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Educational Belief Systems among American Parents: Exploring the Relationship between Integration, Testing, and Enhanced Academics

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Abstract: Current research typically uses surveys to study parental preferences but examines the responses in isolation from each other. A key insight from the sociology of culture and political psychology, however, is that the meaning of responses in opinion data comes from their relationships with one another. To make progress in understanding the meaning of parental preferences, it is necessary to study their educational belief systems - the structural configuration of their attitudes related to schools. Using data from Phi Delta Kappa's annual survey on education, I employ correlational class analysis to identify three subsets of parents whose members configure their beliefs about integration, standardized testing, and enhanced academics in distinct ways. These three groups of parents are *convergents*, who see testing and integration as being aligned; *integration divergents*, who see standardized testing and integration as being in opposition; and *academic divergents*, who see standardized testing and enhanced academics as being in opposition. Compared to the full sample, these subgroups display more structure in the associations among their preferences. I also examine if the relationships between preferences and sociodemographic characteristics vary across subgroups and if

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political ideology predicts belief systems. I conclude with a discussion of implications for policy and future work.
Keywords: parental preferences; survey data; relational methods; belief systems

Sistemas de creencias educativas entre los padres americanos: Exploración de la relación entre la integración, las pruebas y los estudios académicos avanzados

Resumen: Las respuestas de investigación actuales generalmente usan encuestas para estudiar las preferencias de los padres, pero las examinan de forma aislada unas de otras. Sin embargo, una idea clave de la sociología de la cultura y la psicología política es que el significado de las respuestas en los datos de opinión proviene de sus relaciones entre sí. Para avanzar en la comprensión del significado de las preferencias de los padres, es necesario estudiar sus sistemas de creencias educativas, la configuración estructural de sus actitudes en relación con la escuela. Usando datos de la encuesta anual sobre educación de Phi Delta Kappa, utilizo un análisis de clase correlacional para identificar tres subconjuntos de padres cuyos miembros configuran sus creencias sobre la integración, las pruebas estandarizadas y la mejora académica de distintas maneras. Estos tres grupos de padres son: convergentes, que consideran que la prueba y la integración están alineadas; la integración divergente, que ve las pruebas estandarizadas y la integración como opuestas; y divergentes académicos, que ven las pruebas estandarizadas y los académicos mejorados como opuestos. En comparación con la muestra completa, estos subgrupos muestran más estructura en las asociaciones entre sus preferencias. También examino si las relaciones entre las preferencias y las características sociodemográficas varían entre los subgrupos y si la ideología política predice los sistemas de creencias. Concluyo con una discusión de las implicaciones para la política y el trabajo futuro.
Palabras-clave: preferencias de los padres; datos de la encuesta; métodos relacionales; sistemas de creencias

Sistemas de crenças educacionais entre pais americanos: Explorando a relação entre integração, testes e acadêmicos avançados

Resumo: A pesquisa atual normalmente usa pesquisas para estudar as preferências dos pais, mas examina as respostas isoladamente umas das outras. Um insight chave da sociologia da cultura e da psicologia política, no entanto, é que o significado das respostas nos dados de opinião vem de seus relacionamentos uns com os outros. Para avançar na compreensão do significado das preferências dos pais, é necessário estudar seus sistemas de crenças educacionais, a configuração estrutural de suas atitudes em relação às escolas. Usando dados da pesquisa anual da Phi Delta Kappa sobre educação, emprego a análise de classe correlacional para identificar três subconjuntos de pais cujos membros configuram suas crenças sobre integração, testes padronizados e acadêmicos aprimorados de maneiras distintas. Esses três grupos de pais são: convergentes, que veem o teste e a integração como alinhados; divergentes de integração, que veem testes padronizados e integração como sendo opostos; e divergentes acadêmicos, que vêem testes padronizados e acadêmicos aprimorados como sendo uma oposição. Em comparação com a amostra completa, esses subgrupos apresentam mais estrutura nas associações entre suas preferências. Também examino se as relações entre preferências e características sociodemográficas variam entre os subgrupos e se a ideologia política prevê sistemas de crenças. Concluo com uma discussão das implicações para a política e o trabalho futuro.
Palavras-chave: preferências parentais; dados de pesquisa; métodos relacionais; sistemas de crenças

Educational Belief Systems among American Parents: Exploring the Relationship between Integration, Testing, and Enhanced Academics

It is important to understand parents' preferences and opinions about schools because they influence policymakers and shape the education system (Billingham & Hunt, 2016; Lareau & Goyette, 2014). Survey research has found that most parents, regardless of background, rank strong basic academics like math and reading as their highest priority in a school (Delpit, 1995; Moe, 2001; Zeehandelaar & Winkler, 2013). After this shared preference, however, there is significant variation in secondary preferences, including economic and racial diversity (Stewart & Wolf, 2016), high standardized test scores (Tedin & Weiher, 2011), and enhanced academic offerings like advanced and STEM courses (Bullock, 2017). These secondary preferences may be associated with parental characteristics like race and ethnicity, class, educational background, and political ideology (Friedman et al., 2006; Lay & Stokes-Brown, 2009; Taylor Haynes et al., 2010; Zeehandelaar & Winkler, 2013).

