique exploratory contribution, making no a priori assumptions regarding the role of autonomy-supportive parenting in the transmission of cognitive motivations, decision strategies, or observed depth and scope of information search. Instead, we test whether broader parenting practices are a viable pathway of influence, with no firm assumptions on the nature or direction of that influence.

Method

Participants and Procedure

One of the best ways for students to learn about research is to be a subject in one or more research projects. As part of their research methods class at a large university in the northeastern United States, students were required to spend approximately 1 hour participating in research. Everyone was aware of this requirement from the first day of class, and of the alternative assignment – writing a 5-page research paper – if for any reason they could not, or did not, participate in the research. (Over the course of the year, two students completed the alternative assignment.) We analyze data from a 10-week long mock presidential primary election campaign that fulfilled this class requirement. The assignment was worth 20% of their grade; students were offered 1 point for each week they participated, an extra 4 points for participating in all 10 weeks of the study, and an additional 5 bonus points if they recruited one parent to also complete all 10 weeks. In addition, students were informed that a \$10 donation would be made to an undergraduate research fund in the political science department when a parent was successfully recruited.ⁱⁱⁱ To recognize special circumstances, students were offered the opportunity to recruit another close relative or family friend, who was around the same age as the parent, if parents were either not present or were otherwise unable to participate. We exclude data from the two students who exercised this option. These procedures were approved by the university's Institutional Review Board (IRB). Students were instructed to tell a parent about this assignment and ask them if they would be willing to participate in the study. If a parent said yes, and gave children permission to share the parent's email address with us, we contacted the parent within 24 hours of receiving their email address from their offspring.

The study was fielded in the Fall 2014 and Spring 2015 semesters. Three-hundred and two students completed the first week of the study, together with 105 parents. The current paper focuses only on those students who

completed week 1, week 10, and at least 2 of the intervening 8 weeks of the study along with a parent, resulting in a final sample of $N = 99$ parent-child dyads (Students: 39% female, 61% male; age $M = 21$ years, $SD = 2.73$, range 18-32; 60% white, 4% black, 19% Latino, 17% other; Parents: 67% female, 33% male; age $M = 52$ years, $SD = 6.64$, range 40-72; 66% white, 3% black, 17% Latino, 14% other).

The study followed a $2 \times 2 \times 2$ design. In the first week, students could select to vote in either the Democratic or Republican primary. They were then randomized into one of eight treatment conditions that varied the importance of their decision, internet availability, and media diversity.^{iv} In all treatment conditions, we used the Dynamic Process Tracing Environment (DPTE) methodology to track how participants searched for and gathered information in real time, recording their selection amongst candidate information, news articles, and endorsement information provided in a framework that simulates the digital availability of information online (for details, see Andersen, Redlawsk, & Lau, 2019).

Because our current focus is on general parent-child correspondence, including similarity on pre-treatment measures, treatment effects from the factorial design are not a concern. We were able to pool dyads across treatment conditions because students and parents were, by design, assigned to the same cell of the larger experiment. The resultant sample size gave us sufficient power to detect parent-child correlations of the magnitude that previous research on the socialization of political beliefs and behaviors would lead us to expect. With an alpha level of .05 (one-tailed), 57 subjects (i.e., parent-child dyads) provides a power of .85 to detect correlations of .35 or higher.

Measures

Our cognitive measures center on *how* individuals make decisions, rather than on the components (e.g., choice sets) or outcomes of decisions (see also Lau & Redlawsk, 2006; Redlawsk & Lau, 2013). In the first week of the study, parents and students answered items measuring their need for cognition and need to evaluate, as well as their propensity to adopt one of four decision strategies (rational choice, confirmatory, fast and frugal, and heuristic-based). While the need for cognition and need to evaluate assess general tendencies (e.g., “I prefer complex to simple problems” [need for cognition] and “I form opinions about everything” [need to evaluate]), some of the items measuring decision strategies make explicit reference to politics. All of these items concerning cognitive motivations and decision strategies are measured on a 7-point Likert scale with response options ranging from “strongly agree” to “strongly disagree,” and are combined into respective summative scales. The full list of survey items, corresponding scales, and descriptive statistics are included in Appendices E and B, respectively (see [Supplementary Materials](#)). Detailed analysis demonstrating the reliability and discriminant validity of the decision strategy subscales can be found in Lau et al. (2018). Our experimental design also allows us to observe actual information search behavior, which is a crucial indicator of decision strategy (Lau & Redlawsk, 2006). We consider two measures to capture the depth and scope of information search: the amount of time spent searching for information (measured in seconds) and the total number of unique items opened.^v

