Title
Institutional Heterogeneity in American Public Education: Theory, History, and Applications

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Publication Date
2013

Peer reviewed|Thesis/dissertation

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A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Sociology

in the

Graduate Division

of the

University of California, Berkeley

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Spring 2013

Abstract

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Over the course of the last fifty years, public education in the United States has seen significant institutional change. Accountability systems have altered evaluative control moving the basis from structural conformity and process controls to output measures. Charter school laws have created a new organizational sector of publicly funded schools directly overseen by new organizational actors where instrumental decision making is decentralized and the degree of autonomy from district administrative structures, state regulations, and collective bargaining bodies are variable. The creation of new alternative routes of teacher recruitment and certification has deteriorated the stable arrangements between universities, unions, and districts that governed teacher training and employment. I argue that these changes have put strain on the ability of the dominant neoinstitutionalist perspective in organization theory as it's been applied to the sociology of education. The goals of this dissertation are threefold. First, I provide a foundation for an integration of neoinstitutionalist, resource dependence, and population ecology perspectives into a framework for the analysis of organizational behavior in the field of education. Second, I provide a broad institutional history of the key changes mentioned above. Finally, I explore two key research questions the stem from this theoretical and historical work.

Chapter 1 outlines the dissertation as a whole. Chapter 2 critiques neoinstitutionalist approaches and takes steps to outline a basic theoretical approach integrating insights from other key organizational perspectives. In chapter 3 I outline the essentials of the new landscape of schooling. In chapter 4 I offer an institutional history of the key changes in the system of public education showing how they've changed the environments faced by schools and districts. In chapter 5 I examine the inter-organizational processes shaping the adoption and growth of charter schools in California. In chapter 6, I move to the individual level to examine how the organizational diversification spurred by the growth of charter schools impacts the movement of students between schools in a large urban school district. I conclude by discussing heterogeneity in the landscape of American public schooling with regard to the expansion of the charter school sector, describe recent changes in federal accountability, and discuss the need for research with a new theoretical orientation in the sociology of education.

Dedication

To my friends for giving me perspective, to my parents for never doubting my abilities, to my sister for supporting me in all of my endeavors, to my wife Gina for giving me the strength to persevere through my darkest hours and for bearing the weight when I was weakest, and to my daughter Mirella for stoking the fires of inspiration and joy and lending meaning and purpose to this work and to all of my work.

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Chapter 1 - Introduction

The last fifty years have seen far reaching changes in the landscape of American education. This is particularly true in large urban school districts where a variety of political, economic and demographic changes have worked to destabilize existing institutional structures, and open up the opportunity for redefinition of the actors, rules and relationships that make up the organizational field of public education. In many of these districts, population changes have played havoc with public school enrollment emptying districts in Midwestern cities and stretching those in the Southwest beyond capacity. Economic pressures from the collapse of state budgets and increasing reliance on private foundations for funding ambitious education reform projects has continued to push these districts towards market like reform and a restructuring of the relationship between district offices and the schools they manage. This includes the rapid expansion of the charter school sector introducing a whole population of new organizations into the field. At the same time, new results oriented policies were put into place by political actors responding to pressures for reform. The accountability systems put in place by state governments over the course of the 1990s and reinforced with NCLB shifted the environmental pressures schools are subject to, as well as the political position of schools and districts, opening up the possibility for executive coups in large districts from New York to Los Angeles, and for reformers to push districts to expand charter schools, take on teacher unions, and close failing schools (Bulkley, Henig, and Levin 2010; Henig and Rich 2003; J. Murphy and Shiffman 2002; Peterson and M. R. West 2003b; Ravitch 2010).

These dramatic changes have put organizational sociologists interested in education at a conceptual disadvantage. The intellectual landscape of organizational research on schools hasn't progressed significantly beyond the point it reached in the late 1980's with the dominance of neoinstitutionalism in organization theory. In many ways, this perspective pioneered the enduring emphasis by researchers on the effects of institutional environments on organizational form and behavior. Until this point, organizational structures and behavior had largely been seen as the results of strategic decisions by managers reading and responding to the technical demands faced by their organizations (Miles and Snow 2003). Meyer and colleagues suggested that organizations for which technical concerns were not paramount adopted policies and structures aimed at conforming to prevailing categorical demands emanating from governing authorities in order to enhance their legitimacy (J. W. Meyer and Rowan 1977). The essence of this account of public schools remains foundational today. The changes that swept across the terrain of public education over the last fifty years however have significantly altered the environments that all schools face and thus raise questions about the appropriateness of this account for the current state of schools. I argue that neoinstitutionalism needs to be integrated with insights from nearby theoretical traditions in order to deal with the far reaching changes in accountability, public school choice, and teacher supply.

Following the lead of neoinstitutionalist thinking, we need to continue to take organizational fields seriously and consider the ways in which organizations are constrained by

their relationships to one another. In the world of the sociology of education, research which has done this has come from the neoinstitutionalist camp and has usually focused on how schools negotiate the symbolic landscape of the political in order to survive and secure resources. This work has almost exclusively looked at the relationships between schools and their governing bodies (districts, state education agencies, etc.) detailing how demands by these governing bodies shape the formal structural characteristics of organizations without changing the technical activities or outcomes of schools (Bidwell and Dreeben 2006). For example, in terms of charter schools, this sort of analysis focuses on how these organizations are subject to the same institutional forces as other schools suggesting that they may show symbolic differences from traditional public schools, but the actual working of the school will be the same as long as the expected roles of teachers, students, and administrators are similar, and the schools need to adhere to the rules to maintain legitimacy (Huerta 2009). After the institutional reforms mentioned above, the mechanisms outlined by neoinstitutionalism should still be in place, but as environments differentiate, both institutionally and technically, the results of these mechanisms will be divergent organizational change rather than the isomorphism that neoinstitutionalism focuses on.

Changes in the world of public education have been both widespread, and, in many ways, divergent. The shifting environmental pressures on schools have introduced increasing heterogeneity in terms of both magnitude and character into the institutional and technical demands on all types of schools. While national accountability legislation (NCLB) instituted an imperative for states to develop their own standards and testing systems, forcing states to ramp up technical demands on schools, the specifics of each state's accountability policies remains highly variable (Carnoy and S. Loeb 2002). Similarly, while charter school expansion has been supported by Federal policies, the specific charter school laws passed by each state differ in a wide variety of ways. Some states have passed laws making charter schools easy to start, while others have passed laws limiting charter schools to very specific missions, circumscribing the types of charter granting authorities and restricting their funding opportunities. Even within a given state, some districts have seen charter schools expand quickly within their borders while others have few or no charter schools in operation. Districts and states have responded to these changes in a variety of ways creating a heterogeneous landscape of charter school policies and accountability policies (Shober, Manna, and J. F. Witte 2007). The picture painted is one in which the effects of these broadly defined changes vary across states, within states across districts, and even within districts across neighborhoods.

Given these environmental changes, any organizational perspective on contemporary schools needs to be able to deal effectively with technical demands, competition and the interaction between schools. The neoinstitutionalist perspective focused on the effects of institutional demands emanating from the governing bodies in the organizational field and their operating categorical schemes; however, the introduction of new types of organizations, along with changes in the flows of key resources and shifts in the types of evaluative control operating in the organizational field have ramped up technical demands on schools and made the strategic positioning of schools vis-à-vis one another particularly salient.

The prospect that the mechanisms connecting environmental characteristics to organizational form, process, and behavior will operate differently across environments brings another key weakness of neoinstitutionalism to the fore. Strategic action on the part of schools as well as their governing organizations plays little to no role in the neoinstitutionalist account of schools. This provides little intellectual difficulty in the context of uniform institutional demands on organizations. On the other hand, if organizations can strategically navigate institutional and technical demands, the ways that actors in these organizational fields perceive their environments becomes significantly more important. In the context of a varied organizational landscape, we need a perspective able to account for environmental heterogeneity and locality in both institutional and technical demands on organizations and the organizational strategies for dealing with them.

Considering schools from this theoretical perspective highlights the local character of: 1) the resources that they depend upon for survival (including funding, facilities, students, and teachers), 2) the non-school organizations that impact their operation (local districts, specialty service providers, city and county governments, state education agencies, etc.), and 3) the way that competition, such that it exists is likely to play out amongst schools, traditional public, charter, and private. All of this underscores the notion that the real results of the larger institutional changes and the organizational mechanisms they affect will be highly localized and depend upon the physical and social geography of the school districts and neighborhoods they are reworking.

In the six chapters that follow, I suggest that the continued application of neoinstitutional theory to the organizational life of schools focused on situating schools in an organizational field vis-à-vis governing bodies and the organizational isomorphism driven by the uniformly felt pressures ignores the crucial heterogeneity in environment that schools face in the wake of three core institutional changes that have realigned governing forces, reshaped the resource flows into schools, and altered the relationships between schools through the introduction of competitive pressures. I begin by engaging neoinstitutionalist organization theory and delineating some areas of weakness.

Chapter 2 details the neoinstitutionalist account of public education, and it's weaknesses in light of the changes that public education has undergone over the last fifty years. Moving beyond neoinstitutionalist focus on the relationship between schools and their governing bodies, I then make the case that this account should be supplemented with organizational ecology and resource dependence in order to outline the foundations of a perspective capable of taking the whole ecology of the environment faced by school organizations into account, including their differential relationship to key resources and to one another. This offers the potential to fill in some of the gaps in neoinstitutionalism with regard to the environments and behavior of modern schools.

Chapter 3 draws on this widened theoretical frame to discuss the dimensions of differentiation that neoinstitutionalism has a difficult time explaining. I delineate three main dimensions of differentiation including structures of administrative control, input streams

including capital, teachers and students, and product qualities including grade ranges, curriculum, pedagogical approach and location. Drawing on these dimensions of differentiation, I lay out a typology of schools in the diversifying field and suggest avenues of future research.

I then move on to cover the core changes reshaping the environment of schools in more historical detail. Chapter 4 goes into the key institutional changes that have strained the ability of neoinstitutionalism to account for the organizational behavior of schools. Looking at a large scale overview of the national political history of education reform is a starting place for building a research program on schools that takes their organizational aspects and their relationships to their surrounding organizations, resources, actors and ideas seriously. This chapter begins with the efforts at desegregation and continues through accountability reforms, charter school laws and the rise of alternative teacher recruitment and certification. I conclude by considering how these changes have reshaped the ways that districts are approaching the management of schools.

Chapter 5 takes up a specific project attempting to look at charter school expansion in California from the theoretical perspective laid out in chapter 2. In this chapter I attempt to gain leverage on the question of how local organizational environments structure the likelihood and degree of development of new and differentiated organizational populations in this changing field. Chapter 6 examines how organizational diversification at the local level shapes student movement between schools and considers how this diversification may alter the prevalence and direction of student exit from public schools in a large urban district. Finally, Chapter 7 concludes by considering current directions in federal policy that are shaping environmental heterogeneity in public schooling.

Chapter 2 - A New Institutional Ecology of Schools

Introduction

Sociological understanding of schools as organizations has changed dramatically over the course of the last fifty years. This period saw the demise of schools as a key area of research on the ways that local communities structured social life (Sorokin 1959). With the increasingly functionalist interpretations of schools as organizations (Durkheim 1956; Parsons 1959), the idea that local community characteristics could impact the operation of schools in a significant way faded into the background. The eclipse of the local ecological perspective was hastened by influential studies questioning the discrete impact of schools on student achievement (J. S. Coleman 1968; Jencks 1972). This process gave way to a new perspective on the organizational life of schools rooted in the emergent neoinstitutionalist focus on organizational fields.

Work in this vein largely abandoned the sociological concern with schools as a redistributive mechanism and turned to looking at schools as institutionalized organizations. Specifically, neoinstitutionalism in education concerned itself with the ways in which the activities of schools were circumscribed by social norms, and unexamined cognitive models, and oriented towards complying with regulatory bodies, rather than to the practical tasks of educating students. This work looked primarily at these forces as inducing formal conformity across organizations (DiMaggio and Powell 1983), and compliance with institutionalized expectations while allowing for decoupling between this "ritual" compliance, and the practical operations of schools (J. W. Meyer and Rowan 1977).

Current theoretical work on schools-as-organizations has remained largely within the neoinstitutionalist framework; however the rapid changes in education has left institutionally minded scholars in an awkward position: the theoretical tools applied to schools seem to be ill equipped to dealing with them as they exist today (Rowan 2006). Since neoinstitutionalism rose to a place of prominence in the study of education, the provision of public education has become less uniform, the life of schools as organizations has become more closely linked to technical measures like test scores, and public schools have had to deal with increasing uncertainty in their access to key resources. In this chapter, I contribute to sociological theory on schools by advancing a perspective that integrates the insights of neoinstitutional theory from its initial application to the world of education with: 1) the more advanced institutionalism and resource dependence which incorporates politics/power, strategic interactions, and negotiated environments and 2) an ecological orientation towards schools developed from organizational ecology which incorporates the dynamics of institutionally conditioned competition.

Synthesizing these theoretical strains of organization theory casts light upon a few crucial aspects of the social structure of schools which have become increasingly differentiated in the public school sector. These include the locus of administrative control over public schools, access to financing, control over labor relations, and student admissions policies.

Institutional changes have restructured each of these dimensions and changed the access of schools to crucial resources. Changes in this access have in turn reshaped the ways that schools relate to one another including the strategies available to school for securing access to these resources and avoiding competition. These changes have also changed the ways that schools relate to districts, regulatory agencies educational management organizations and supplementary education service providers, as well as other private organizations linked to public education like foundations.

This chapter proceeds in four parts. First, I provide a brief review of the now dominant neoinstitutional perspective on schools and review why this perspective, as it stands, seems lacking in the face of rapid change in public education and in the organizational lives of schools. Second, I detail how neoinstitutionalism as it has developed, the resource dependence perspective, and organizational ecology, usually applied to firms, can add to a contemporary understanding of schools as organizations. Third, I draw on neoinstitutionalism, resource dependence and organizational ecology to sketch a typology of key dimensions shaping the lives of schools as organizations. Finally, I provide a few examples of how this perspective might be employed.

Neoinstitutionalism and Schools as Organizations

When neoinstitutionalist scholars developed their thoughts on the organization of public education, they broke both from the community oriented perspective of the early 20th century as well as the functionalist accounts of the mid-20th century. The neoinstitutionalist account of organizational behavior turned from using the local environment or the strict function of the organization as explanations for organizational behavior and instead sought to describe organizational life as shaped by culture, norms, and cognitive models of behavior, in short unquestioned modes of interaction reified in regulatory and organizational rules. This shift and the theorizing around how these rules propagate and generate isomorphism in organizational structures provided scholars with a powerful set of ideas. Neoinstitutionalism is a broad theoretical tradition, but its legacy rests on five key concepts that have become foundational for scholars focused on organizations: cultural and cognitive models, organizational fields, legitimacy, institutional vs. technical environments, and decoupling.