As work in cultural sociology and political psychology has shown, however, the standard ways of analyzing survey data obscure the *relationality* and *multiplicity* of beliefs (DiMaggio et al., 2014). First, relationality refers to the principle that the meaning of an individual attitude is determined by its connection to other attitudes. For example, two White parents might both respond on a survey that they are not in favor of efforts to integrate schools but do so for different reasons. One parent may oppose such efforts because she believes in the importance of neighborhood schools while the other parent opposes them because he thinks integration will negatively affect standardized test scores. The meaning of integration for each parent cannot be understood, then, without locating it in the larger structure of their beliefs. Second, and related, multiplicity refers to the principle that within a given population, there may be multiple subgroups that structure their beliefs in similar ways. In other words, our two hypothetical parents above may be representative of a subgroup in the larger population whose beliefs about education are connected in a similar way. This multiplicity may be missed when statistical analysis is performed on a whole population and in doing so averages across subgroups.

To account for relationality and multiplicity, survey researchers have increasingly turned their attention to *belief systems*, "configuration[s] of ideas and attitudes in which the elements are bound together" (Converse, 1964, p. 207). At its most basic, the theory of belief systems posits that beliefs are organized in a way that suggests at least some coherence and structure. Rather than describing particular beliefs, the research focus turns to the issues of how multiple beliefs cohere into larger structures and the properties of those structures. A major goal is to inductively derive groups within a larger population, based on shared belief systems. Research has shown that these belief systems are relevant for understanding a range of attitudes and preferences, including which political party citizens vote for (Jost, 2006), desire to engage in protest (e.g., Choma et al., 2020), degree of concern about the environment (e.g., Cruz, 2017), and prejudice toward outgroups (e.g., Brandt & Crawford, 2020).

The study of belief systems has largely remained within the domain of politics, however, and has not yet been applied to education. In this paper, I show the utility of studying educational belief systems. In doing so, the remainder of the paper unfolds in the following way: First, I summarize the current relevant literature on parental preferences and attitudes. Second, I discuss the study of belief systems in more detail. Third, I describe the data used for the analysis. Fourth, I describe and present the results of my analysis and the three educational belief systems I inductively identify among American parents. Fifth, I show that the relationship between individual characteristics and preferences differs by belief systems. Finally, I discuss the implications of this work for future research on educational beliefs as well as policy implications.

Current Work on Parental Preferences

While parental preferences have long been an important driver and shaper of the American education system, research has significantly increased over the past several decades as school choice has become a central feature of the educational landscape. Research on parental preferences has consistently shown that parents of all backgrounds prioritize basic academics over all other criteria (e.g., Harris & Larsen, 2014; Stein et al., 2011). We know, however, that parents' actual choices are complicated and involve a weighing and balancing of secondary preferences (e.g., Lareau & Goyette, 2014; Reardon & Bischoff, 2011). While current research attempts to explain secondary preferences in terms of the sociodemographic characteristics of parents, I argue that the relationality and multiplicity captured in the study of belief systems offer another avenue of understanding. I will return to the discussion of belief systems in the next section, but first I will discuss three important secondary preferences identified in the literature and what is known about their relationship to parent characteristics.

Perhaps the most studied secondary preference of parents is the desire to send their children to racially, ethnically, and socioeconomically diverse schools (e.g., Billingham & Hunt, 2016; Holme, 2002; Quillian, 2014; Roda & Wells, 2013). While almost all parents say that equality is an important principle for schools to foster (Bushaw & Lopez, 2012), Black and politically liberal parents tend to rank school diversity higher than other groups as a desired school characteristic (Zeehandelaar & Winkler, 2013). White parents, in contrast, are less like to say it is an important factor in their school choices (Tedin & Weiher, 2011). It is worth noting, however, that work examining revealed rather than stated preferences frequently finds that all parents, regardless of what they report in surveys or interviews, choose schools where their child will not be in the racial or ethnic minority (Billingham & Hunt, 2016; Prieto et al., 2018).