Autonomy-supportive parenting behavior was measured using retrospective reports on twelve items. The measure captures the quality of the parent-child relationship in ways relevant for social learning, reflecting the dimensions of relatedness, autonomy, and competence identified as important in the intrinsic motivation literature (Ryan & Deci, 2000). Cacioppo et al. (1996) suggested that the need for cognition, for example, may develop if children “learn, through observation and experience, that they can cope with their problems through reason and verbal influence rather than through physical force or flight” (p. 246). We include items on parental warmth, the child’s

inclusion in household decisions, the child's freedom to make his or her own choices, and the extent to which parents share the rationale of their decisions.^{vi}

Children and parents answered the same parenting items, but framed so that children reported the type of parenting they received, and parents reported the type of parenting they gave. Because the number of response options varied across items (see Appendix D in the [Supplementary Materials](#)), responses for all items were transformed to a uniform 0 to 1 scale. To increase the reliability of the retrospective accounts, we then averaged the parent and child responses to each individual item before combining those items into an autonomy-supportive parenting scale ($\alpha = .87$; see also [Schwarz, Barton-Henry, & Pruzinsky, 1985](#)).^{vii}

We assessed two political outcomes at the end of the panel study: vote choice and candidate affective polarization. Vote choice is simply a categorical measure indicating the specific candidate (Candidate 1, Candidate 2, or neither) participants selected in the primary scenario. Participants also rated the candidates on a 100-point feeling thermometer.^{viii} Affective polarization is the absolute value of the difference between these two ratings. We include controls for race and gender given, not least, their potential association with decision strategies. [Lau et al. \(2018\)](#) found that women were more likely to prefer the rational choice model, while minorities were more likely to prefer the fast and frugal and confirmatory models.

Results

Sample means for all variables used in this analysis are contained in Appendix B in the [Supplementary Materials](#). For items that are available in both datasets, Appendix Table A.1 (see [Supplementary Materials](#)) reveals that the correlations between political preferences, cognitive motivations, and demographics in our convenience sample are comparable to those from nationally representative samples drawn by the American National Election Survey (ANES).^{ix} The correlation between the need for cognition and need to evaluate in our convenience sample (.33) is also comparable to that [Bizer et al. \(2000, p. 11\)](#) found in the 1998 ANES pilot study (.30), to [Jarvis and Petty's \(1996\)](#) lab findings (.35), and to the average correlation in the 2000, 2004, 2008 ANES time series data (.36). Appendix Table B.4 (see [Supplementary Materials](#)) repeats some of the correlations in our convenience sample shown in Table A.1 (see [Supplementary Materials](#)), but expands them to include the additional cognitive predictors and political variables unique to our study.

Appendix Table A.2 (see [Supplementary Materials](#)) displays the parent-child correlations for cognitive motivations, decisions strategies, and the information behaviors analyzed in the present study, along with correlations for more conventional political outcomes, such as political interest and party identification. Our parent-child correlations in political preferences are similar to those found in prior political socialization research (see Appendix C in the [Supplementary Materials](#)). In line with our first two hypotheses, parent-child correlations in cognitive motivations and decision strategies are positive, but, on average, are lower than those on political preferences and statistically non-significant on all measures except the confirmatory decision strategy. Despite lower levels of parent-child similarity in cognitive motivations and preferred decision strategies, however, parents and children exhibited greater similarity in information search behaviors. The total number of unique items searched yields a correlation ($r = .51, p < .001$) akin to those on political preferences, such as partisanship ($r = .66, p < .001$) and ideology ($r = .54, p < .001$), tempering support for our second hypothesis.