Cultural and Cognitive Models

Neoinstitutionalists argued that the basis of institutionalization was cognitive in nature (Zucker 1983). Rather than relying on values or internalized norms, they argued that the essence of institutionalized behavior was socially constructed cognitive processes and models. Neoinstitutional theory elaborated taken-for-granted categories, cultural scripts, and schemas which operated to define legitimate action in the form of a menu of possible solutions to a given problem, including enabling the elaboration of specific formal organizational structures and sets of relationships between actors.

These categories, models, and modes of organizing behavior become themselves imbued with social value as their enactment becomes tied up with the ability of actors to secure needed resources or to avoid costly sanctioning. In this way, neoinstitutionalists downplay the role of competition or tailored strategy in the generation of formal organizational structure and focus instead on the ways legal rules, themselves expressions of socially constructed categorization, set the stage for the development and enactment of shared understandings regarding the purpose of a given sphere of activity, and the legitimate means to achieve this purpose (W. Richard Scott 2001). Furthermore, the idea that these models are cultural suggests that they are variable and historically contingent, and that multiple institutional contexts are likely to coexist at any given time. While the sources of these cognitive models, categories, and cultural scripts are murky, neoinstitutional scholars typically point to the role of history and path-dependence, or contradictory institutional regimes, interacting with exogenous shocks as drivers of change (Powell 1991).

Moving the locus of institutionalization from the organization to cognitive and cultural models forced theoretical attention onto forces beyond the organization or the basic resource demands of its environment and onto the complex of relations inter-organizational relationships as the locus of institutionalization and the conduits for the transmission of these models through various means. In this understanding, cultural models or modes of behavior and socially constructed cognitive structures reduce uncertainty by prescribing action, setting expectations and offering ready ex post explanations; however they are also generative, suggesting solutions to new problems, and offering the opportunity for the transplanting of institutional structures from one complex of inter-organizational relationships to another (Powell 1991).

The Organizational Field or Social Sector

Expanding the locus of analysis from the organization itself to the broader constellation of inter-organizational relationships suggested that by tracing key relationships of supply, consumption and regulation, researchers could outline the boundaries of these constellations, an idea which became crystallized as the organizational field (DiMaggio and Powell 1983). Typically researchers studying organizations had defined relevant populations as those providing similar services, products or functions. This was the case in traditions such as industrial organization and even in population ecology which I will discuss below. The neoinstitutionalists moved beyond the traditional focus on industries to include legal and regulatory bodies, professional associations and other standard setters, as well organizations of key suppliers and consumers. This view illuminated a larger system of reciprocal influence patterning organizational behavior (W. Richard Scott and J. W. Meyer 1991). The idea of the organizational field provided the arena for the definition, diffusion, enforcement and enactment of the cognitive and cultural models and modes of action neoinstutionalists saw as the foundation of stable and repeated social behavior and organizational structures.

Examining differences amongst organizational fields in the mechanisms producing, spreading and maintaining institutionalized patterns of behavior, including formal

organizational structures, suggested theoretical attention be given to the types of pressures inducing promoting isomorphism. A seminal piece in neoinstitutional theory delineated coercion, mimesis, and norms as the key forces promoting isomorphism in institutionalized organizational fields (DiMaggio and Powell 1983). Coercive pressures come from regulatory bodies and political or legal actors who force organizations to adopt specific formal structures and practices. Mimetic pressures are indicative of a fundamental aspect of an organizational field, that actors in the field watch one another and use imitation as a way to reduce uncertainty, a problem neoinstitutionalists see as fundamental to social life and organizational life in particular. Finally, normative pressures stem from having established rules of behavior or accepted means for achieving desired ends set by a group of actors recognized as legitimate. This is typically the result of a professionalization project which, once dominant over key personnel in an organizational field, forces organizations to adopt practices and formal structures in line those that are professionally accepted.

These forces are juxtaposed to competitive processes which can also result in organizational isomorphism, but which were, for the most part, seen as outside of the purview of neoinstitutionalism. Considering the differential impact that competitive relations, versus relationships with regulatory bodies and professional groups have on organizations in the public sector versus those in the private sector led institutional scholars to another key insight. Initially, neoinstitutionalism differentiated organizational fields largely by contrasting competitive, market driven organizational fields to those dominated by concerns of regulatory compliance. Differentiating organizational fields in this way leads to the idea of technical versus institutional demands on organizations.

Institutional and Technical Demands

Theorizing about organizational fields led to an increasingly detailed elaboration of technical environments versus institutional environments. Technical environments are those in which primary control over organizations is exerted through attention to outputs. In these environments, means or processes are buffered from the environment (other organizations in the organizational field) but remain subject to internal organizational pressures. Institutional environments on the other hand were those in which an organization is subject primarily to process controls (W. Richard Scott 1998). These environments put pressure on organizations to comply with rules and regulations governing their core processes and encourage the development of complex administrative structures in order deal with the regulatory pressures over processes.

The elaboration of the technical and institutional demands exerted on organizations in a given field allowed neoinstitutional theorists to posit ideas about how these pressures relate to the elaboration of formal structures around production, and administration, as well as the founding and survival of organizations (W. Richard Scott and J. W. Meyer 1991). Specifically, the neoinstitutionalist research agenda was largely devoted to investigating how institutional demands structure organizational fields, and for the most part began by examining those organizational fields where institutional demands are strongest.

Within a given sector or field, various aspect of the field's governance were also looked at as interacting with the institutional and technical demands on organizations including: 1) level configuration 2)decision structures involving programmatic, instrumental and funding decisions, and 3) control regimes including structural controls, process controls and outcome controls. The specific configurations of these aspects in a given organizational field will shape the level of formal structural/admininstrative elaboration within organizations, as well as the organizational tactics for dealing with these demands.

The "number of levels" refers to the strata of organizational authority structures, often though not necessarily geographically nested. Typically, these levels break down into: national, regional, state, sub-state, and local authority or associational structures. Decision making including: programmatic decisions or goal setting, instrumental decisions or determination of proper means, and funding decisions or allocation of resources, is variably distributed within and between these levels. The dimensions of this distribution were described by Scott and Meyer (W. Richard Scott and J. W. Meyer 1991) as centralization/decentralization, fragmentation/unification, and federalization/concentration. Centralization/decentralization refers to the degree to which a given type of decision is made at higher levels or lower levels. Fragmentation/unification refers to the within-level coordination of decision making. Federalization/concentration describes the extent to which decision making is coordinated across levels with higher level authority dictating to lower levels. Higher level units exert control over lower level units through modes of control including structural controls focused on meeting measures of administrative adequacy including measures of input adequacy, process controls focused on setting standards for instrumental activities, and outcome controls focused on measuring the products of organizational processes.

This set of concepts provides a flexible framework for making sense of organizational fields, particularly the institutional demands in organizational fields. For the most part, this framework treats technical demands as beyond its purview. The idea that technical demands could be posed in opposition to institutional demands at the outset of neoinstitutionalism's theoretical elaboration was softened as the research agenda developed. In more advanced neoinstitutional thinking, institutional and technical demands are seen as different axes along which organizational fields vary from weak to strong (Powell 1991; W. Richard Scott 1991). Initially, however, the examination of technical demands was, for the most part, ceded by neoinstitutional theory to other strains of organization theory. Along with this focus on institutional demands came the development of a two key concepts: legitimacy and decoupling.

Legitimacy

Perhaps the most simultaneously crucial and convoluted concept in modern organization theory in general, and in neoinstitutional theory in particular is legitimacy (Deephouse and M. Suchman 2008). Before the fracturing of organization theory into its current state, the concept of legitimacy was drawn from Weber's discussion of the matter (1978), and was expressed most clearly by Parsons (1956, 1960) as an organization's congruence with existing laws, norms, and values. Neoinstitutionalist research for the most part

continued this conceptualization of legitimacy elaborating upon it, and, following its general critique of earlier institutionalist perspectives, incorporated cultural and cognitive aspects. At its outset, neoinstitutionalism developed its conception of legitimacy in order to understand organizational behavior in fields characterized by strong institutional demands.

Cultural and cognitive models provide basic tools, accounts and rationales for the construction, recombination and explanation of organizational practices, procedures and forms. Organizations conforming to the prevailing accounts of proper ways to achieve approved goals receive cultural support securing their claim over a particular jurisdiction of activity, and allowing them to function with minimal challenges to their operation. Institutionalization of a particular cultural or cognitive model for organizational form and action produces at minimum the distrust of alternatives, and at most their un-thinkable-ness. Complete legitimacy results in an organization, organizational form, policy, goal, procedure, etc., that is beyond reproach, for which alternatives cannot be conceived (W. Richard Scott 2001).

At the outset of neoinstitutional theory, legitimacy was seen as a key resource or input for organizations (Deephouse and M. Suchman 2008; J. W. Meyer and Rowan 1977; W. Richard Scott 1991). In organizational fields characterized by strong institutional demands, organizations adopted particular forms and practices in order to conform to prevailing understandings of 'rational effectiveness', to comply with 'legal mandates', and to signal pursuit of 'collectively valued purposes' (J. W. Meyer and Rowan 1977), which in turn increases their legitimacy. The idea casting legitimacy as a resource or commodity changed in later conceptual development on the matter. Viewing legitimacy as a resource suggests that it exits in some form out in the environment, and organizations vie with one another in order to secure it. Further conceptual elaboration shifted legitimacy from a resource to a 'condition reflecting cultural alignment, normative support, or consonance with relevant rules or laws' (W. Richard Scott 2001). Understanding legitimacy this way yields a 'fuzzy' concept: we can imagine an organization having complete legitimacy, complete illegitimacy or anything in between. The shift from viewing legitimacy as a resource to a fuzzy condition lent needed conceptual clarity, and further elaboration attempted to delineate the character of legitimation.

In its most recent formulations legitimation is divided into categories, based primarily upon its character as an instrumental, normative/moral, or cognitive imperative (Aldrich and Fiol 1994; Archibald 2004; W. Richard Scott 2001; M. C. Suchman 1995). The instrumental aspect of legitimacy, alternatively regulatory legitimacy[1], is based upon adherence to rules and regulations. These regulative systems structure organizations by setting up sanctions and creating incentives for adherence. Both formal and informal rules shape organizational practices, processes, and structures, and to the extent that an organization or one of its aspects are known to conform to these rules it can be said to be legitimate in this sense.

[1] Some work in this vein delineates sociopolitical legitimacy. I refrain from using this description, as I feel it further convolutes the distinction between regulatory and normative/moral legitimacy. In a similar fashion cultural legitimacy is sometimes used to refer to both normative/moral and cognitive legitimacy.

Normative legitimacy is thought of as those aspects of legitimacy applying to the purposive and moral elements of rules and goals that reflect social values and behavioral expectations. This seems similar to the instrumental aspects of legitimacy surrounding compliance with rules and regulations; however, normative legitimization adheres to goals and purposive aspects themselves and to the social roles carrying the associated right and responsibilities for pursuit of these ends. Adherence to specific rules and regulations yields regulatory legitimacy while the purpose of this adherence is the subject of normative legitimation; though formal and informal rules and regulations themselves may be normatively legitimate to the extent that they reflect prevailing norms and social values.

Cognitive legitimacy refers to foundational or assumptive elements (cognitive) adhering to categories, assumptions, definitions and analytic tools. With the emphasis on cognitive aspects of legitimation, organizational neoinstitutionalists break from their older counterparts as well as their counterparts in nearby disciplines like economics. The insight here is that institutions are built on deeper foundations than regulations or norms. The fundamental categories we use to interpret the world around us shape how we understand actors, qualities, possibilities for action (i.e. constraint), and how these relate to one another. The appropriateness of a particular definition of an issue, form of organization, tool or actor as well as how these interact with one another are all subject to social processes through which they become taken-for-granted. At its most basic, cognitive legitimation refers to the process by which a new or novel pattern of behavior becomes accepted as a "natural" way of doing things.

While none of these types of legitimation can be associated exclusively with a particular set or type of actor as a source or carrier, some general associations can be pointed out. Clearly the State is primary purveyor of regulatory legitimacy in many organizational fields, but there are also legally empowered professional associations, and the like. In most neoinstitutionalist work on modern organizations, normative legitimacy is defined by congruence with models set out by professionals for expectations (priests, lawyers, accountants, academics). Taking broader view however, religious organizations and other authorities, as well as mass media could be sources for normative legitimation. Finally, sources of cognitive legitimacy are diffuse, and usually conceived of as society-at-large; however the essence of these accounts is that cognitive legitimacy accrues as the result of the historical integration of categorical rules or world-views into social action through internalization (Bourdieu 1986), collective accounts and rationales (J. W. Meyer and Rowan 1977), or the structuring of the social organization of tacit knowledge (W. Richard Scott 2001).

These types of legitimacy also largely reflect particular types of isomorphic pressures. That is, institutional isomorphism is accomplished through the pressures that organizations in fields feel to legitimate their aspects. Coercive isomorphism accomplished through legitimation based upon regulatory institutions, normative isomorphism operates through legitimation based on congruence with normative institutions, and mimetic isomorphism is encouraged by pressures for cognitive legitimation (Deephouse and M. Suchman 2008).

At the core of sectors characterized by strong institutional demand, neoinstitutional scholars saw organizations complying with rules and regulations, and conforming to cultural models in the interest of maintaining legitimacy. The process of legitimation whether through the incorporation of readily available legitimate elements, or the achievement of legitimation through sociopolitical means, allows organizations to buffer themselves from technical demands through compliance with institutional demands. This compliance enhances their legitimacy and allows them to operate with the technical aspects of their operation unquestioned. This aspect of legitimacy leads to another key insight neoinstitutional theory provided into organizational behavior in fields with strong institutional demands: the process of decoupling.

Decoupling & the Logic of Confidence

When studying how and why organizations adopt legitimate policies, procedures, and formal structures, researchers noted that the elaboration of these was often separated from actual organizational practice. Through the process of decoupling, organizations are able to maintain legitimacy by changing administrative structures or policies without changing how they go about their practical tasks (J. W. Meyer and Rowan 1977). This process allows organizations to shield themselves from evaluation based upon technical considerations (i.e. evaluations regarding their output) and to be evaluated instead on their adherence to 'ceremonial' requirements. Decoupling allows organizations to hide inefficient or ineffective processes as revealed in their output by assuring compliance with procedural evaluation (W. Richard Scott 1991). Organizations may espouse normatively legitimate goals, and exhibit legitimate regulatory procedures while decoupling practices from these goals and formal procedures in order to conform to external expectations while allowing for inconsistencies in their performance or output.

This decoupling is maintained via the logic of confidence (J. W. Meyer and Rowan 1983). This is the idea that organizations maintain decoupling through indirect "face work"(Goffman 1982) . The elaboration of the categorical schemes reified in the formal structures of organizations and in the structure of the organizational field itself allows for mutual assessment based upon formal evaluation processes like certification, accreditation, ratings, etc., a process which defrays the collection of evidence on performance in favor of an assumption of competence. Whether accrediting schools, certifying teachers, or rating bonds, the logic of confidence develops in organizational fields as a means to maintain decoupling through the ceremonial enactment of the rational myth that each link in the chain of confidence can be trusted without being tested. This logic buffers organizations from the uncertainties of each other's actions as well as the vagaries of the broader environment (J. W. Meyer, W. Richard Scott, and Deal 1983).