The question that traditional approaches to survey research cannot answer, however, is how parents' beliefs about integration relate to their beliefs about other valued school characteristics. Beyond basics academics like math and reading, extant research has looked at parent preferences related to two other aspects of school academic life: standardized testing and enhanced academic offerings like advanced courses (e.g., Advanced Placement [AP] and International Baccalaureate [IB]) and Science, Technology, Engineering and Math (STEM) curriculum. First, since the enactment of No Child Left Behind in 2001, standardized test scores have become an increasingly common way for parents and the public to evaluate schools (Lincove et al., 2016; Schneider et al., 2000). Research has found significant variation, however, in how different groups of parents feel about testing with Latino, low socio-economic status (SES), and perhaps Black, parents are more likely than White and high SES parents to value schools that prepare students for standardized testing (Lay & Stokes-Brown, 2009; Zeehandelaar & Winkler, 2013).

Second, research on preferences regarding advanced courses and STEM education is connected to the narrative common among some parents that they are necessary for competitive post-secondary education and success in the new global knowledge economy (Atkinson & Mayo, 2011; Finn & Scanlan, 2020). Some research has found that all parents value STEM education (Zeehandelaar & Winkler, 2013) but other work has found that family background influences actual STEM course-taking and STEM-related career aspirations (Mau & Li, 2018). Research has also found that a small group of parents are willing to commute significant distances for their children to attend schools with specific advanced curricula like AP, IB, or STEM not available in their local schools (Yoon et al., 2022).

While research has not systematically studied the relationship between these preferences for integration, testing, and enhanced academics, the literature does point to a few associations.

For instance, when parents send their children to racially balanced charter schools it is often because they are attracted to a specific academic program or specialized aspects of the curriculum like advanced or STEM courses (Villavicencio, 2013). Research has also found that some parents desire both diversity and enhanced academics but report difficulty finding schools that can offer them both (Roda & Wells, 2013). In such cases, they are more likely to prioritize academics over diversity. We also know that many parents are concerned that an emphasis on testing will crowd out enhanced academics (Houston, 2019; Lay & Stokes-Brown, 2009).

Notably, the research reviewed above examined central tendencies in parental preferences or associations between preferences and sociodemographic characteristics within full survey samples. As argued, however, this approach may miss important structure because it does not account for relationality or multiplicity in the data (DiMaggio et al., 2014). While current survey research can tell us about parents' preferences concerning particular school characteristics it cannot tell us what those attitudes mean for parents. This is because the meaning of a given survey response comes not from individual attitudes but rather from the relationality among them. Moreover, it cannot tell us if there are subgroups of parents in the larger population who structure their preferences in similar ways. To capture these aspects of parental preferences, we need to turn to the study of belief systems.

Studying Belief Systems

As described above, the study of belief systems posits that people's attitudes and preferences are structured in non-random ways (Converse, 1964). Moreover, belief systems have been shown to shape a wide range of attitudes and behaviors (e.g., Brandt & Crawford, 2020; Duckitt & Sibley, 2010; Jost, 2006; Jost et al, 2008). In this work, the focus shifts from a question of what preferences and attitudes people hold to a question of how those preferences and attitudes are organized. The underlying logic of a belief system inheres in the connection between elements and so they must be examined in relationship with one another, not independently.

Moreover, because these relationships may vary across groups, the study of belief systems avoids a priori assumptions about which preferences and attitudes will correlate. Otherwise, the researcher risks imposing a particular pre-defined understanding on people's belief systems. Decomposing the population into predetermined socio-demographically derived groups, for example, may mask heterogeneity in belief systems. To avoid this, researchers map communities of shared meaning, whose members view the issue through similar interpretive lenses but whose boundaries may not be coterminous with race, class, or political ideologies.

To be clear, then, the goal of identifying belief systems is not to cluster individuals with similar attitudes but rather clusters individuals with similar *relationships between attitudes*. This is because sharing a belief system "does not imply having identical attitudes or behaviors; rather, it suggests being in agreement on the structures of relevance and opposition that make actions and symbols meaningful" (Goldberg, 2011, p. 1402). For example, two parents who take different positions on multiple educational issues may nonetheless share the same belief system if they conceptualize the relationships between issues in a similar way.

To illustrate this, imagine two parents filling out a survey about the following four items where responses are on a scale of 1 to 5 with 1 being highly opposed and 5 being highly supportive: increased school funding; policies to reduce disciplinary disparities; alternative teacher certification programs; and vouchers. The first imaginary parent scores the first two items a 5 and the second two a 1. The second imaginary parent, in contrast, scores the first two items a 1 and the second two a 5. With standard statistical methods, we would treat these two respondents as having different attitudes about education, but relational approaches recognize that the *structure* of their belief system is the same. They see, in other words, the same beliefs being related or in opposition to each other even

though they have different normative positions on every item. A third imaginary parent who responded with a 3 to all four questions would, in contrast, ascribe to a different belief system than the first two respondents.