Moving from simple bivariate correlations, we ran linear (OLS) models to include controls for race and gender and to assess the role of autonomy-supportive parenting.^x Appendix Table A.3 (see [Supplementary Materials](#)) displays the results of regressing child political preferences on parental political preferences, autonomy-supportive parenting, race and gender. The standardized regression coefficients in the first columns of each sub-table indicate a significant parent-child association in political interest ($\beta = 0.25, p < .05$), party identification ($\beta = 0.63, p < .001$), partisan strength ($\beta = 0.24, p < .05$), and ideology ($\beta = 0.53, p < .001$). This correspondence could reflect the direct transmission of political values. The second column lists results when the interaction between parental model and autonomy-supportive parenting is included in the linear model. The significant coefficient on the interaction term, as well as the F -test indicating improved model fit, supports a two-stage socialization model for political interest, $\beta = 1.95, p < .01; F(1, 71) = 8.06, p < .01$, party identification, $\beta = 0.77, p < .05; F(1, 71) = 4.36, p < .05$, and nearly ideology, $\beta = 0.97, p < .10; F(1, 65) = 2.83, p < .10$, which narrowly misses the conventional level of statistical significance. These positive coefficients indicate that children are more likely to share these political preferences with their parents as autonomy-supportive parenting increases.

In contrast to the significant associations between parental and child political preferences, with a moderating role for autonomy-supportive parenting, running our model for cognitive motivations and decision strategies yields largely insignificant results, contained in Appendix Table A.4 (see [Supplementary Materials](#)). With the exception of the interactive two-stage Fast and Frugal decision strategy, $\beta = -2.02, p < .05; F(1, 71) = 5.63, p < .05$, and need for cognition if we lower our threshold for statistical significance, $\beta = 1.18, p < .10; F(1, 71) = 3.22, p < .10$, the results reaffirm the correlations in Appendix Table A.2 (see [Supplementary Materials](#)), revealing that children do not share their parents' preferred strategies and motivations. They also show that autonomy-supportive parenting, as measured here, and a two-stage socialization model are less relevant in the development of these specific cognitive factors.^{xi} In fact, the one significant result, that on the Fast and Frugal strategy, is negative, indicating that children are *less* likely to share this preference as autonomy-supportive parenting rises. Unlike the case with political preferences, autonomy-supportive parenting and a two-stage model, when even applicable, can encourage deviation from parents' preferred decision strategies.

The findings for the behavioral variables in our study, including the total number of unique items opened, total search duration, vote choice, and differential rating of candidates (i.e., affective polarization) are mixed. The first columns in Appendix Table A.5 (see [Supplementary Materials](#)) reveal significant direct parent-child associations in the scope of information search (as indicated by total unique items viewed; $\beta = 0.52, p < .001$), candidate vote choice ($\beta = 0.42, p < .01$), and the differential in candidate ratings (achieving marginal significance at $p < .10; \beta = 0.24$). And while there is no significant parent-child association in search time, children spend less time searching when parents are autonomy-supportive ($\beta = -0.27, p < .05$). The negative association could indicate greater confidence opposed to inefficiency in information search, but this remains to be tested. Across all behavioral models, the interaction between autonomy-supportive parenting and parental behavior is not statistically significant, and its inclusion does not improve model fit. The absence of a significant moderating role for autonomy-supportive parenting in our post-treatment political variables, in contrast to our pre-treatment political measures, may be partially attributable to the restrictive nature of our candidate options, where respondents participate in a primary election with two in-party candidates. Though speculative, autonomy-supportive parenting may play a more significant moderating role in a scenario with two candidates from opposing parties, where there is likely to be greater heterogeneity in response.