Neoinstitutional Analysis of Public Education

With these five concepts in hand, neoinstitutional theory offered a compelling account of American public education that resonated with the academic research on the relatively small

impact of schools on student achievement. The neoinstitutionalist account, as laid out by Meyer and Rowan (1983) began by problematizing the de- or loosely coupled character of schools, specifically that schools operated with: 1) little evaluation of classroom instructional practice or student learning outcomes, 2) ill-defined and unstandardized core technologies (curriculum and pedagogy) and technical processes (grade progression), and 3) little administrative control over technologies, technical processes, or evaluation. Simultaneously, educational organizations were adept at the application of prevailing categorical and classificatory schemes to teachers, students, topics, and to school organizations themselves. For example, teachers were defined in detail by grade level, subject specialization, and credentials and these categorical schemes were rigorously applied. Application of the categorical schema organizing knowledge and categorizing students and teachers was the primary role of schools (J. W. Meyer and Rowan 1983; J. W. Meyer et al. 1983).

These dominant categorical schemas weren't developed inside of schools. The architecture of these categories were formed by the social needs and the overall "theory of personnel" operating in society-at-large (J. W. Meyer and Rowan 1983), and found their reification in educational organizations like state and university departments of education. What's more, the pressure to apply these categories to the practical operation of schooling came from outside as well. Rather than attempting to explain the behavior of schools as a function of the demographics in the neighborhoods they served, or as a product of a principal's actions, this new perspective argued that the key community in which schools were embedded was not their local geography, but rather the community of other organizations to which they are related (DiMaggio and Powell 1983). This brought those regulatory and credentialing bodies like state departments of education and universities, as well as administrative bodies like districts into focus.

These organizations placed institutional demands on schools to conform to broader categories of education in order to be viewed as legitimate organizations worthy of publicly allocated resources. The force of these demands however was mediated by the local authority structures controlling much of the operation of schools. The decentralized nature of control over schooling resulted in tight coupling of the application of institutionalized categories to formal structure, and particularly to certification and personnel, but allowed these processes to be loosely coupled or decoupled with classroom instruction (J. W. Meyer and Rowan 1983). Decoupling formal procedures from technical processes allowed schools to conform to institutional demands and remain legitimate while obscuring the instructional processes. What's more, decoupling allowed schools to avoid relying upon technical performance in a field with uncertain and difficult to measure outcomes. Finally, the federalized nature of decision making in the field of education meant that local authority structures were free to shroud the teacher-pupil classroom interaction from evaluation through maintenance of the logic of confidence. The accrediting and credentialing chain maintained legitimacy with inspection and evaluation limited to the inspection of ceremonial categorical compliance leaving technical processes and the work of teachers behind a veil.

Federalized decision making also allowed for multiple institutional realities to coexist within a particular organization, encouraging segmentation. For example, federal programs earmarked for specific types of instruction (speech-language pathology, special education, etc.) created expanded credentialing, and placed new institutional demands on the school. School and district administrators dealt with the new categorical demand by creating segmented instructional programs, maintaining the logic of confidence for both regular teachers and the newly employed and credentialed workers, and ensuring minimal organizational disruption as categorical demands shifted. The multiple institutional realities simultaneously existing within schools was stabilized through segmentation which also helped to explain the ability of education organizations to incorporate new elements without substantially altering their structures (J. W. Meyer et al. 1983).

This theoretically compelling take positing institutional demands as the source of formal structure and the primary force conditioning the operation of education organizations has been the dominant perspective on schools since it was developed. However, even as neoinstitutionalism became the dominant perspective in sociological work on schools, the organization of public schooling was undergoing significant changes. The distribution of forces in the organizational field of education writ large was changing in three fundamental ways: 1) as local authorities in many places lost their independent funding base, state governments consolidated control over funding streams including those coming from the Federal government and funding become more centralized, 2) political attention in state capitals turned toward standards and accountability reforms shifting emphasis from formal congruence to output controls, 3) the institutionalized credentialing process for teachers saw the rise of alternative certification and recruitment paths, and 4) legislative action in many states liberalized the provision of public education and created a new and variegated organizational form, the charter school. These changes will be described in more detail in the following chapter, but I give a brief account below in order to motivate my critique of the neoinstitutionalist account and it's supplementation with other perspectives from organizational theory.

Issues in the (Old) New Institutional Analysis of Education

This perspective generally seeks to explain isomorphism across organizations through reference to pervasive categorical schema, buffering from environmental effects through ceremonial response, and decoupling. With these key mechanisms in place, organizations can persist without technical payoffs and can resist reform through ritual appeal to accepted bases of legitimacy. Since this account, quite a bit has changed in the world of public education and the ability of neoinstitutionalism to account for the proliferation of new organizational forms in schooling has become strained. These changes highlight six ways in which neoinstitutionalism falls short when examining contemporary American schooling: 1) the presentation of institutional and technical demands as mutually exclusive, 2) the confounding of technical demands and competition, 3) the lack of agency and interest on the part of state and NGO actors, 4) the role of power and control over resources in the emergence of new organizational forms, 5) the ways in which competition for key resources structures the behavior of

educational organizations, and 6) the role of strategic interaction between organizations in the field. This section begins by introducing these changes and follows this up by considering each of these six points in turn.

Key Changes in Public Education

After the mid 1960's Federal funding increased, but it remained a relatively small proportion of school revenue overall. The big shift came in the form of declining revenues from local sources and increasing revenues from the state (J. W. Meyer et al. 1988). In 1970, 52% of school funding was local, 39% was from States and 9% came from Federal sources. By the end of the decade, local funding made up around 44% of funding with States covering 48% and Federal sources covering 8%. Although there have been some fluctuations around these levels, they remain about the same today (Snyder and Dillow 2011). At the same time that states have become the primary source of school funding, they've become the controller of Federal money targeted at education. Often, federal money is distributed to state governments who then allocate this money to schools or districts for specific purposes. In the terms of neoinstitutional organizational theory, funding decisions were increasingly centralized at the state level, though this decision making remains highly fragmented with many uncoordinated programs operating simultaneously.

Not only have states become the primary source of funding, and solidified their position as go-betweens for district and school Federal funding, but over the course of the 1990's state governments implemented standards reforms. Generally, these reforms centralized programmatic decision making with educational goals laid out by states in the form of curricular and achievement expectations. Along with standards based reforms, states implemented accountability reforms that expanded standardized testing, implemented graduation requirements, often made school-level test results publicly available, and laid out rewards and sanctions for school and districts based upon student performance. This change implemented real output controls on schools which had formerly faced only structural ones, and increased technical pressures on organizations in an already institutionally demanding environment. For better or worse, accountability reforms have pushed public schools to focus on raising test scores, with an attendant tightening of the relationship between instruction and organizational outcomes (Davies, Quirke, and Aurini 2006).

As states (and the Federal government) were passing standards and accountability legislation, many states also enacted Charter school legislation. Charter school laws opened up the supply of schools by creating a new type of public school which could be started by private citizens, community groups, non-profits, for profits, universities, and other groups. These schools would be funded with public money, and for the most part open to any student regardless of residence, have the flexibility to negotiate directly with teachers (i.e. employ non-union labor), as well as choose their own pedagogical approach, and curricular specializations. In terms of institutional and technical demands, charters face somewhat different pressures than traditional public schools. The most significant difference in terms of environmental pressures is that charter schools have no residential attendance boundaries. This gives charters

flexibility in terms of attracting students from across neighborhoods, but also subjects charters to a real technical demand that isn't faced by public schools. Traditional public schools with their district defined attendance boundaries have a centrally managed supply of students, and receive the public money earmarked for these students by the state. Charter schools on the other hand, typically housed in smaller and much more limited facilities, face an uncertain environment with regard to their ability to attract students and dollars. Furthermore, charters aren't bound by the same tightly coupled categorical adherence that traditional public schools are: they are free to specialize in a particular subject, or a non-traditional approach to teaching.

Not only does the environment faced by charters differ from public schools in these crucial respects, the expansion of charter schools is a significant change for traditional public schools. The introduction of public schools without geographically based boundaries circumscribing student enrollment, having the flexibility to tailor curricular specialization or pedagogical approaches, as well as direct control over teacher employment decisions has significantly altered changed the pressures that traditional public schools and districts feel. These schools have much more leeway to alter their structures and practices in order to meet the increased technical demands of the era of accountability. At the same time, their ability to cross catchment area boundaries to attract students puts them in competition with traditional public schools as well as private schools for resources. Districts as well have to contend with the altered institutional landscape created by charter school legislation. Where once these administrative bodies were primarily concerned with resource allocation, categorical compliance and cultivating regulatory and normative legitimacy, they now find themselves in the awkward position of having administrative responsibility for this new breed of school which they may have little control over.

Along with changes in the funding environment, the expansion of charter schools and the enactment of standards and accountability legislation, another crucial part of the organizational field of public education changed: teacher certification. Meyer and colleagues had argued that school accreditation and teacher certification were essential parts of the institutional environment schools faced. These processes lent legitimacy to schools adhering to their categorical demands. Teacher certification in particular was essential, as this process maintained the 'myth of teacher professionalism', and allowed the loose coupling to be maintained via an obscured relationship between teacher and student in the classroom. Since the 1960's teacher certification had been the purview of universities which offered four year programs, approved by the state, leading to a teaching credential. In response to teacher shortages, many states began to allow alternative certification programs over the course of the 1980's. Today about a fifth of all teachers are trained in alternative certification programs (Susanna Loeb and Grossman 2008). The cornerstone of this change has been the rise to prominence of teacher recruitment programs, Teach For America in particular, focused on funneling academically successful applicants into schools of need with a focus on accountability, and the circumventing of teachers unions. The constellation of forces dominating teaching in public education institutionalized a "normal" path in which schools employ unionized, university certified teachers in order to exhibit their regulatory and

normative legitimacy. Recruitment organizations like TFA were able to tap into a new pool of prospective teachers not committed to unionized labor. These new teachers find a natural partner in charter schools which are not bound by union-district collective bargaining, and just like the introduction of charter schools, the changes in the recruitment, and training of teachers has real consequences for schools and districts.

Little is known empirically about how control in the organizational field has shifted with the combination of charter school legislation, standards and accountability reforms and alternative certification and recruiting programs. From the perspective of neoinstitutional theory, these processes can be characterized as weakening structural controls like certifications which demand formal congruence, while strengthening outcome based controls (i.e. test score gains). For traditional public schools and public school districts the result is likely to be a mounting tension between formal congruence and performance, between cognitive and normative legitimacy on the one hand and regulatory legitimacy on the other. Public schools trying to maintain their programmatic segmentation in order to deal with fragmented institutional demands now face technical demands spanning these segments, making achieving regulatory legitimacy more difficult. Structures, roles, or processes which, when taken on their own, are congruent with dominant cognitive schema, may be at odds with other structures and processes which are also deemed legitimate.

What's more, these schools now face competition with charters for students, and do so at a decided disadvantage in terms of curricular, pedagogical, and labor flexibility. Charter schools, legislated into existence, face less tension between regulatory and normative or cognitive legitimacy than their public school counterparts because they don't need the same degree of formal structural elaboration in order to maintain congruence with regulatory pressures ; however, these schools face serious battles for normative legitimacy, and their heterogeneity makes cognitive legitimacy more difficult to achieve. The expansion of these schools is yet another change which begs the question of whether the original neoinstitutionalist account of public education is still as relevant as it once was.

Over the past thirty years, the topography of the organizational field of education has been redrawn along with the landscape of forces, including the alignment of competition and cooperation between and within school-sectors including traditional public, charter and private schools, as well as between schools, districts, unions and the state. The responses of schools to the changes in these forces have significant implications for the types and processes of legitimation, isomorphism/differentiation, coupling, and the balance of institutional and technical demands in public education. However, neoinstitutional theory as laid out in its analysis of public education (J. W. Meyer and Rowan 1983) is not well equipped to deal with these changes (Rowan 2006). I highlight six ways in which the early neoinstitutionalist framework, as applied to public education, is challenged by these changes.

Institutional and Technical Pressures as Mutually Exclusive

In its earliest variants, neoinstitutionalism conceived of technical and institutional demands as opposites. In this formulation, a particular sector was either dominated by institutional or technical logics. Since this early work it has been acknowledged that technical and institutional pressures do not exist as polar opposites on a single dimension or as opposing ends of a binary switch. Instead institutionally minded scholars have since reconceived of these as distinct dimensions with strong and weak ends. Powell (1991) gives the examples of banking and transportation as organizational fields with both strong competitive pressures and strong institutional pressures. This point is highlighted by accountability reform in public education which ratcheted up technical pressures on public schools while maintaining strong institutional demands. What's more, as the world of education in general and public education in particular has experienced considerable legislative change and organizational differentiation, the degree to which a given type of school, or indeed a particular school is beholden to a mix of weak versus strong institutional and technical pressures has become increasingly varied making the original neoinstitutionalist analysis emphasizing universally applied demands for conformity left wanting. More generally, the organizational field of education increasingly exhibits a variable mix of institutional and technical pressures enforced by both coercive and competitive mechanisms.

The Confounding of Technical Demands with Competition

In much neoinstitutionalist work, technical pressures and competitive pressures are used interchangeably. I argue that this confounds two analytically separate concepts. Powell's example mentioned above of banking and transportation as industries facing strong institutional and competitive (read technical) demands highlights this imprecision. Competition, rather than being itself technical demand, is a particular mechanism for the enforcement of technical demands. This is highlighted in the example of strong accountability and high stakes testing in contemporary American public schooling. The enactment of these reforms, in which schools are forced to attend to the specific technical demand of raising test scores, or face sanction and closure, set up a system of technical demands which is enforced by coercion rather than competition. Some schools need to attend to this demand due to the increasing prevalence of regularly published scores, and the possibility that they may lose students to other schools if they perform poorly. For these schools, the technical demands of their environment are enforced through competition. Other schools however face minimal risk of losing students (due to the cost of residential relocation, geographic isolation, regulatory restrictions, etc.) regardless of their test score performance. Under accountability reform, these schools must attend to this specific technical demand in order to avoid state takeover or forced closure, i.e. a coercive enforcement of technical demands.

The State as a Constellation of Interested Actors

The fact that state governments have increasingly been in the business of closing schools brings another weakness of neoinstitutionalism to the fore. In its original variants, the

state was as much a product of institutional scripts and cognitive schema as any other organization. It also served as the site of production for regulatory instantiations of these scripts. The ways in which these categories are formed and enforced remains a black box and the state appears as a force commanding ritual appeasement more than an actor with interests. Accountability reform has transformed the state's role in public education from purveyor of categorical and formal rules to monitor and enforcer of technical performance. The creation and spread of accountability legislation both at the state and the Federal levels was accomplished through political means including the normative de-legitimation of traditional public schools given their well-publicized lack of performance (National Commission on Excellence in Education 1983a). This is just one instance showing how the state has its own set of interests that may be at odds with districts or schools.