Research has consistently found that partisan and ideological identities are perhaps the strongest influence on the nature of belief systems (Bakker et al., 2020; Boutyline & Vaisey, 2017; Brandt et al., 2019). First, partisans tend to have more structured belief systems than non-partisans because they follow shared political party norms regarding how elements of their belief system should fit together. Moreover, even though they normatively view issues differently, strong partisans on either side of the political aisle are likely to share a belief system because their beliefs are formed in opposition to one another (Baldassarri & Gelman, 2008). In other words, highly liberal and highly conservative people often share a belief system because they are having the same 'conversation' even if they disagree about the values under discussion. It is not clear, however, if this phenomenon holds in education. In recent years, education has been less partisan than other central policy domains (Houston, 2019). This leaves us with three questions: 1) Are there identifiable groups of American parents who structure their preferences about education differently from each other? 2) If so, does the relationship between individual characteristics and school preferences vary across educational belief systems? and; 3) Do highly ideological parents structure their belief systems in similar ways to one another?

Data and Measures

The analysis is carried out using data from Phi Delta Kappa's 2017 annual survey of educational attitudes and behaviors (PDK International). These data allow me to address my research questions, as they cover a wide range of educational attitudes. The survey was carried out between May 4 and May 21, 2017. The sample size for the 2017 survey was 1,588 with an oversample of parents of public school students. These 588 parents and their responses are the units of observation for this study.[1] The unit of analysis, in contrast, are groups of respondents who structure their beliefs in similar ways.

Educational Preferences

To identify preferences, I focus on seven items, summarized in Table 1, to assess respondents' views about school characteristics.[2] These seven items are classified into three different domains. The first area, *integration,* captures respondents' perceptions about the value and importance of racial and economic diversity in their children's schools.[3] The second area, *testing,* asks

[1] Of these, 541 parents were included in the final analysis after 47 dropped after listwise deletion. I do not impute missing values because this would be at variance with the relational nature of CCA (see Baldassarri & Goldberg, 2014).

[2] This number of items used in this analysis is similar to that used in other relational work on public opinion (e.g., DiMaggio & Goldberg, 2018).

[3] Because the three educational beliefs scales are based on responses to all seven constituent items, I impute "don't know" responses as midpoints on the variable scale (see DiMaggio & Goldberg, 2018 for an example of this approach). Each response is normalized on a scale with mean 0 and standard deviation 1. The *testing, integration,* and *enhanced academics* constructs were created by averaging responses in a given domain of educational beliefs.

Table 1
Items from the 2017 Phi Delta Kappa Survey

Code	Question	Coding	Scale: from 1 to	Mean	STD
QTEST	For each item I name please tell me how important it is in school quality – extremely important, very important, somewhat important, not so important or not important at all. **How well students do on standardized tests**	from not at all important to extremely important	5	3.38	1.12
CONF	Thinking of the standardized tests your (oldest) child in public school takes – how confident are you that these tests do a good job measuring how well your child is learning? Are you very confident of that, somewhat confident, not so confident or not confident at all?	from not confident at all to very confident	4	2.60	1.01
MEAS	Do you think that standardized tests do or do not measure the things about your (oldest) child's public school education that are most important to you personally? GET ANSWER, THEN ASK: Do you feel that way strongly or somewhat?	from strongly feel that they don't to strongly feel that they do	4	2.38	1.09
QCLASS	For each item I name please tell me how important it is in school quality – extremely important, very important, somewhat important, not so important or not important at all. **Having advanced academic classes**	from not at all important to extremely important	5	4.12	0.84
QSTEM	For each item I name please tell me how important it is in school quality – extremely important, very important, somewhat important, not so important or not important at all. **Having technology and engineering classes to help students prepare for careers in those fields**	from not at all important to extremely important	5	4.25	0.74
RINT	How important is it to you that the public schools in your community have a mix of students from different (INSERT ITEM) – is this extremely important, very important, somewhat important, not so important or not important at all? **Racial and ethnic backgrounds**	from not at all important to extremely important	5	3.61	1.27

EINT	How important is it to you that the public schools in your community have a mix of students from different (INSERT ITEM) – is this extremely important, very important, somewhat important, not so important or not important at all? **Economic backgrounds**	from not at all important to extremely important	5	3.41	1.34

Note: items are reverse-coded for the table.

respondents how well they think standardized tests capture important outcomes. Finally, *enhanced academics* concerns the importance of offering advanced and STEM courses.[4]

Sociodemographic Characteristics

For the regression models used to study the relationship between individual characteristics and belief systems, I included the following sociodemographic characteristics: gender (dummy variable with 1=female), age, race as a binary variable (where 1 = white), education level, income, whether the respondent identified either a Democrat or Republican, and a constructed scale of the strength of political ideology (where 2=very liberal *or* very conservative; 1 = somewhat conservative *or* somewhat liberal; 0 = moderate).