Testing Associations With Random Matching

The significant coefficients in our models could be the result of spuriousity or may be a by-product of our experimental design, where parents and children were corralled into the same information environment (i.e., treatment). Both instances may generate false positives, or Type I errors. As a preliminary test of this possibility, we replaced the measure of parent's behavior with that of one randomly matched parent in the dataset who was not related to the child but shared the same treatment conditions as the child.^{xii} If spuriousity or the shared information environment in our treatment are driving the parent-child similarity we found in our analyses, such as scope of information search (i.e., unique items opened), we should expect to see a significant association between a child's behavior to that of a non-related parent in the same environmental conditions. Appendix Table A.6 (see [Supplementary Materials](#)) shows that, with exception of partisan strength, the randomly matched parental model is not a significant predictor of child outcomes. Similarly, we regressed child preferences and outcomes on the models of one randomly matched child sharing the same experimental treatment. Appendix Table D.2 (see [Supplementary Materials](#)) also reveals no significant child-random child associations in political preferences, cognitive motivations, preferred decision strategies, search behavior, vote choice, or candidate ratings.

Discussion

Do parents influence how children come to process information in politics and make political decisions? In line with previous socialization literature, we found that parents and children are similar in their more observable and value-laden political attitudes, such as political interest and partisanship. However, in contrast to these conventional political preferences, children do not share their parents' need to evaluate, need for cognition, or preferred decision strategies, and parenting in general does not appear to have much of an impact on these preferences.

There were, however, signs of potential parental influence in actual search behaviors, including the total number of unique items searched. This could be because actual search behaviors are more observable than the other cognitive preferences analyzed in our study. While our supplemental analysis using randomly paired parent-child dyads suggested that there is something unique about the true parent-child relationship, our models do not preclude the possibility that the wider information environment that parents and children share—one which has existed and extends far beyond our experimental environment—is driving the parent-child similarity in information search rather than parents themselves exerting any socializing effect. Our models also do not take into account shared demographics, socio-economic environment, additional environmental manipulations within the experiment, and other covariates that could undoubtedly drive the association between child and parental models of both political preferences and information search, further overstating parental effects. Replication within larger and more diverse samples is necessary before any findings can be deemed conclusive.

Prior work has demonstrated just modest effects of parenting on broader thinking styles (Fan & Zhang, 2014). Our sample may be too small to detect such modest effects, offering insufficient heterogeneity in the measures or sample characteristics. Retrospective reports may be too unreliable or our college-age student sample too old to capture the most formative periods of parental influence. Studies including children as young as 3 to 8 years old detected significant associations between parental ideological orientations and children's cognitive preferences for order, conformity, and security, as well as trust and information processing patterns linked to authoritarianism (Guidetti, Carraro, & Castelli, 2017; Hussak & Cimpian, 2018). Parents and children may share other cognitive

preferences, such as epistemic and relational needs, or personality traits not examined in this study that predict similarities in political and information processing preferences. Or the dimensions of parenting analyzed in this study may miss the types of parenting practices that more directly affect a child's decision making processes. Young children whose mothers more actively discuss and reminisce about past events in an elaborative manner (i.e., elaborative "memory talk" vs. pragmatic/repetitive) are more likely to organize knowledge in a holistic, narrative form and performed better on memory tests (Haden, 1998). Relatedly, individuals can better organize and recall more information when they are instructed to form an impression, as opposed to being told to memorize information (Hamilton, Katz, & Leirer, 1980). Family communication patterns that predispose children to organize information into an overall "story" structure may therefore shape later information processing and memory patterns. Whether parents offer inherent versus extrinsic explanations for social phenomena such as group disparity can also affect children's ideological orientations and processing preferences (Hussak & Cimpian, 2018). Further, parental behaviors directly related to the provision and use of technology in the household may offer another pathway affecting a child's cognitive skills related to information processing (Helsper & Eynon, 2010). The dependent variables in this study, too, may be less suitable for detecting parental influence. Prior work has shown that family communication dynamics affect cognitive flexibility in information processing rather than motivations or decision strategies per se (Koesten, Schrod, & Ford, 2009).