What's more, the fragmentation observed by neoinstitutional theorists within the decision making of the state is accompanied by fragmented interests and multiple actors with both converging and conflicting goals. Neoinstitutionalism recognizes fragmentation of decision making, suggesting that multiple institutional logics and rationales at higher levels result in segmented lower level governance. This account however side-steps the contentious nature of these logics with actors and organizations within the state championing competing understandings of governance, organization, decision making and control in a particular sector. These dynamics suggest the possibility of competing ends between offices within state departments of education, as well as between State departments of education, Federal departments of education, and local districts. Furthermore, conceiving of the state as a constellation of actors with interests lends insight into how political and legislative processes shape the institutional environment as well as the technical demands faced by schools and gives some purchase on how sweeping and heterogeneous legislation (e.g. charter school laws) have become ubiquitous in a formerly homogeneous sector.

Resource Dependencies as an Institutional Control

The modes of control laid out by neoinstitutional theory focus on evaluation and typically involve the evaluation of lower level units by higher level units. The focus on evaluative control glosses over the external control exerted on organizational units both within and between levels through the control of key resource flows. Meyer and Scott (1991) point out that federated sectors are unlikely to have centralized programmatic or instrumental decision making, and suggest that, to the extent that funding decisions are centralized, elaborated accounting schemes will be developed to exert control over lower level organizations. This account however sidesteps the direct control that higher level units in fields with centralized funding exert over organizational decision making, not through the imposition of sanctions, but through withholding resources. Tying Federal money to the implementation of specific state policies has long been a tactic used to cajole recalcitrant states into change. For example, access to data linking the test scores of specific students to a given teacher has been outlawed in California, but this ability was a requisite to gain access to Federal money from the Race-To-The-Top program. In order to participate in the competition for Federal money, districts in

California were forced to attempt policy changes going beyond the elaboration of accounting structures (Resmovits 2012).

Input control allows governance units to impose categorical compliance in terms of formal structural attributes and processes. As the structures regulating the flows of funding in public education from governance units to schools have fragmented with some schools funded by local districts, some funded directly by states, and some competing for funding from private foundations and other large donors, the heterogeneous institutional demands that grow from this variety of funding sources results in organizational populations which are subject to institutional demands that may be similar in magnitude but very different in character. This also allows organizational actors with no direct governing power the ability to shape and reshape the legitimate categories operating in formal structural elaboration as well as legitimate organizational processes.

Competitive Forces in Education

Even as the state has become more active with the implementation of accountability policies, market-style accountability has become a topic of considerable importance. As the charter school sector continues to expand, researchers and theorists have sparred over the appropriateness of the application of a market metaphor to hybrid public-private educational organizations like charters and the dynamics they introduce into public education (Apple 2001; Betts and Loveless 2005; Henig 1995, 2008; Hess 2002; Caroline Minter Hoxby 2003). However, the fact that there are clear areas of metaphorical failure doesn't eliminate the need for the introduction of competition into theoretical perspectives on K-12 education. Competition as a social state should be viewed separately from a market-competition in which competition is enforced through prices and capital resources flow from output exchange. Schools are market players as consumers, but they also compete for other key inputs.

Looking at students as a resource, for instance, public and private schools have existed side by side in a stable relationship involving some degree of competition for quite some time. The residentially based enrollment system divided students and families into those who could exercise choice via residential relocation or exit into private schools with their attendant tuition payments, and those who could not. Public schools effectively had a monopoly on those with limited residential mobility and without disposable income for tuition payments. At the other end, students and families for whom tuition payments or residential movement pose proportionally small costs were able to move to the best public schools or exit to private schools easily. Competition over students between private and public schools was limited to the subset of students and families for whom residential change or tuition payment was possible, but difficult.

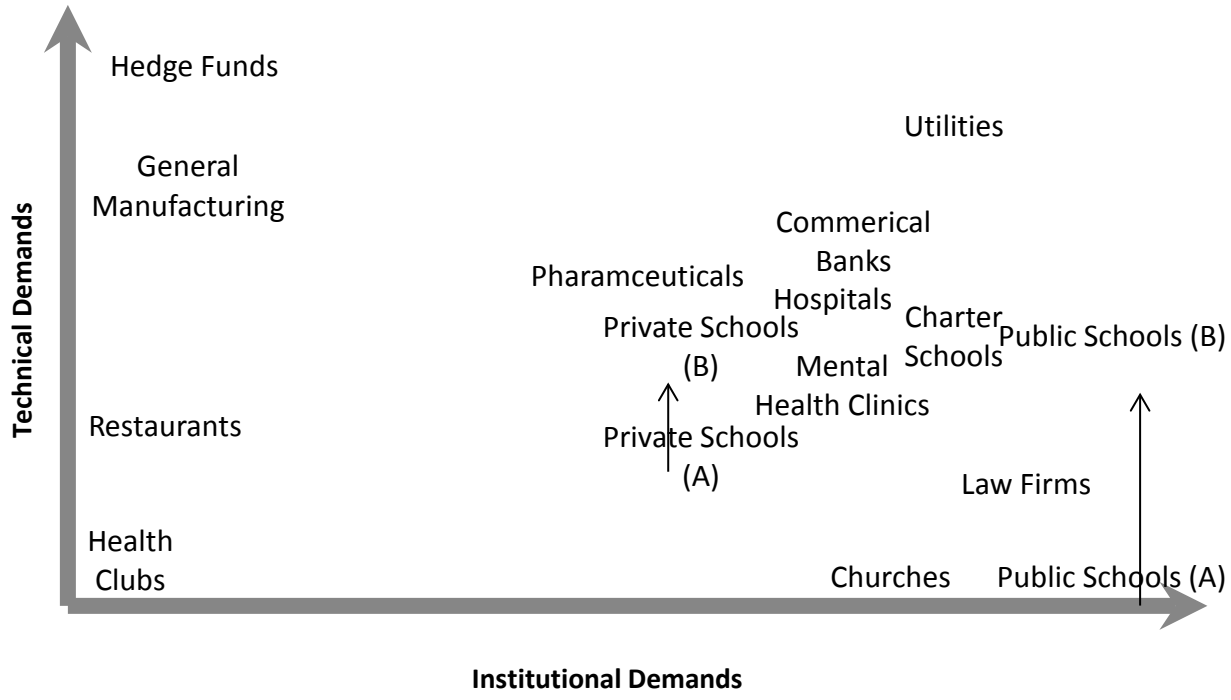
With the introduction of charter schools posing no tuition costs like public schools, but with no residential requirements, the ability to specialize curriculum or pedagogy, and to make low level decisions regarding relocation and labor like private schools, there is the possibility that this limited area of overlap is changing. Charters seem uniquely poised to compete with

both traditional public and private schools for the set of public school students who would attend private school if the tuition or relocation costs were a little lower, as well as for private school students for whom the tuition burden is largest. What's more, by overlapping areas of the resource space formerly dominated by one of the two larger sectors, charters create the possibility for greater competitive interplay on either side of this resource space and thus for greater transmittal of intra-sector effects between the public and private school sectors.

Organizations and Strategic Interaction in Education

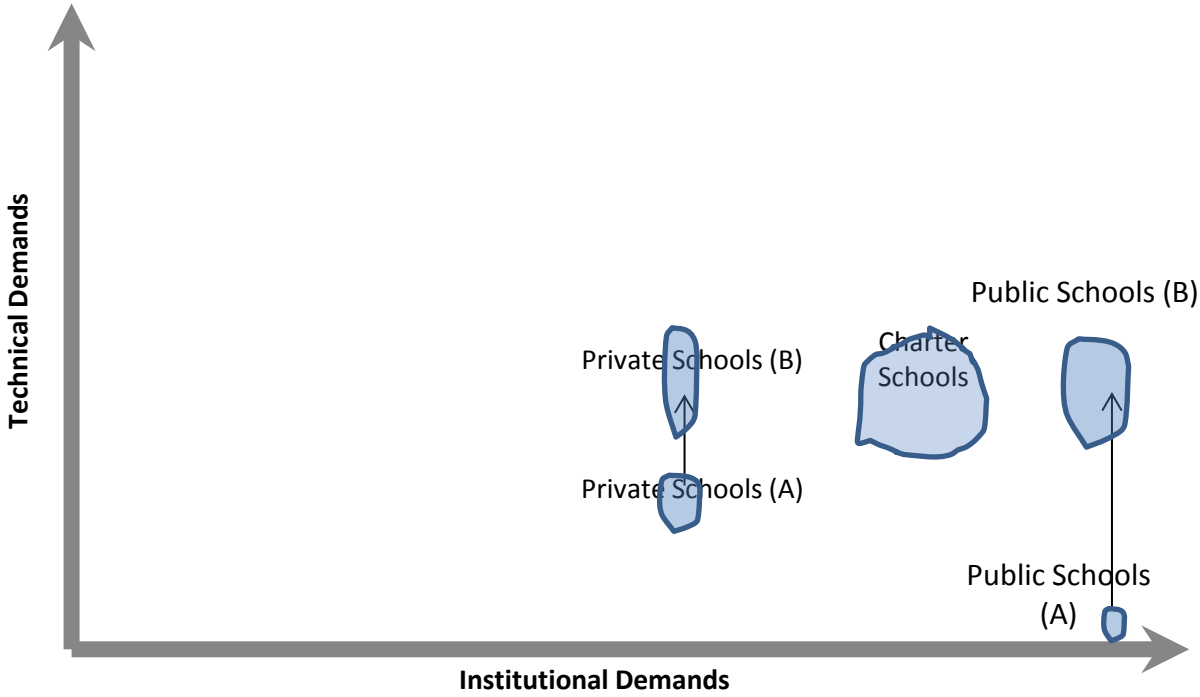
Beyond relegating competition to the purview of other organizational perspectives, early neoinstitutionalist accounts left little room for strategic interaction by organizational decision makers. This account seemed well suited to a public education system in which resources were bureaucratically distributed and the primary controls were based upon evaluation of formal congruence to prevailing categorical schema and accreditation processes. In this world there is little room for strategic action on the part of school administrators, district officials, labor leaders or other individuals in control of organizational decision making. As long as categorical demands are stable, strategy is limited to formal elaboration and mimicry. The dismantling of this cozy constellation of ritual adherence to institutional demands through the introduction of accountability, charter schools, and alternative certification and recruitment processes has made strategic interaction between individual schools, district offices, particular offices within state departments of education, and other local schools increasingly important for understanding organizational behavior.

Figure 2.1: Institutional and Technical Demands on Various Organizations



All of these are areas in which neoinstitutionalism has some difficulty. If we accept that institutional demands and technical demands aren't mutually exclusive, and that competition and technical demands aren't synonymous, increasing technical demands can be accompanied by unchanged institutional demands and by varying degrees of competition. Conceptually separating competition from technical demands suggests that competition is one way that technical demands might be made more acute. First, looking at the interaction of technical and institutional demands, Figure 2.1 is a modified reproduction of the basic table presented in Meyer and Scott (W. Richard Scott and J. W. Meyer 1991) adjusted to highlight the shifting pressures on various types of schools. Accountability and changes in the governance of teacher supply increased the technical pressures on public schools, while the introduction of a new organizational form, the charter school, contributed to this increase for traditional public schools and increased technical demands on private schools as well by increasing competition for crucial inputs.

Figure 2.2: Institutional and Technical Demands on Schools



While neoinstitutionalism recognizes that governance is multi-leveled, in their accounts it often seems as though organizations involved in governance are uninterested enforcers of cognitive systems and categorical schemas. Conceiving of states and governance systems as fragmented with multiple conflicting interests suggests that organizations, even those in the same subpopulation, will be subject to heterogeneous institutional demands, and helps to flesh out the difficult political terrain that schools face. For example, charter schools often have contentious relationships with local districts even though the professed interest of state and Federal departments of education is for charter schools to expand. Governance and control

relationships aren't uniform sector-wide, but instead exhibit important heterogeneity within sector, creating relationships that are different in character between particular sets of schools and key regulatory bodies.

Schools haven't only been subject to increased technical demands, but each type of school has also seen an increase in the variability of institutional and technical demands on schools of their type. Figure 2.2 shows stylized increases in the variability of the strength of technical demands on public and private schools with the introduction of charter schools. This is because each organizational population is related to the others via competition for inputs and status. This means that within a particular geographic space, increased competition can put heightened technical demands on some schools while leaving schools in other locales untouched. For instance, while accountability increases the technical demands on organizations, it is uniformly applied and enforced within the purview of a given state educational agency. Graphically, this would be a simple shift upward of the shaded area representing public schools. Competition however is variable in its effects on organizations due to the attenuating effects of local geographies, and due to strategic decisions by organizations to seek input and product niches. When increases in technical demands are driven by changes in evaluation from structural or process to output controls, the variability of technical demands on organizations within the same governance structure should not increase; however when increases in technical demands are driven by competition, variability in the force of these demands should also increase to the extent that competition is a force distributed unevenly across geographic, input, and product spaces.

Bringing competition into the discussion regarding schools as organizations highlights the possibility for variation in the character and strength of demands across organizations in a particular sector or amongst organizations of a particular type. Strategic action on the part of organizations introduce the possibility for variation in institutional demands within a particular sector as well, particularly in the context of a shift from formal structural or process controls to output controls. Schools need to manage relationships in order to secure resources including capital, facilities, and teachers, and consider the alternative options of local parents and families in order to attract students. Control over key resources like capital, students, teachers, facilities and influence with higher level units shapes the interactions amongst schools as well as between schools and other important organizations. In a world of heterogeneous institutional demands including diverse organizations operating according to different rules and regulations, and strengthening technical demands, organizational strategy, for example lobbying and alliance formation and niche positioning, have become crucial aspects of organizational behavior. In order to supplement the neoinstitutionalist account specifically with regard to these areas, I outline essential concepts from political-cultural neoinstitutionalism, resource dependence and organizational ecology.

Unelaborated Strains in Education: Political-Cultural Neoinstitutionalism, Resource Dependence, and Organizational Ecology

The success of the groundbreaking approach to organizational life laid out in the early neoinstitutionalist accounts of public schools left little impetus to revisit the topic as theory advanced. Instead, scholars focused their attention on the analysis of private firms and markets. The organization-environment dynamics at work in private firms and markets had been the focus of other traditions in organization theory; however as neoinstitutionalist scholars applied their ideas to the analysis of firms and markets, theory advanced in ways that can shed light on the changes in public education. At the same time, the dominance of neoinstitutionalism over organizational analysis in the public sphere meant that these other key theoretical perspectives in organization theory (resource dependence and organizational ecology), were largely unelaborated with regard to the organizational life of schools.