Analytic Strategy

My analytic strategy has four parts. First, I analyze the data as if it were homogenous with respect to belief systems. I construct scales associated with, *integration, testing,* and *enhanced academics*. I show that in the full sample these three constructs are not correlated with one another. These results alone might seem to suggest that there is no structure to public opinion about these three categories of educational beliefs. However, the configuration of these three educational attitudes may vary, yielding different educational belief systems among different segments of the parents.

The second part of the analysis consists of looking for heterogeneity in belief systems within the full sample using correlational class analysis (Boutyline, 2016). As described above, CCA partitions respondents into classes whose members may have different attitudes "but agree on relationships of affinity and opposition around which opinion domains are structured" (DiMaggio et al., 2018, p. 33). That is, it aggregates respondents who do not necessarily agree on the issues themselves, but who do agree on the relationship between issues. The result is the identification of subgroups of respondents who organize meaning in a similar way. More specifically, two response vectors are operationalized as following the same belief system if there is a linear transformation that can produce one set of responses from the other. The degree of linear dependence between vectors is measured using Pearson's correlation (Boutyline, 2017).

Whereas factor analysis would impose a single structure on the data, CCA divides the data into groups of individuals who exhibit distinctive response patterns but who also do not necessarily hold the same opinions. Moreover, this occurs inductively as CCA entails no assumptions about how opinions are patterned or relationships between opinions and sociodemographic characteristics. After identifying belief systems, CCA assigns respondents to them. The goal is to identify subsets of respondents who organize their educational beliefs in similar ways even if their actual answers differ. I identify three such subsets of respondents with distinctive patterns of association among the educational belief items. The CCA was performed using the *corclass* package in R (Boutyline, 2016).

Third, to explore if the relationships between individual characteristics and preferences vary across belief systems, I ran a series of four ordinary least squares regressions predicting parental preferences about integration – one regression each for the full sample and the three identified belief systems. I chose preference for integration as the dependent variable because of the extant literature's interest in parents' views about racial, ethnic, and socioeconomic diversity. Finally, I test

[4] The study of education belief systems in this paper was theoretically motivated by the complex relationship found I in the literature between preferences for integration and different aspect of school academics. Ideally, an analysis such as this would include other questions related to central policy issues like school choice, teacher quality, and disciplinary disparities but the paucity of public opinion data about education limited my ability to include these.

the possibility that politically ideological parents are more likely to share a similar educational belief system because, generally, liberal and conservative positions are formed in opposition to one another (Baldassari & Gelman 2008). To do so, I ran a multinomial logistical regression predicting belief system membership by the strength of parent's political ideology.