Future research should not only examine the mechanisms underlying parental influence more closely, but also study the potential socializing effects of the broader information environment. This includes testing whether and how learning environments outside of the home may more effectively cultivate specific learning styles (Fan & Zhang, 2014, p. 209), and how changes in technology shape cognitive motivations and decision strategies. Because these cognitive elements often precede and affect many important political outcomes, their origins merit far more scholarly attention than they have thus far received.

Notes

- i) Epstein et al. (1996) found a weak, but significant association between the need for cognition and retrospective accounts of emotional abuse and other traumatic events in childhood (e.g., serious illness, parental divorce, or death).
- ii) The broader study of information processing patterns itself remains quite fragmented (Kozhevnikov, 2007).
- iii) We searched our dataset for plausible variables that might predict whether a student had a parent participate in the study or not, but found no significant predictors. A logistic regression including as predictors every independent and dependent variable used in any of the analyses reported in this paper, not only had no specific predictions that approached conventional levels of statistical significance, but also collectively did not predict significant variance in the dependent variable, $\chi^2(15) = 14.75$, $p = .470$.
- iv) These conditions varied the presence of entry into a lottery to win \$100 if participants voted correctly (importance of decision manipulation), ability to access articles presented in previous waves of the experiment (internet manipulation), and presentation of articles from only mainstream media sources versus inclusion of articles from 8 additional "alternative" sources (media diversity manipulation). The candidate-focused articles simulated headlines and content voters may commonly find online.
- v) We follow the lead of Lau et al. (2018) and consider total unique items, not total items (which would count opening the same item more than once as separate instances), because the latter "does not provide any additional information" (Online Appendix, p. 7). The total items measure yielded similar, albeit higher coefficients, when used in place of the unique items measure.
- vi) Details on sources of the parenting items are included in Appendix D (see [Supplementary Materials](#)).

vii) The items load largely onto one factor (Appendix Table F.1, see [Supplementary Materials](#)). The direction item yields the lowest loading. Because the exclusion of the direction item does not substantively increase the scale's reliability ($\alpha = .88$) and the Eigenvalue of the second factor is not sufficiently compelling, we opted to keep the direction item in the scale for theoretical reasons (i.e., it provides another measure of autonomy versus parental control over choices). Robustness checks revealed that results were not sensitive to the item's inclusion.

viii) The question wording was "How cold or warm do you feel towards the candidates? Please Rate [Democratic Senator John Smith] on the feeling thermometer scale below where 0 is very cold and 100 is very warm."

ix) The largest inconsistencies concern variables with the greatest homogeneity in our sample (e.g., education). Appendix Table B.3 (see [Supplementary Materials](#)) shows the correlations broken down into parent and child sub-samples as well as the ANES values for individuals 25 years old and under (for more direct comparison with students).

x) Partial correlations are also included in Appendix Table D.1 (see [Supplementary Materials](#)).

xi) We tested whether political discussion significantly moderated a two-stage model (i.e., children process political information in a manner similar to their parent's if politics discussed more frequently). Although our measure was just a rough proxy because the item queried political discussion within and outside the household, political discussion was only significantly associated with political interest and the need for cognition (see Appendix Table D.3, see [Supplementary Materials](#)). Its interaction with parental models was not significant for any other outcomes.

xii) We matched only on the media diversity and internet availability conditions because matching on all conditions, including party primary and importance of decision, resulted in too many subgroups (16) with too few parental observations in each for random matching.

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Competing Interests

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Supplementary Materials

The supplementary materials contain details for all of the statistics cited in the article. This includes correlation tables, regression tables, robustness checks, descriptive statistics, comparisons to correlations in additional studies, and wording for all survey items (for access, see Index of [Supplementary Materials](#) below).

Index of Supplementary Materials

Bougher, L. D., & Lau, R. R. (2020). *Supplementary materials to "The origins of information processing preferences in politics: Examining parental influence"*. PsychOpen. <https://doi.org/10.23668/psycharchives.2787>

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