At its roots, much of organization theory was concerned with how managers read and responded to the challenges posed by their environment. The strategic management perspective focused on how people in organizations interpreted demands (the needs of their customers, the expectations of their investors, the concerns of their employees) and crafted policies and processes in response. This focus on the internal operation of organizations was critiqued by a perspective which argued that the relationship between an organization and its environment is more complex, and that all organizations are dependent upon resources external to them. Once this theoretical move is made, managerial decisions about internal processes become increasingly marginal and facets of managerial action involving perception and negotiation of resource dependencies become central. On the one hand, this perspective put a spotlight on the idea that an organization will succeed to the extent that it is able to control the resources that are crucial to its operation, and on the other, the emphasis on these dependencies widens the analytical focus to include other organizations capable of exerting control over the focal organizations operations, via those key resources. These two ideas: 1) that organizational analysis should focus on the resources that organizations need to survive and 2) that this focus should include external organizations with power over these resources directly prefigured the development of three theoretical lineages, resource dependence, population ecology and neoinstitutionalism itself. As detailed above, neoinstitutionalism has been pervasive in sociological research on education, but these other perspectives from organizational theory have remained in the background.

Resource Dependence and Political-Cultural Neoinstitutionalism

One theoretical perspective to emerge out this open-systems approach to organizations was the resource dependence approach (Davis and Cobb 2010; Emerson 1962; Pfeffer and Salancik 2003). The ideas produced by this perspective on organizations have enduring value, and many of them were incorporated into both population ecology and later versions of neoinstitutionalism. This approach advanced three essential ideas into research on organizations: first that organizations depend fundamentally on resources external to them,

often controlled by other organizations, second, these dependencies carry power with them, and third, these dependencies can often be mitigated or eliminated altogether by a variety of organizational strategies. As neoinstitutionalsit scholars continued to develop their theoretical perspective, they incorporated much of the imagery and some of the substantive ideas from resource dependence. The idea that strategic interaction and contests of power play significant roles in the creation, propagation and destruction of rules, regulations as well as norms and the sources and specific forms of legitimacy.

Resource Dependence & Inter-Organizational Power

The first premise of resource dependence is that organizations are vitally linked to resources in their environment. Often these resources are controlled by other organizations. This relationship of resource dependence is the foundation of inter-organizational power. To the extent that organization A controls a resource that is needed by organization B, and this resource is difficult to obtain from other providers, organization A will hold power over organization B. Crucially, this property holds in reverse as well. That is, A may hold power over B while B simultaneously holds power over A. In this treatment, power is a property of the relationship between actors.

Inter-organizational power flows from these differential resource requirements and controls. An organization experiences constraint to the extent that the resources it requires are controlled difficult to find, or available from a limited number of others. Much organizational behavior can be understood as the pursuit of strategies and tactics for reducing the control that these dependencies introduce. Organizations will typically seek to increase their autonomy in order to reduce the power that other organizations hold over them as well as the operational uncertainty that these dependencies introduce. Focusing on the relational network of resource flows between organizations, and operationalizing inter-organizational power as asymmetries in these flows, and interdependence as the bi-directionality of these flows, resource dependence offers a concrete approach to understanding how organizational dependencies introduce power into the relations between organizations.

Power Imbalance and Mutual Dependence

In its original formulation, resource dependence suggested that two organizations which are reciprocally dependent upon one another are interdependent. However, conceptual elaboration by Casciaro and Piskorski (2005) shows that this conflates two interrelated ideas: mutual dependence and power imbalance. Power imbalance captures the degree to which the power that A holds over B is greater or less than the power of B over A, though each holds some power over the other. Power imbalance is likely in instances in which resources provided by one of the organizations in the dyad can be easily obtained elsewhere (when A can easily find the resources that B provides from an alternative organization, C, but the reverse is not true), or when the importance of the resources flowing in one direction exceed those flowing in the opposite direction (the resource that organization A sends to organization B is crucial to B's operation while the resource that B sends to A is not similarly important for A's operation). If

either of both of these circumstances holds, and the resource relationship fails, one organization will face more uncertainty or performance setbacks than the other. In these situations, the more powerful actor is often able to appropriate more of the overall benefits of exchange by threatening withdrawal.

Regardless of whether or not a given dyadic relationship is characterized by power imbalance, A and B may each be dependent upon one another to a greater or lesser degree. That is, the sum total of the strength of A's dependence on B and of B's dependence on A is conceptually distinct from the difference between these dependencies. The totality of the dependence between A and B is the degree of mutual dependence. Distinguishing these two dimensions is important because each operates differently with regard to organizational tactics.

Cooptation & Constraint Absorption

Organizations faced with resource dependencies confront a world in which they are at the mercy of other organizations. In order to reduce the uncertainty in resource flows that may cause difficulties in the fulfillment of their essential functions, organizations will try to mitigate their dependence on the unpredictable behavior of other organizations through a variety of strategies. In any given configuration of resource dependence between two organizations, the mix of mutual dependence and power imbalance will suggest the range of strategies that these organizations might pursue as well as which strategies might be successfully implemented.

Broadly, strategic approaches can be segmented into unilateral and bilateral. Unilateral strategies are those undertaken by the focal organization in order to enhance autonomy from external constraint imposed by another organization without involving constraining organization. These include searching for alternate resource providers, resource substitutes, forming coalitions with other dependent organizations, and seeking the help of outside powers like political authorities. These unilateral approaches are likely to be undertaken by less powerful organizations in power imbalanced dyads regardless of the degree of mutual dependence characterizing the exchange relationship.

Bilateral strategies on the other hand directly involve the organization producing constraint. These include cooptation and constraint absorption. Cooptation involves the less powerful actor in a dyad offering another resource or creating another resource need for their more powerful partner in the hopes of redressing the power imbalance, and, like unilateral tactics, is likely to be attempted by the less powerful organization in a power imbalanced dyad regardless of the mutual dependence of the relation. Constraint absorption on the other hand is the attempt to internalize the resource dependency through a negotiated operational/ownership structure like a joint venture, merger, or acquisition. This strategy is the most organizationally interesting because theory suggests countervailing effects of mutual dependence and power imbalance on the deployment of this particular strategy. While the more powerful organization in a dyad characterized by power imbalance will have incentive to accept an attempt at cooptation as long as the additional resource offsets the prospective gains from the exercise of their power, this organization will have no incentive to acquiesce to an

attempt at constraint absorption by their less powerful exchange partner. Power imbalance is a serious obstacle to constraint absorption, but is a preferred tactic for dealing with resource dependencies characterized by balanced power and high levels of mutual dependence.

Politics, Culture and the State

The power of the resource dependence perspective lies in the specific propositions it offers about how power manifests itself strategically in the interactions between organizations, based upon the character of the resource interdependencies between those organizations. The major weaknesses of resource dependence from a sociological perspective are its inability to account for the creation and diffusion of strategies for mitigating dependencies, changes in the use of particular strategies over time in absence of changes in existing dependency structures, and the larger context of these often multiplex dependencies and the interactions based upon them. Furthermore, resource dependence has a difficult time delineating how symbols are used in inter-organizational struggles for power and control.

While the origins of a given configuration of resource controls in a particular field are not theorized within the scope of resource dependence, it's an area of research well suited to the neoinstitutionalist perspective. Furthermore, resource dependence offered scholars in the neoinstitutionalist tradition a tractable way to incorporate notions of inter-organizational power that were lacking in the theory's early focus on cognition and sector governance structures. As neoinstitutionalist scholars turned to analyzing production and capital markets, the insights of resource dependence theory, particularly the emphasis on power and strategic interaction, took shape in the form of a move toward the field as the animating metaphor for sociological in inquiry into organizational life in markets (Fligstein and McAdam 2012; Fligstein 2001).

Unlike early neoinstitutionalist work, this move explicitly calls out existing power differences as crucial to an understanding of organizational life. This insight recast stable fields characterized by power imbalance as reproduced through strategic interaction between incumbent organizations holding power and challenger organizations. The way power is operationalized in a resource dependence perspective is useful in delineating how these interactions unfold and the types of strategies organizations are likely to undertake in order to deal with dependencies. Neoinstitutionalism adds another layer to the account offered by resource dependence through reference to cognitive scripts and schemas which shape interaction as well as regulatory structures that both circumscribe and enable the maintenance of resource dependencies and the legitimacy of the strategies organizations pursue to mitigate them. The interactions between organizations in a given field proceed according to rules and governance structures put in place and maintained by the state and other governance units as well as by the incumbent organizations interested. Incumbent organizations use their power to influence the state and other governing organizations in order to maintain rules that favor them over challengers and reproduce their positions of power.

Integrating the insights of neoinstitutionalism with a more direct account of the roles of power and strategic interaction in creating predictable social relations and stable markets, scholars incorporated the fundamental insights of resource dependence into a theoretical perspective which, while maintaining a neoinstitutionalist appreciation for the importance of legitimacy, including the taken for granted aspects of social life embodied by cognitive legitimacy, highlights power and strategic interaction. Already, these advances have taken us a good distance from neoinstitutionalism as it was when it turned its sights on public education initially; however there is another branch of organization theory which can add to a contemporary approach to public education, particularly as regards the growth and death of organizations and organizational populations, differentiation and the role that competition plays in inter organizational life.

Organizational Ecology

Population ecology, alternatively called organizational ecology, is an approach which focuses on the impact of the environment on organizations in terms of key resources, using the characteristics of the environment to explain aspects of entire groups or populations of organizations (Hannan and Freeman 1977). The bulk of research in organizational ecology attempts to explain the abundance and diversity of organizations, examining founding and failure rates of organizational populations as functions of economic, social, and political characteristics of their environment (Barron 2002; Glenn R. Carroll 1984). This perspective begins by defining a population of organizations as those with the same or similar resource dependencies or resource spaces. It then asks questions about how the economic and socio-political characteristics of these environments shape the overall founding and failure rates of organizations as well as the particular strategies these organizations take in securing resources.

Density Dependence, Legitimacy and Competition

The key model for explaining founding and failure in populations of organizations is the density dependence model. The essence of this model links the population dynamics of a type of organization to a resource space. An organizational resource space, defined as the types and quantities of resources needed for organizations of a given type to survive, shapes the limits of population density through its carrying capacity. This is the capacity of the environment to support increasing numbers of organizations. At any given point in time, density is determined by prior density, and the rates of founding and failure (Hannan and Freeman 1993). These rates change as the result of existing density and the carrying capacity of the resource space. When the change in the rate of founding for an organizational population equals zero, the carrying capacity of a resource space has been reached and the population is in equilibrium. Beyond the quantity of needed resources, two factors affect density through their effect on the rates of founding and failure and on the carrying capacity of the resource space: legitimacy and competition.

Just like its theoretical cousin neoinstitutionalism, organizational ecology recognizes the importance of legitimacy (Barron 2002). In the terms of neoinstitutional theory, organizational

ecology has focused on cognitive legitimacy as a crucial force in determining organizational density. In the infancy of an organizational population, that is when these organizations are rare, they may have a difficult time gaining access to resources and could confront considerable resistance. If organizations survive and the population density grows and these organizations become the primary method for achieving a given end, people begin to take it for granted. This process of cognitive legitimation further increases rates of organizational founding and reduces failure as these organizations, having gained legitimacy, have better access to essential resources. Furthermore, legitimation of a particular organizational population may increase the carrying capacity of the population as political and social processes make a greater quantity of resources available. This tendency of organizational density to increase cognitive legitimacy which in turn feeds back into increased density is at odds with the second force affecting population density.

Even as cognitive legitimation increases the founding rate in an organizational population, the growing density of organizations spurs competition. This dynamic applies both within and across populations of organizations. Populations of organizations occupying a particular resource space vie with one another for access to these resources (Hannan and Freeman 1993). If density is low and the number of organizations or organizational populations are small relative to the size of the resource space, competition will be low; however, as density increases, either through a shrinking resource space or increasing numbers of organizations or populations in a given resource space, competition will become more intense. What's more, incremental change in these numbers will result in intensified competition however it will do so at an increasing rate as density rises. In terms of intra-population competition, adding a single organization to the population doesn't increase competition very much when density is low, but when density is high a single additional organization increases competition dramatically. This dynamic applies to inter-population competition as well. In each case, the degree of competition is crucially dependent upon the extent to which organizations or populations of organizations share a resource space.

Resource Spaces and Niche Development

Resource spaces divide populations of organizations with the same general resource dependencies into groups based upon the degree of similarity in the exact resources those organizations seek. Whole populations of organizations can exist with overlapping resource spaces putting them in competition with a wide range of organizations which, at the outset, seem quite different. While we usually define set of organizations by a common purpose (for firms, their product) this belies the complexity of resource space overlap. For instance, two sets of organizations may produce things which are substitutes for one another with vastly different inputs, or produce vastly different products with the same inputs. A clear example of the former is electricity which can be produced by companies using a wide variety of inputs for which these sets of organizations do not compete, but all of which produce an ultimately fungible good at the point of consumption. An example of latter is makers of jet fuel and silicon chips which don't compete in product markets, but both are reliant upon helium as a key input and so share at least one key resource dependency. Even within populations of organizations

sharing identical resource spaces, the picture is complicated by niche seeking (Freeman and Hannan 1983).

As density increases, organizational populations operating within a given resource space, or analogously individual organizations within a specific population face strong competition for key resources. One strategy for dealing with this competition is to shift organizational processes, or the nature of key outputs to narrow the type, range, or location of resources (supplies, workers, customers, etc.) needed, that is to change the dimensions of the resource space. This strategy is referred to as niche seeking. One classic example of niche seeking is when companies target their products to particular groups of consumers based upon their income. Even though two companies producing widgets are ostensibly in competition, to the degree that they divide the market for widget buyers (a key resource) into high and low ends, they can split the resource space into niches and avoid competition. In this example, these niches may overlap in the middle as mid income buyers could either go high or low in their widget purchase. The process of niche seeking generally involves product differentiation which attempts to make distinctions, real or imagined, in some aspect (overall product quality, a particular product strength, etc.) of the organization's product.

The strategic choice of trying to take up as much of the resource space as possible, or focusing on a particular area of resource space in an attempt to dominate it completely is the choice between generalist and specialist strategies. The larger the width of a particular organization's niche in the resource space is, relative to other organizations sharing that space, the more the organization is said to be pursuing a generalist strategy, and the narrower the width the more the organization is a specialist. The two general strategic models provide remarkable flexibility in understanding how organizations deal with competition and how we might expect organizational ecologies to evolve over time. These strategies are also linked to the variability in the environment. These key aspects are generally presented as variability and grain (Hannan and Freeman 1993). Variability refers to the size of fluctuations while grain refers to the frequency of change in the direction of variation. Environments in which change in resource availability or the types of resources needed are frequent (fine grained) and small, or even frequent and large encourage specialization as the frequency of change makes it easy for organizations with narrow niches to wait out adverse environmental conditions. On the other hand, environments in which change is infrequent (coarse grained) may encourage specialization if the variability is small, but if the variability is large, generalist organizations will be at an advantage for their ability to outlast long stretches of highly adverse environments.