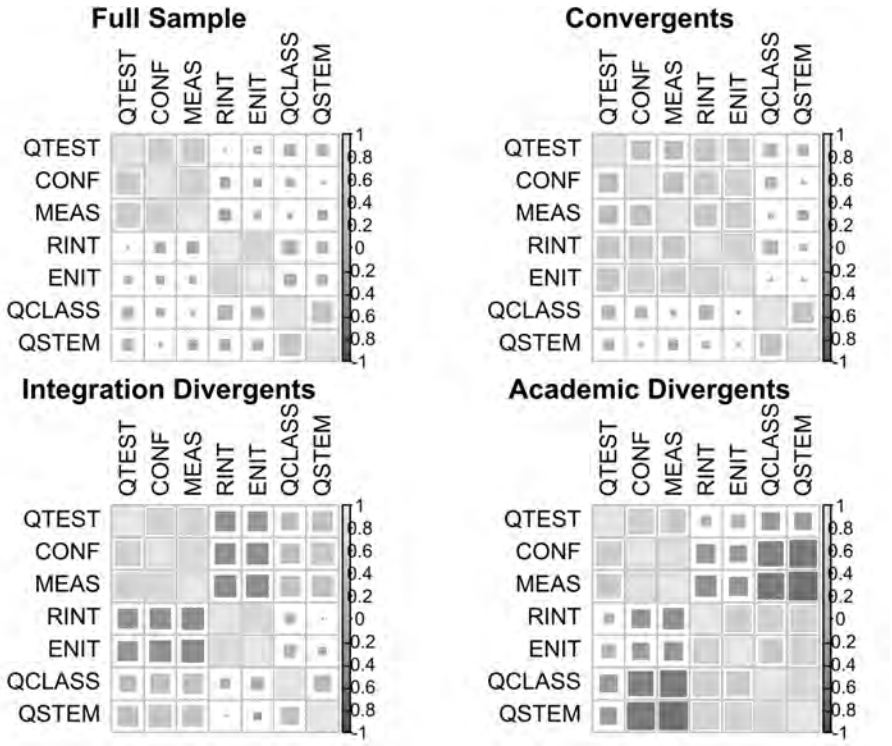
Results

CCA was used to identify subgroups of parents within the sample that view the domains of integration, testing, and enhanced academics as connected by distinctive patterns of consistency and opposition. The CCA yields three clusters, representing 38.4%, 40.9%, and 20.7% of the respondents respectively. While other clustering approaches would show the mean item scores within each cluster, this would not help us here. This is because, as discussed earlier, CCA clusters may include respondents with very different attitudes – but with the same *structuring* of attitudes. Therefore, I present the correlation matrix of each belief system.

Relationships between items are presented in Figures 1 and 2 below as a series of heat maps for both the full sample and for identified subclass. The heat maps in Figure 1 report the correlations among all items. The heat maps in Figure 2, in contrast, shows the relationship only between the three different attitudinal constructs (i.e., integration, testing, and enhanced academics). In all the heat maps, the size and color provide two ways to visualize the correlation between row and column variables. First, the color represents the *relative* value of the correlation, where the lighter the square, the higher the relative correlation. The size represents the *absolute* value of the correlation, where the larger the square, the higher the absolute correlation. Note that all three of the classes that emerged show substantially more correlation among items and constructs than appears in the full sample.

Figure 1

Correlation Matrices of All Opinion Items



Overall Sample

As shown in the upper left-hand corner of Figure 1, while the individual items making up the *testing*, *integration*, and *enhanced academics* scales correlate internally, there is no significant association between scales (the highest correlation between items in different scales is .17, with most inter-scale correlations being less than .05). The upper left-hand corner of Figure 2 shows the reduced correlation matrix of the full sample. Here we see that testing is associated with enhanced academics at .05 and integration at .16. Testing and integration, in turn, are associated only at -.05. We see evidence, in other words, that educational beliefs among the general public of parents have very little structure.

I will show, however, that this lack of structure in the full sample masks the structural heterogeneity of underlying American parents' educational attitudes. Only by identifying subsets of respondents who structure their attitudes in the same way can we detect this underlying structure. CCA identifies three subclasses within the overall sample who not only demonstrate more structure in their beliefs than the overall sample reveals but whose belief systems differ significantly from those of other subclasses. I discuss each of these three classes below.

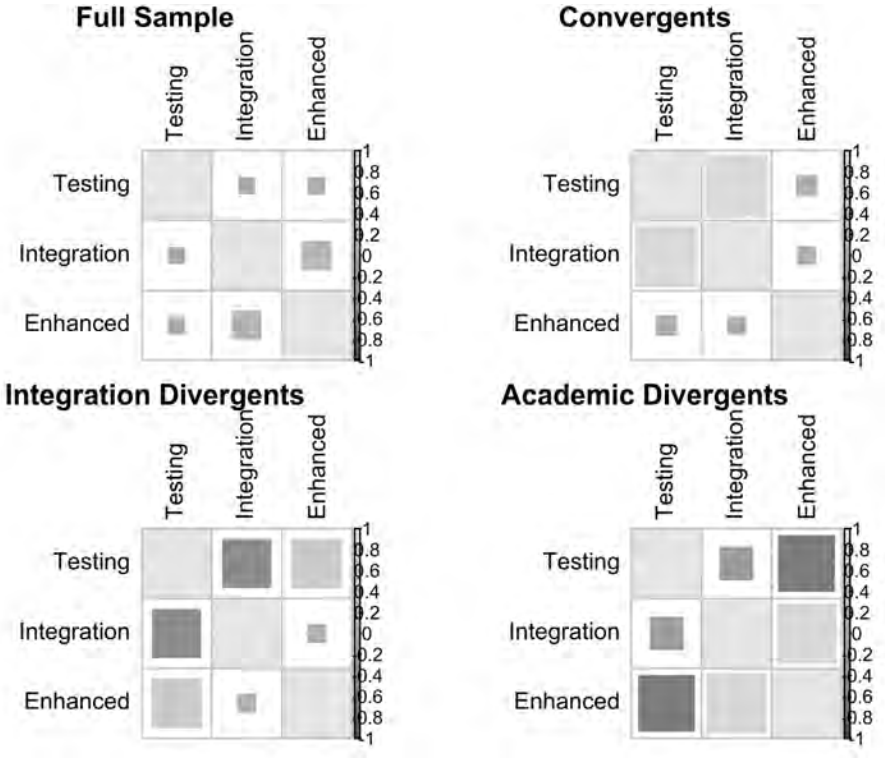
Class 1: Convergents

For approximately 38% of the respondents, beliefs about testing and integration are positively correlated at .75. None of the other possible associations between domains exceeds .08, however. The upper right-hand corner of both Figures 1 and 2 shows these relationships. These findings suggest that for respondents in this class testing and integration are not in opposition. The findings also show that the other educational beliefs of respondents in this class do not constrain their views about enhanced academics. But they do not indicate the direction of responses for

testing and integration. Like other relational approaches to belief systems, CCA groups respondents regardless of whether they view both testing and integration positively or negatively.

Figure 2

Correlation Matrices of Educational Belief Domains



Class 2: Integration Divergents

A positive correlation between testing and enhanced academics, and a negative correlation between testing and integration, define this class. It is the largest, accounting for 40.9% of the sample. The lower left-hand corner of Figures 1 and 2 shows its correlation matrices. For respondents in the class, beliefs about testing and enhanced academics are correlated at .47. In contrast, testing and integration are negatively correlated at -.45, and academic and integration correlated only at .06. Overall, then, respondents in this class hold a view that sees academic and testing as going together and testing as being in opposition to integration. Views on testing are thus very important for this group, as they are associated with both other educational domains.

Class 3: Academic Divergents

The third class is the smallest, representing approximately 20.7% of the sample. The lower right-hand corner of Figures 1 and 2 shows its correlation matrices. This class is defined by a positive relationship between enhanced academics and integration (correlation = .70) and a negative relationship between enhanced academics and testing (correlation = -.62). Beliefs about testing and integration have a modest negative association (correlation = -.21). This is a group defined, in other words, by the expectation that enhanced academics and integration go together but that enhanced academics and testing oppose one another.

Ordinary Least Squares Regressions

Table 2 shows the results for the four regressions predicting parental preferences for integrated schools for the full sample and the three belief systems. In the full sample, we see that having a higher level of education is associated with a stronger preference for integration while being a Republican is associated with a weaker preference. Looking across the other three regression results, however, we see that the association between parental characteristics and preference differs across belief systems. First, looking at the results for the convergent belief system, we see that the higher a parent's income, the less likely they are to prefer integration. Again, this group of parents sees integration and testing as being associated, so negative perceptions about integration would be associated with negative perceptions about testing.

Next, looking at the results for the integration divergent belief system, we see that, as with the full sample, education is associated with a stronger preference for integration while being a Republican is associated with a weaker preference. This is notable because once belief systems are accounted for, the association between integration preference and education and being a Republican found in the full sample only holds for parents who see standardized testing and integration as being in opposition. Finally, looking at the results for the final model, we see that white parents are significantly less likely to prefer integration compared to non-white parents if they have an academic divergent belief system. In the full sample, in contrast, white parents are no more or less likely to prefer integration than non-white parents.

Table 2

Regressions Predicting Preferences for Integrated Schools Within Belief Systems

	Dependent variable:			
	Preference for Integration			
	Full Sample	Convergent	Integration Divergent	Academic Divergent
Constant	4.020***	4.595***	3.245***	4.542***
	(0.183)	(0.273)	(0.329)	(0.299)
White	-0.031	-0.033	0.217	-0.593**
	(0.135)	(0.204)	(0.241)	(0.215)
Income	-0.027	-0.068*	-0.002	-0.009
	(0.018)	(0.028)	(0.031)	(0.029)
Education Level	0.091*	0.029	0.170**	0.089
	(0.036)	(0.056)	(0.065)	(0.058)
Democrat	0.344*	0.309	0.375	0.121
	(0.147)	(0.221)	(0.269)	(0.226)
Republican	-0.525**	-0.368	-0.969**	0.116
	(0.174)	(0.268)	(0.303)	(0.285)
Observations	541	208	221	112
R^2	0.055	0.065	0.103	0.106
Adjusted R^2	0.046	0.042	0.082	0.064
Residual Std. Error	1.477 (*df* = 535)	1.384 (*df* = 202)	1.677 (*df* = 215)	1.034 (*df* = 106)
F Statistic	6.219*** (*df* = 5; 535)	2.827* (*df* = 5; 202)	4.915*** (*df* = 5; 215)	2.526* (*df* = 5; 106)

*Note: *p**p***p*<0.001

Multinomial Logistical Regressions

Finally, Table 3 shows the results of the multinomial regression models predicting if highly liberal and highly conservative parents are more likely to have the same belief systems. There we can see that the stronger a parent's ideology (either liberal or conservative), the more likely they were to

be in the subclass of parents holding the *integration divergent* belief system compared to the reference group, the *convergent* subclass. That is, both more liberal and more conservative parents are more likely than non-ideological parents to share a belief that school integration and standardized testing are at odds with one another. More ideological parents were also no more likely to hold an *academic divergent* belief system compared to a convergent one.