Organizational ecology and neoinstitutional organizational theory have increasingly been linked to one another. In particular, organizational ecology draws on the emphasis that neoinstitutional theory places on legitimacy to explain the initial changes in the founding rates of organizations, and has increasingly used cultural process to explain niche development and boundary creation. The tools and ideas developed by organizational ecology have been extensively applied to the development of various industries, but have not been viewed as useful for the world of education. Organizational ecology has made its name through studying organizational diversification and niche formation, as well as competition within and between

organizational populations. These are some of the greatest areas of weakness in contemporary organizational sociology as applied to the world of education suggesting that careful application of these ideas may prove useful for understanding processes like charter school growth and diversification and the interactions between charter schools, traditional public schools and private schools in local settings. In the next section I integrate these perspectives to produce a flexible set of key dimensions that structure the organizational life of schools.

Toward a New Institutional Ecology of Schools

As laid out above, neoinstitutionalism in its analysis of public education emphasized compliance with categorical imperatives. I've argued that this take has several crucial problems including: 1) disregarding the simultaneous institutional and technical demands on organizations, 2) the confounding of technical demands and competition, 3) conceiving of the state as a fragmented but uninterested force rather than as a constellation of actors with interests that are sometimes coincident and sometimes divergent, 4) focusing on the elaboration of evaluative mechanisms without including resource control, 5) disregarding competition between schools for key resources including students, teachers, facilities, and funding, and 6) disregarding strategic interaction between organizations.

Some of the holes in neoinstitutional theory were addressed in work on other organizations in the years following Meyer and his colleagues' work on public education. As the research program developed, particularly with the work on the structuring of markets by state actors (Fligstein and Luke Dauter 2007), the neoinstitutionalist conception of the state gained depth. The extension of neoinstitutionalism into the world of markets also led researchers to a more nuanced perspective on the relationship between institutional and technical demands in organizational environments, particularly the ways in which institutions provide the foundations for market participants to interact. Research into political structuring of markets revealed the shortcomings of neoinstitutionalism regarding strategy and power. The lack of power, politics, and strategy in the neoinstitutionalist analysis of public education poses some difficulty for an analysis of organizations in modern public education. With the institutionalization of both Federal and state accountability regimes creating new technical demands for both schools and districts and charter school laws introducing new actors and drawing a new constellation of interest groups and private funders into the arena of public education, the role of strategy, politics and organizational power in public education needs to be reconsidered.

The other glaring area of neoinstitutionalist deficiency is the inability to deal easily with competition and strategic differentiation. The growth of new organizational populations and how those organizations relate to one another both within and across populations raises problems for neoinstitutionalism in the context of modern public education. However, these topics are readily amenable to an analysis rooted in organizational ecology. Much of the focus in organizational ecology has been on the interaction between populations of organizations. This seems particularly relevant in the wake of charter school expansion. A foundational

argument made by charter school advocates was that competition between charter schools and traditional public schools would force complacent traditional public schools to improve. This is crucially dependent on these organizational populations vying for the same students, teachers and dollars. However, existing organizational research into schools offers little in the way of guidance into what sorts of resource dimensions are relevant to the organizational life of schools.

Conclusion

I've argued that the neoinstitutionalist take on organizational environments in public education is unable to account for the deeper changes that we've seen in the field over the last 50 years. Neoinstitutionalism offers a persuasive understanding of organizational conformity and resistance to reform among educational organization (J. W. Meyer and Rowan 1977; W. Richard Scott and J. W. Meyer 1991). Categorical schemas deeply ingrained in our understanding of the world shape goals and perceptions as well as governance structures and exchange relationships. Congruence with these schema and their regulatory representations lend legitimacy to organizations. In the world of education, this congruence becomes the key metric by which organizational success is measured because their outcomes are difficult to measure. In this context, schools and districts are able to resist the percolation of reform down through the organization to their technical core (teachers and classrooms) through ceremonial processes and ritual response. This often takes the form creating new categories of personnel or organizational divisions, making sure the credentials of their employees meet requirements and other formal structural elaborations. Decoupling of these formal aspects from core organizational processes allows schools and districts to shield teachers and classrooms from reform efforts while complying with environmental pressure from governing organizations.

This world of stable and certain organizational environments and ritual response to pressure is difficult to square with the changes we've observed in the relationships between state and federal education authorities, the shifts in funding sources and in structures governing the supply of schools, as well as the changes in the institutions regulating the flow of students and teachers into schools, in the administrative relationships between districts and schools, and in the measuring sticks used to assess schools and make appeals for legitimacy. The roots of these stable and change resistant organizational dynamics are socially shared and recognized goals for the organizations in question and a measures of organizational congruence with the pursuit of these goals. When crisis redefines the goals of the field, and the foundations of claims to legitimacy are called into question, opportunities for outside actors to reshape rules and measures arise, and ritual response is no longer sufficient to maintain legitimacy and stave off environmental incursion into organizational processes and life chances.

Chapter 4 describes this process in depth, delineating three key crises responsible for the waves of reform that altered authority relationships at every level, introduced new institutional arrangements governing the flow of resources and created a diversifying organizational landscape. Coming from a neoinstitutionalist point of view, we'd expect these

crises to generate elaboration in formal structure with little or no real change in resource flows, organizational populations or organizational inter-relationships. This chapter details the ways that these crises led to the undermining of foundational goals, measures and relationships in the field spurring field, relationship and organizational level changes of various types.

Even as the key actors, goals, and measures in the organizational field are remade, the dynamics of power and competition between organizations in the field take on new importance. Neoinstitutionalism struggles with describing how power and control over resources shapes organizational interactions. As these crises shift relationships of power and control in the field, new inter-organizational incentives come to the fore and power dynamics become crucial to understanding how organizational diversification in the field of education plays out at a local level. At the same time the specifics of reform efforts in the wake of these crises have decentralized of resource streams and increases competition between schools for capital, students, and teachers. These competitive dynamics also shape organizational strategies and population dynamics in a diversifying field. Chapter 5 extends this critique by looking at how neoinstitutionalist organizational processes alone cannot account for the adoption and expansion of new organizational populations. Instead we need the neoinstitutionalist focus on legitimacy along with a resource dependence conception of power dynamics and an understanding of competition drawn from organizational ecology. Furthermore, these organizational processes interact to shape field and organization level outcomes.

Before I turn to these topics in chapters four and five, we first need to examine the differentiation in public schooling at both the field and school levels. In the next chapter, I integrate insights from population ecology into the fundamental role that resource spaces, niche seeking, and niche overlap play in defining sets of organizations and mitigating uncertainty and competition, with neoinstitutionalism's and resource dependency's focus on the roles of coercive and normative forces, political relationships, and strategic interaction in shaping organizational strategies, in order to outline a basic set of the most salient environmental aspects of schools. This provides a typological foundation for an analysis of school organizations, and foreshadows how different schools are able to pursue different kinds of internal strategies vis-a-vis critical resources in order to deal with a heterogeneous organizational field in which competitive pressures on the one hand and coercive and normative pressures on the other operate unequally across an increasingly variable set of organizational types.

Chapter 3 - Mapping the Landscape of Schooling

Dimensions of Differentiation

The original neoinstitutionalist account of education detailed the institutional demands shaping the operation and formal structure of public schools (J. W. Meyer and Rowan 1983; J. W. Meyer et al. 1988; J. W. Meyer, W. R. Scott, and Strang 1987; J. W. Meyer et al. 1983) and to a lesser extent, private schools (W. Richard Scott and J. W. Meyer 1988). Given the changes in the world of public education, and the difficulties the neoinstitutionalist account has in dealing with these changes, I've detailed some theoretical perspectives capable of filling crucial holes and helping to account for organizational behavior in this new environment. In order to provide a foundation for an analytical perspective on the organizational life of schools that incorporates all of the perspectives detailed above, and is capable of accounting for strategic behavior by schools in an environment characterized by increasingly complex and heterogeneous demands, both technical and institutional, I begin by detailing mechanisms and dimensions of school level differentiation including: 1) administrative control structures, 2) key resource inputs including capital, students and teachers, and 3) educational product qualities including grade structures, curriculum and pedagogical approaches and geographic location. As differences between schools along these dimensions continue to proliferate across the field of education the types of schools we see becomes increasingly diverse. After describing dimensions of differentiation, I then return to the field level to describe the results of differentiation along these key dimensions in the types of schools we see.

A view of schools which simply divides organizations into public and private is inadequate. This division focuses on capital as the key resource and where the ultimate control over this resource rests, splitting schools into those funded with taxpayer money and governed by a public school district responsible to publicly elected officials, and those funded with private money, typically tuition and donations, and administered by a private for on non-profit organization. This traditional divide is no longer adequate. On the one hand, both private and public sectors contain considerable heterogeneity, and on the other, as reform efforts have attempted to create "hybrid" organizational forms, the distinctions between these two sectors has blurred, and schools have become increasingly differentiated along a variety of dimensions.

A fundamental tenet of the sociology of markets is that organizations subject to competition will differentiate themselves to limit competitive pressures and insulate themselves from market shocks. As markets expand, new niches develop. Rather than niches being havens obvious to economic actors given the cost and consumption dynamics of their market, research into how niches develop suggests that policy, culture and strategy all play crucial roles (G. R. Carroll and Teo 1996; Glenn R. Carroll and Swaminathan 2000; Glenn R. Carroll 1984, 1985; Freeman and Hannan 1983; Hannan, Glenn R. Carroll, and Pólos 2003; Hannan et al. 2003; Hannan 2005). I suggest that organizations develop niches in four distinct ways. First, niches can be created by political fiat dividing organizations into separate arenas along a given dimension. Second, organizations can find a particular spot along an already

legitimate dimension of differentiation and carve out a space for themselves. Second, they can borrow strategies of differentiation from other organizational sectors. Finally, they can develop and market entirely new dimensions of differentiation, often spurred by technological change.

Organizations can differentiate and create niches along input dimensions as well as with respect to various qualities of their outputs, products or customer base. While differentiation is relatively under-examined amongst public schools, there are clear examples of each of these types of differentiation amongst various types of schools, particularly with the expansion of charter schools not subject to centralized district control over most dimensions of possible differentiation. In this section I cover changes amongst school in administrative control structures and the attendant positions of schools along key input and output dimensions, and then turn to leveraging differences along these dimensions into a basic typology of schools, both public and private.

Administrative Control

The nature of the organization exerting administrative control over the school has generally been viewed as fundamental to understanding school operations and is, along with funding source, one of the two criteria most frequently used to categorize schools as public or private. Administrative control structures define the formal relationships of authority within a school and between the school staff and outside organizations. These structures regulate the allocation of capital and materials, personnel decisions, lines of communication, and the implementation of policies programs and process. The extent to which administrative control is lodged within the school organization indicates the degree to which the school is capable of acting independently.

For the most part, public schools are subject to much more extensive external administrative control than their private counterparts: traditional public schools are overseen by school districts. This system of control moves the decision making structuring the day-to-day operation of schools including resource allocation, policy creation, implementation, and enforcement and even personnel decisions outside of the organization. Though the precise relationships between schools, districts, and state governments differ markedly from state to state, school districts as organizations serve as intermediaries between individual schools and state and federal education organizations. Transitioning to a theoretical perspective that highlights strategic action recasts the complex organizational hierarchy of public school districts as fields which savvy school administrators can strategically navigate in order to get resources, or to insulate themselves from the application of particular policies.

Unlike public schools, administrative control over private schools is usually located within the school organization. Usually, ultimate control over private schools lays with a board or, in the case of for profit schools, an owner or owners. While for the most part this means that the totality of the administrative control structure governing the operations of a school is located within the formal organizational boundaries of the school, there are notable exceptions. Catholic schools for instance are part of a larger administrative structure, and

though they a relatively small part of the private school world, it is important to note the existence of other privately owned and operated organizations which oversee multiple schools. Sometimes referred to as private school systems (PSSs), these organizations operate many schools while locating ultimate administrative control in a separate corporate or operational headquarters. Overall, the crucial differences between public and private schools in terms of their administrative control structures are that these schools are usually controlled at the school level, meaning administrative decisions are usually made by school employees, and that those making the administrative decisions are not subject to political authority in the execution of their work.

The complex structure of school districts and their ultimate responsibility to a politically elected school board, has led public school reform advocates to suggest that excessive bureaucracy and the externalization of key decision making compromises the execution of the expressed goals of schools to provide the best possible education for their students. These reformers generally believe that private schools outperform public schools, and that they do so in part because of their freedom from political oversight (Chubb and Moe 1990a). This diagnosis has been central to the enactment of charter school legislation and is the core of the theory supporting why charter schools might be able to outperform their traditional public school counterparts. Charter schools and charter school operators are, for the most part, free from the administrative control of school districts receiving their funding directly from the state, crafting their own pedagogical and curricular approaches, and making their own personnel decisions. These differences suggest that the administrative control of schools can usefully be described as *internal* in the case of stand-alone charters and private schools, as *external-public* in the case of traditional public and other district controlled public schools, and as *external-private* in the case of private schools or charters that are part of larger systems of schools managed by the same organization.

While administrative control is, for the most part, located at the school level amongst charters, charter schools and other non-traditional public schools like pilots are often part of dispersed networks of schools that share information, and resources and pool advocacy efforts. Particularly in the charter school world, advocacy organizations provide resources for individuals and organizations interested in starting charter schools including assistance in finding facilities, securing public money, locating private sources of financing, political advocacy with legislators, legal services as well as public relations. This is very different than the organizational world of traditional public schools whose external organizational relationships are primarily subsumed by the district, and teacher's union. While external administrative control gives traditional public schools less leeway to respond to changes in their local environments, these are also relatively stable relationships. On the other hand, the fact that charter schools are products of recent and continued political action, have often antagonistic relationships with local educational authorities including their authorizing agencies, suggests that school leaders will be more engaged with external organizations and oriented to strategic action.

Input Differentiation

As the administrative control of districts over schools loosens and the charter sector continues to expand, strategies of differentiation have become increasingly important. The flexibility that schools have in terms of pursuing various strategies of specialization or differentiation is structured by their exposure to coercive or normative institutional pressures from outside of the organization, i.e. the locus of administrative control over the school. Moving from resource dependence and organizational ecology, I suggest that schools can be meaningfully looked at in terms of differences in their access to key resource inputs including: 1) capital or funding that schools use to compensate personnel, purchase materials, and pay for other services, 2) the labor, particularly teachers that schools need to perform their essential function, and 3) the students which are both a required input and the ultimate product of the school whose goal it is to impart knowledge and skill to them.

Financing

Historically, how an organization is funded (along with who controls it) has defined the division between public and private, the key categorical separation for any examination of education. Public schools are funded with money coming from tax revenues. Traditionally, most of this revenue has come from local sources, with districts themselves having the capacity to levy property and parcel taxes, subject to some limitation set by the state government. Private schools, on the other hand, are funded with private money, obtained largely from tuition charges, but also through charitable donations from individuals or other non-public organizations (corporations, foundations, trusts, etc.). Because they charge for their services, these schools often serve students who are relatively economically advantaged. While private schools aren't subject to the vagaries of politics which inject uncertainty into their funding flows, they are subject to the impulses of the market. Depending upon the tax status of the school it may also receive significant funding from donations. For private schools getting the majority of their revenues via tuition however, funding is essentially synonymous with enrollment.

Source of funding is a key resource dependency for schools, and has implications for the actors that schools, as organizations, will be responsive to. Following this logic, school choice advocates have pushed for ways to use public money (tax revenues) to fund privately controlled school organizations (charter schools, vouchers and tax credits are all examples of this), rather than route funding through district bureaucracies they perceive as inefficient. However, the funding models for charter schools vary. For the most part, charter schools are directly funded by the state. These schools receive the same per-pupil funds that traditional public schools do as well as categorical money earmarked for charter schools. Other charter schools however choose to remain under the funding purview of their local districts. These schools have funds managed by districts but can access local money coming from parcel taxes and the like, as well as access to the larger pools of program related categorical funds.

While public schools and charter schools compete for dollars in the form of per-pupil funds, charter schools and alternative schooling options have also been beneficiaries of private money in the form of direct support from foundations. Foundations have provided a key source of financial support for various public school reform efforts, and as the assets managed by the organizations continue to grow, the capital that they inject into public education effort has become increasingly important (Reckhow 2010). These foundations have been a valuable resource for charters; however there is little evidence as to whether these monies have been taken away from other types of schools and shifted into charters. Foundation boards committed to education reform funnel scarce dollars into various reform efforts, some of which goes to traditional public schools, and some to charters. Whether or not foundations see these schools as in competition with one another for their money, and whether the schools themselves believe they are competing is an empirical question that remains to be answered. How public funding is administered, and who controls it is increasingly varied, particularly as charter schools continue to expand in number and enrollment, and as funding sources and dependencies for public schools increasingly vary, so will the environmental pressures they feel and their responses to these pressures.

Labor Relations

Private schools and public schools also differ remarkably in their relationships to their own employees. Because administrative control rests with the school district, public schools often have marginal control over their hiring and firing practices. Instead, these schools are bound by labor agreements negotiated between their school district and the public school teacher's labor union. In stark contrast, private schools not only control their own labor relations, but they also do not employ unionized teachers. Private schools have much more direct control over their employees with no administrative oversight from a school district and no need to abide by a collectively negotiated labor contract. This gives these schools the ability to hire and fire teachers and other employees at will.

The fact that public schools are bound by labor agreements negotiated between frequently powerful teachers unions capable of mobilizing voters, and politically accountable district leaders has been targeted as a source of ineffectiveness in public schools by reformers who see teacher unions as a bulwark against the kinds of changes needed to improve failing schools. These critics suggest that teachers unions prevent school administrators from punishing or firing poorly performing teachers, or, conversely, rewarding teachers who excel at their craft, and that the separation of performance from payment and job security allows disinterested teachers to persist while engaged teachers see no pecuniary upside to maintaining a high level of performance.

This critique was incorporated in the drafting of state charter school laws. Along with independence from administrative control by a school district, charter schools are not bound by the labor agreements negotiated between the district and the teacher's union. The result is that charter schools have greater ability to hire and fire teachers, and for the most part do not employ unionized teachers. Even in the rare cases in which charter schools employ unionized

teachers, these unions are often school or operator based, and negotiated with the charter management organization or specific charter school. The downside from the charter school administrator perspective is that independence from labor unions might make recruiting teachers interested primarily in job security more difficult forcing them to compete for teachers willing to forgo union membership, a labor pool at least on the surface more similar to private school teachers, and although charter schools may have more flexibility in terms of allocating their funds, they are still prohibited from charging tuition, and thus could be at a disadvantage competing for teachers who value salary over job security.

The institutions governing the recruitment, training, certification and placement of teachers has also changed in ways that have consequences for how schools behave. Alternative recruitment organizations like Teach for America (TFA) have created a new pool of teachers less committed to teaching as a profession and more likely to see teaching as a temporary pursuit (Raymond, Fletcher, and Luque 2001), and alternative certification which has circumvented the university based path to teaching has introduced increasing variety into the training backgrounds and understandings about what teaching is and what a job teaching should look like (Hammerness and Reininger 2008). With the shifts in the recruitment pipeline for teachers, and the rise of charter schools unbound by the same labor agreements, the pool of prospective teachers has changed as has the ways in which various types of schools relate to their employees. Traditional public schools, for the most part, are bound by extensive collective bargaining agreements and centrally managed human resource processes. These structures and relationships circumscribe the ways that traditional public schools can respond to environmental demands while giving more leeway to charter schools, and provide a new pool of non-union labor for expanding charters. Although there is little empirical work on the how these recruitment and certification changes have aligned with the waning power of teachers unions, the persistent concentration of reformers on teacher accountability measures, and the expansion of charter schools; it seems likely they've changed labor market for teachers, traditionally segmented between public and private schools. Whether the expanding charter school sector is being staffed by teachers who otherwise would have sought positions in private schools, charters are employing teachers who would have joined the ranks of unionized traditional public school teachers, or whether they are being staffed by this new pool of teachers is an important question for understanding how these schools populations will behave vis-à-vis one another.

Admissions

If we conceive of students as one dimension of the resource space faced by schools, admissions processes become central as the means of access to a key resource, and an important differentiator between types of schools. Public schools are required to allow admission to anyone who wishes to attend, regardless of disability, language, etc., with the crucial requirement that the student resides within a zone of attendance, administratively defined at the district level. This physical link between public schools and the communities they are located in is a key aspect of public schooling for two primary reasons: 1) tying public schools to the communities they are located in is thought to foster the development of social ties, civic

morale, and a sense of shared interests 2) tying attendance to residence transmits existing residential segregation into public schooling, and means that families unable to afford the tuition required by private schools have no recourse but changing residences if their zoned public school is ineffective or otherwise doesn't meet their standards. The introductions of public schools of choice, magnet schools and charter schools, were direct attempts to solve the problems introduced by residential attendance requirements. Magnet schools often carry a race/ethnicity requirement as they were intended to create greater integration. These schools usually have a particular subject or even a pedagogical focus different from traditional public schools, and may have performance requirements for admission as well.

Charter schools are also public schools which do away with residential requirements. Along with the misaligned incentives put in place by district administered funding and political control over school policy, public school reform advocates increasingly attacked the residential attendance system as the most pernicious institutional barrier to improving the effectiveness of public schools. The primary criticism that school choice advocates level at public schools is that residentially zoned public schooling gives students whose local school is dangerous, or ineffective little or no recourse. Accordingly, public charter schools for the most part have loose residential requirements: admissions are open to any student within the jurisdiction of the authorizing agency (typically a district or a state education board) regardless of their specific address. In those cases in which a charter school is oversubscribed (more students apply for admission than there are seats in the school), schools are generally required to hold a lottery to decide admissions. There are exceptions to this however, notably when schools apply for their charter as conversions of traditional public schools. In these cases charter schools are often required to admit students residing in the attendance zone of the converted school. While charter schools are for the most part not allowed to refuse students admission based upon where they live, some charter schools have other commitment requirements. Parents and family members may be asked to commit to volunteer requirements before their children will be admitted, while others have been known to refuse admission to students with special needs due to a lack of facilities and programs capable of accommodating those needs (J. Smith et al. 2011; A. West 2006).

Private schools have no such residential requirement. These schools have almost complete leeway in terms of the potential requirements for entry. Other than constitutional prohibitions on race/ethnic or gender requirements for admittance, private schools are free to institute whatever admittance criteria they choose. Private schools often use performance criteria, and require some amount of tuition before granting attendance.

For traditional public schools, the resource space of students is partitioned, and boundaries enforced by the district. This sector organization precludes competition in favor of predefined centrally determined resource allocation. While schools cannot engage in competition by drawing students who reside in other areas, they are also at the mercy of: 1) forces which change the distribution of students within these designated niches; residential mobility being the most obvious and 2) organizations under no coercion to obey these administratively defined boundaries, namely private schools and public schools of choice

including charters and magnets. The image we get of the student resource space is one of a highly asymmetric landscape with traditional public schools protected from competition with one another, but facing competition from private schools and the growing charter school sector.

Product Differentiation

Above I discuss differentiation amongst schools in key resource inputs; however schools also have the ability to differentiate based upon dimensions of their operation or production. Someone has to decide what grades a school will offer, what the school will teach, how it will teach and where it will be located. Private schools are uniformly able to set themselves apart from one another as well as from their public counterparts based upon these criteria. The picture is more complicated for public schools. Along with the increasing heterogeneity in administrative control, and the changes in the key resource dependencies, public schools as a group are increasingly heterogeneous with respect to their ability to specialize and differentiate along these dimensions.

Grade Offerings

Grade offerings are a highly institutionalized form of input niche differentiation backed by all three types of legitimacy, and created and enforced by public authority. Public schools are typically divided into niches serving one of three areas along the array of grade offerings: elementary, middle, and high schools. These have been stable sets of grade offerings for the most part; although they have changed over time. For example, in many places sixth grade was moved from elementary schools into middle schools. This differentiation typically sets up a tiered system in which several elementary schools feed a few middle schools which in turn feed a single high school. Private schools on the other hand are far more likely to adopt mixed grade levels, often with elementary, middle and high school grades under the same roof. This establishes an alternative for normative grade offerings in which students of many different ages are taught.

Charter schools have considerable leeway in choosing grade offerings. Some charter schools particularly those that are conversions or those that are district affiliated will have standard grade offerings, but independent charter schools have much more varied sets of grades, similar to private schools. How charters position themselves vis-à-vis grade structure is an interesting question, particularly considering the varying cognitive and normative legitimacy for non-traditional grade structures depending upon the prevalence of private schools with mixed grade structures in the immediate environment.

Curriculum & Pedagogy

Schools also differ in terms of their control over the content of their teaching and how they go about imparting this knowledge to their students. Curricular differentiation as a strategy is supported by the cognitive legitimation of categorical differentiation in bodies of knowledge. On the other hand, generalism in curricular focus remains the purview of the

traditional public school; although some have argued that as budgets tighten and high stakes testing increasingly link the organizational life of schools to measureable outcomes for students, primarily test scores, this generalism has been curtailed in favor of purely focusing on tested material. Pedagogical philosophy is another area of product differentiation. This is not something that is typically seen amongst public schools which present themselves as having an undifferentiated or at least unadvertised approach to teaching. Amongst private schools however, pedagogical philosophy is a clear marker of differentiation with longstanding approaches like Montessori, Waldorf, and Reggio Emilia to name a few existing alongside new continuous improvement, project based learning, and others.

Both curriculum and pedagogy are dimensions of differentiation that are highly constrained amongst district controlled schools but common amongst charter schools. For public schools, curriculum and pedagogical approaches are heavily circumscribed by school districts, state education agencies, and state political bodies. On the one hand these schools are, for the most part, limited by state standards in their freedom to adjust curricula, and on the other the pedagogical approaches available to teachers in traditional public schools are subject to political oversight and district control. These process controls limit the ability of traditional public schools to adjust to demands of students and parents. With the rise of accountability and the shift towards outcome controls in the form of achievement standards, districts have experimented with giving schools greater leeway and with allowing greater differentiation amongst the schools they control.

Private schools generally have significant leeway in terms of their educational approaches, and subject matter. These schools often employ a specific educational approach or philosophy, and may have a specialized curricular focus. Perhaps most significantly, unlike public schools which are constitutionally prohibited from offering religious education, these schools are free to offer religious education to their students.

Charter schools fall somewhere in between traditional public and private schools in terms of their freedom to teach their own curricula and pursue their own pedagogical approaches. While charter schools are bound by the same prohibition from sectarian teaching as traditional public schools, they are less subject to district control in terms of their pedagogical approach to teaching students and frequently offer a specialized curriculum focused on a particular subject or set of subjects. The easing of process controls on charter schools was intended to encourage innovation and improve student achievement; however these schools are subject to authorizer checks on adherence to the school's mission, as well as to the same performance accountability as traditional public schools. The question from a theoretical perspective is whether these schools are imitating traditional public schools in order to gain legitimacy or differentiating in order to secure niches, despite risking being seen as illegitimate.

Space

Geographic space is another classic dimension of differentiation with organizations carving out market positions through finding new regions in which to operate. The location of traditional public schools is centrally planned with decisions driven for the most part by residential populations and land costs. For private schools and charter schools on the other hand, school operators make decisions about where to locate. While they don't have the same geographically based admissions restrictions as traditional public schools, these schools have to locate themselves in areas where they can attract students, and can gain competitive advantage by locating in underserved areas. Charter and private schools also have the capacity to exist as non-local virtual schools with no brick-and-mortar facilities. This is a relatively new phenomenon for public school students which expanded significantly through charters. While slower to adopt virtual approaches to education, districts have used distance learning formats to support education for children with physical or mental health issues that prevent them from attending a traditional facility based public school.

Describing the key resource dependencies, how they differ across schools, looking at the extent to which these dependencies are internalized or externalized and the structure of the relationship network governing these dependencies forms the basis for a more nuanced understanding of schools as organizations than what's offered by the early neoinstitutionalist account. Identifying how schools vary along these dimensions allows us to differentiate schools with respect to environmental pressures including institutional and technical demands as well as their interaction, the extent to which competition is relevant, and the contours of the strategic landscape they face.

Types of Schools

As schools increasingly vary in their ability to differentiate themselves from one another along the key dimensions described above, we see the field as a whole becoming increasingly diverse. The table below shows a typology of school types based upon the resource and control dimensions outlined above. The two major divisions are public and private schools based upon the first criteria, funding. Schools receiving public money are considered public while schools that do not are considered private. Within these two groups however, there is significant heterogeneity with regards to the character of their relative resources dependencies in terms of labor relations, student admissions, and administrative control. This suggests that we should consider these differences carefully when trying to understand the relationships between these populations of schools. In the case of public schools, these dependencies also structure the forms of product differentiation each type of school can take. Below I take a closer look at each of these types, along with the avenues of niche differentiation, which might be used to mitigate competition and shape the interactions between organizations.

Private School Types

Private schools are often considered as a homogenous group; however, a look at these various dimensions of resource dependence and administrative control highlights the differences amongst private schools. While private schools are generally defined in opposition to public schools by the fact that they receive no public money, there are actually key differences, between private schools that are part of a private school system, between non-profit and for profit private schools and between religious and secular private schools. Looking at the dimensions of the typology above, control over output or product differentiation and control over their relations with a nonunion labor force emerge as the unifying dimensions amongst private schools while there are key differences with regard to their financing, administrative control structures and admissions policies.