Table 3

Multinomial Logistic Regression on the Education Belief Systems

	Integration Divergent (vs. Convergent)	Academic Divergent (vs. Convergent)
Ideological	0.393**	-0.010
	(0.131)	(0.163)
White	0.098	0.347
	(0.200)	(0.244)
Income	-0.006	0.023
	(0.028)	(0.033)
Education	-0.003	-0.082
	(0.056)	(0.068)
Intercept	-0.258	-0.584
	(0.282)	(0.334)
Akaike Inf. Crit.	1,150.813	1,150.813

Note: $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$

Discussion and Conclusion

This paper has sought to answer three interrelated questions. First, do different subgroups of parents understand the relationship between academics, choice, diversity, and standardized testing differently (i.e., are there different belief systems among American parents)? Second, does the relationship between individual characteristics and educational preferences, specifically preference for integrated schools, vary across belief systems? And third, do highly partisan parents (i.e., strongly conservative and liberal parents) structure their belief systems similarly to each other even if they hold different normative positions on the issues?

In terms of the first question, I have shown three inductively identified subgroups of parents who structure their preferences in different ways. While responses in the full sample appeared to have little structure, using CCA to partition the data into three classes of responses revealed distinct structures of relationships between educational beliefs related to testing, integration, and enhanced academics. Importantly, testing is the only construct that is positively associated with at least one other construct in every class. This suggests that attitudes about testing are important for shaping the educational belief systems of Americans but also that there is variation in how those beliefs are related to other preferences like integration and enhanced academics.

In terms of the second question, we see that the relationship between parent characteristics and preferences related to school integration differs across belief systems. Looking at this relationship in both the full sample and within subclasses demonstrates the utility of the relational approach to opinion data about education. Not only do the models within belief systems differ from one another, they generally show improved predictive power when compared to the full model that assumes homogeneity within the entire sample. Notably, this is true even though the sample was partitioned solely by educational preferences and not by any information about individual characteristics. And even though the subgroup models perform better than the full sample model, the amount of variance explained is typically only modest. This presents the opportunity for further theory generation and testing about what additional characteristics should be included in future analyses to better understand differences in classes.

With the third question, we see that highly ideological parents are more likely than less ideological parents to hold an integration divergent belief system. Given that there is a positive relationship between strong political ideology and political behaviors, including voting (Palfrey & Poole, 1987), those parents who see integration and standardized testing as incompatible may have an outsized influence on politicians. In an educational system that is unlikely to get rid of standardized testing any time soon, the fact that more politically active parents might have greater skepticism about the possibility of testing and integration successfully coexisting potentially poses significant barriers to garnering public support for policies fostering integration.

The results as a whole have other implications for policy and practice. For one, they suggest that policy interventions should focus not only on the issue at hand but should also account for where that issue is located within parents' belief systems. This might mean creating different interventions or targeting the same intervention differently. Policies designed to increase school integration, for example, may try and appeal to parents differently depending on where integration sits in their belief system. Performance growth on standardized tests will not necessarily draw parents to diverse schools if, as in the integration divergence group, they see diversity and testing as being inconsistent with each other. Conversely, if parents, as in the convergent group, see integration

and testing as consistent, targeting them with information about performance growth might be an effective strategy.

There are also limitations to this analysis that can be addressed in future work. Most notable are the limitations of the data, both in terms of its coverage of topics as well as the nature of the data itself. In terms of the former, future work should be even more theory-driven and collect original data with a broader range of important areas of parental preferences. In terms of the latter, survey data is not designed to capture relationality. Newer work on belief systems uses methods like association tasks to more directly study respondents' understanding of the relationship between preferences and attitudes (e.g., Hunzaker & Valentino, 2019). Finally, research on belief systems has, like this paper, typically used cross-section data. It is not possible with such data, however, to distinguish between within and between-person variation (Brandt & Morgan, 2022). Future work should use longitudinal data to isolate individual-level belief systems to better understand how they shape parental choices and behaviors.

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