The simplest division amongst private schools is between the admissions policies of religious schools and secular schools. Religious private schools usually consider the prospective student's religion as a factor in admissions, while secular schools do not. Otherwise both secular and non-sectarian private schools often consider students prior academic achievement, and charge tuition for admission. Important divisions also exit between for profit schools and non-profit schools. Non-profit schools have the advantage of being able to gain additional funding through soliciting tax deductible donations. The ability to provide this form of tax relief to families and businesses in the community gives these schools access to a key source of additional funding. Finally, there are differences between private schools that are part of a private school system and those that are freestanding in terms of the locus of their administrative control. Private schools that are part of a larger system (e.g. Catholic schools) are subject to budgetary, personnel and other controls from outside the school organization. While some evidence suggests that administrative elaboration in these systems is less than in public school systems, these schools are still subject to external control.

Public School Types

Within the basic dichotomy produced by considering publicly funded schools versus privately funded schools, public schools can be further divided into traditional public schools including at-risk and special education schools, schools that have been granted limited autonomies under school based management (SBM) programs, and public schools of choice including magnet and charter schools. We can see marked difference in each of the remaining dimensions within the broad category of public schools. Traditional public schools are controlled externally in terms of administration, are financed entirely through district funds, often employ unionized labor working under a district negotiated contract and have district established enrollment boundaries.

Table 2.1: Types of Public and Private Schools

	School Type	Administrative Control	Input Differentiation			Product Differentiation			
			Financing	Labor Relations	Admissions	Grade Offerings	Curriculum	Pedagogy	Space
Public Schools	Traditional Public Schools	External Public	Public - District	Unionized	Residential				
	At-Risk / Special Education	External Public	Public - District	Unionized	Performance / Needs		X	X	X
	School Based Management	Internal	Public - District	Unionized	Residential		X		
	Magnet Schools	External Public	Public - District	Unionized	Race/Ethnicity, Performance, Choice		X		X
	Afiliated Freestanding Conversion Charter	Internal	Public - District	Mixed	Mixed	X	X	X	
	Afiliated CMO Conversion Charter	External Private	Public - District	Mixed	Mixed	X	X	X	
	Afiliated Freestanding Start-Up Charter	Internal	Public - District	Mixed	Choice	X	X	X	X
	Afiliated CMO Start-Up Charter	External Private	Public - District	Mixed	Choice	X	X	X	X
	Independent Freestanding Conversion Charter	Internal	Public - State	Non Union	Mixed	X	X	X	
	Independent CMO Conversion Charter	External Private	Public - State	Mixed	Mixed	X	X	X	
	Independent Freestanding Start-Up Charter	Internal	Public - State	Non Union	Choice	X	X	X	X
	Independent CMO Start-Up Charter	External Private	Public - State	Mixed	Choice	X	X	X	X
Private Schools	PSS Religious For Profit	External Private	Private - Tuition	Non Union	Tuition, Religion, Performance	X	X	X	X
	PSS Religious Non Profit	External Private	Private - Tuition & Donations	Non Union	Tuition, Religion, Performance	X	X	X	X
	Independent Religious For Profit	Internal	Private - Tuition	Non Union	Tuition, Religion, Performance	X	X	X	X
	Independent Religious Non Profit	Internal	Private - Tuition & Donations	Non Union	Tuition, Religion, Performance	X	X	X	X
	PSS Secular For Profit	External Private	Private - Tuition	Non Union	Tuition, Performance	X	X	X	X
	PSS Secular Non Profit	External Private	Private - Tuition & Donations	Non Union	Tuition, Performance	X	X	X	X
	Independent Secular For Profit	Internal	Private - Tuition	Non Union	Tuition, Performance	X	X	X	X
	Independent Secular Non Profit	Internal	Private - Tuition & Donations	Non Union	Tuition, Performance	X	X	X	X

Each of the remaining non-charter public school types is still under the administrative purview of the district, other than schools that have been granted internal budgetary personnel and other freedoms under some variant of a school based management model (SBM). Along with their administrative SBM schools typically have the ability to differentiate their product in terms of curricular focus, but are just like traditional public schools in the other dimensions considered here. At-risk or special education schools are very different from traditional public schools in terms of key organizational aspects, particularly with regard to student enrollment, curricular and pedagogical approach and geographic locale. These schools take variegated teaching approaches, use specially designed curriculum and can offer instruction in regular school facilities, at student's homes, in hospitals, or online. Magnet schools also differ from traditional public schools in terms of the admission criteria for their student body. Historically, these schools were designed to promote integration, and thus sometimes use race and ethnicity as admissions criteria. With white flight changing the demographics of urban areas, magnet schools were usually located in centralized areas, and divorced from neighborhood attendance requirements. Magnet schools also have some control over their curriculum, and are frequently designed to pursue specialist strategies. These are typically subject oriented; although some are designed for high performing students who meet testing criteria.

Moving to charter schools we begin to see significant differences within the public school sector. We can see differences amongst charter schools in administrative control structures as well as each dimension of input and output differentiation. All charter schools have some type of non-public administrative control; although schools run by CMOs are frequently externally controlled by the management organization which may run many schools from offsite. Freestanding charter schools on the other hand are unitary in the sense that administrative control is inside of the school organization. These differences have important consequences for how schools operate, how they relate to other schools in their locale, and of course how they interact with the district.

There is also variation in the funding sources for charter schools. Those schools that I've termed affiliated charter schools have funding controlled by their local school district, just like traditional public schools, while the schools labeled independent get their public money directly from their State Educational Agency (SEA). Charter schools that remain affiliated with their local school districts lose the funding flexibility that comes with receiving funds directly from their SEA, but gain access to locally raised funds and have access to the categorical funds that flow from SEAs to local districts. Independent schools trade the increased funding that district affiliated schools often have access to in favor of funding autonomy allowing them to access their funds without categorical restrictions, and freeing them from the institutional demands that categorical funding and district involvement impose.

Like financing, differentiation along the labor dimension shows variation between schools that maintain their district affiliation and those that do not. In addition, schools that are managed by CMOs, regardless of their district affiliation generally do not employ unionized labor; although some CMOs (e.g. Green Dot) have encouraged the development of company-specific unionization. Freestanding schools that accept funding through their local district face

local negotiations for labor employment flexibility. In these cases, usually schools are granted limited autonomies in terms of hiring, but, if the district has a labor contract with a teacher's union, these schools are typically limited to union labor.

The difference between conversion charter schools and start-up charter schools is not frequently discussed, but is important. Start-up charters have the admission characteristics that are most frequently associated with charter schools, namely no residential requirements and the use of random lottery to assign seats in high demand schools. Conversion charter schools on the other hand retain their residential enrollment requirements, giving preference to students residing in the neighborhoods the pre-charter school had served. The intent of this requirement for conversion charters is to prevent students in these neighborhoods from losing access to their local school; however this raises interesting strategic possibilities. For instance, an existing public school in an affluent area may be able to convert to a charter gaining administrative autonomy and funding freedoms while retaining the ability to give enrollment preference to an advantaged student body.

All charter schools have much greater freedoms in terms of output differentiation than do their traditional public school counterparts. All have much greater autonomy in terms of determining their curricular foci, and their pedagogical approach. Similarly, all charters have some discretion with regard to their grade structures; although this differs markedly between conversions and start-ups. Conversions typically have the opportunity to add a limited number of grades to their structure, particularly if they've experienced declining enrollments. New start-ups on the other hand have much greater flexibility in terms of a grade structure. Finally, start-ups can choose where to locate while conversions are restricted to their current facility. These flexibilities, along with the various configurations of administrative control and differences in key inputs, are crucial to for understanding K-12 education as an organizational field.

Conclusion

Over the course of the last fifty years, public education in the United States has undergone far reaching changes. Accountability legislation has shifted centralized evaluative control from structural and process oriented means to output oriented means. Charter school legislation has created a new organizational sector in which instrumental decision making is decentralized, fragmented, and federalized, cultivating competition and injecting uncertainty into once secure resource streams. The cultivation of alternative routes of teacher recruitment and certification has weakened the settled arrangements between universities, unions, and districts. The specifics of these changes will be highlighted in the next chapter, but the upshot is that much of the institutional scaffolding surrounding public schools has been rearranged. In this chapter, I've argued that neoinstitutionalism is ill equipped to deal effectively with these changes primarily due to its weaknesses in dealing with the interaction of technical and institutional demands, variation in these demands within sector, the importance of

competition, and the role that organizational strategy and strategic interaction plays in formal differentiation by organizations within the same sector.

These changes have ushered in considerable heterogeneity in both institutional and technical demands, in the structure of the relationships between schools, their governing organizations, their key inputs and their ability to make strategic changes in structures or processes. Integrating insights from political neoinstitutionalism, resource dependence, and organizational ecology, I have tried to fill some of the holes in the early neoinstitutionalist approach to public education in light of these changes, and have outlined a basic typology cataloging the organizational heterogeneity in schools previously seen as subject to fairly uniform environmental (technical and institutional) demands. Heterogeneity in the administrative relationships between schools and outside organizations, in the sources and character of their key inputs, and in the ability of schools to differentiate themselves from one another are all important for understanding how schools respond to the interaction of these demands with one another and the expansion in the variation of the character and strength of these demands.

In a world of within-sector heterogeneity in the magnitude and character of environmental and technical demands, neoinstitutionalists would expect increasing variation in formal structures and processes. I suggest that this is in fact the case. The difficulty that neoinstitutionalism faces is an inability to detail how organizations strategically negotiate both technical and institutional demands, how these demands differ across local settings, and the direction these changes will take. A perspective incorporating theories with more attention to the mechanisms of competition (organizational ecology) and coercion (resource dependence) as they apply to the linking of technical demands to organizational survival, and to local organizational settings that have a crucial environmental effect on schools with the more spatially abstracted emphasis of neoinstitutional theory on organizational fields, regulatory structures and state expectations, lends analytical leverage on the forces shaping the organizational behavior of schools in this new institutional context. Combining these strains of theory moves us past simple neoinstitutionalism and suggests new lines of questioning.

Specifically, this perspective entertains the possibility that the effects of organizational fields on schools as organizations are shaped by local ecological characteristics and political dynamics and will be increasingly shaped by these forces as key resource flows (facilities, students, teachers, capital) become less structured by centralized institutional demands focused on structural and process oriented evaluative controls. For example, residential admissions requirements can be an advantage in some contexts and a disadvantage in others. For an existing school located in an affluent area, charter school conversion offers the opportunity to maintain an advantaged student body, while conversion of a school in a disadvantaged area offers little in terms of protecting a coveted resource niche. In this case, the strategic meaning of this particular organizational behavior differs depending upon the relative demographic characteristics of the local geographic space. This broader theoretical perspective suggests several areas of inquiry into the organizational dynamics of modern schools that could

reveal the variable influence of heterogeneous institutional and technical environments on schools.

First, when do schools attempt to differentiate their input streams and their products? The idea that administrative autonomy as a mechanism will improve achievement outcomes for kids relies on two possible processes: efficiency/effectiveness improvement and innovation. The first relies exclusively upon decentralization of administrative mechanisms to the school level and input differentiation in terms of student enrollment regulations, teacher hiring processes, and financing sources. The idea here is to move administrative control outside of the public sphere, reducing managerial costs and circumventing conflicting bureaucratic interests (Chubb and Moe 1990b). This allows for schools to choose input structures that best fit their goals. According to this logic, these schools should then be able to deliver the same product as their traditional public school counterparts, but with improved effectiveness. On the other hand, the idea that unshackling schools from public administrative control will spur innovation relies upon schools differentiating their product. Here schools find new ways to approach teaching, or specialized foci that better serve parent and student preferences and raise student achievement. In heterogeneous environments, do organizations with the capacity to diversify do so, or do they follow the lead of their generalist counterparts? Under what conditions does one of these directions give way to the other? Do organizations take cues from others in their environments, or do they take advantage of market opportunities to differentiate themselves and secure a market niche?

Second, what determines the specific directions that differentiation takes in heterogeneous institutional and technical environments? For example, for Meyer and colleagues the classificatory scheme imposed upon schools and districts by states regarding teachers grows out of a "theory of personnel" operating in the society at large. The loosening of structures driving uniform institutional demands raises questions about how schools make use of their new abilities to differentiate inputs and products, and where these strategies come from. For example, in what circumstances are curricular and pedagogical differentiation spurred by market demands, by niche seeking, by mimicry of existing differentiated schools, or by key extra-organizational advocates? Where do the menus of possible avenues of school differentiation come from?

Third, how do organizations use space to negotiate their environments? How do schools with the ability to move make location decisions decide where to open their school, and how does the interaction of schools, students and teachers across space relate to processes of stratification and inequality? While decisions on the locations for traditional public schools are driven by administrative decisions made within public school districts, charter and private school operators are able to locate themselves in specific neighborhoods in effect choosing their local environments. These schools may be subject to larger institutional demands, but they can negotiate the technical demands posed by securing student and teacher resource flows, and create a market niche through the choice of a particular location. Do school operators target areas served by poorly performing schools, or do they locate in areas with existing high status schools? What local environmental factors foster school founding, and how

does the distribution of schools across geographic space interact with the spatial distribution of stratifying social variables (e.g. race, class, income, etc.) across the local population?

Fourth, what do the life chances for various schools look like? How do they differ across organizational type and across different environments? How do variations in the institutional and technical environments condition the effects of one population of schools (e.g. charter schools) on another (e.g. private schools)? Combining neoinstitutionalism with resource dependence and organizational ecology suggests that the processes governing the competition between various organizational populations and between organizations within particular populations are conditioned by the institutional environments faced by these populations and their strategic positioning vis-à-vis both institutional and technical demands. This suggests that the rates of failure for various school populations, particularly those not supported by public school districts, will depend upon the governance structures mediating the competition within and between populations of schools, and that as institutional and technical demands fragment, the factors affecting the rates of organizational failure will increasingly vary in magnitude.

In this chapter I've argued that the approach of scholars to the organizational life of schools needs to change in light of the far reaching changes to the environments that schools face. Governance in the world of education has fragmented as instrumental and funding decisions have decentralized even as evaluative control has centralized and shifted from structural and process controls to outcome controls. Access of organizations to key resources including students, teachers, facilities, and funding has moved from administrative control to increasingly market-like controls. As the specific environmental demands that schools face become more heterogeneous I suggest that the effects of mechanisms which, in a more uniform institutional and technical environment, result in a particular organizational behavior, when operating in the context of heterogeneous environments result in divergent organizational behavior. The next chapter explores the history of the larger institutional changes discussed in this chapter.

Chapter 4 - Institutional Change and Environmental Heterogeneity in American Public Education

Introduction

Neoinstitutionalists have provided us with a compelling way to understand the resistance of institutionalized organizations and organizational fields to change (J. W. Meyer and Rowan 1977; W. Richard Scott and J. W. Meyer 1991). Categorical schemas deeply ingrained in our governance structures, social relations, and perception of the world provide consistent bases of legitimacy, offering familiar forms available for replication and reinvention that result in consistently similar approaches to organization across time and space. As these forms become taken-for-granted they continue to spread. Furthermore, once elaborated these organizations are capable of undertaking consistent and recurrent reform while keeping their core organizational structures and processes in tact though ceremonial adherence and ritual observance of the new requirements. By separating formal structure from technical processes organizations are able to elaborate their structures toward congruence with any particular reform while protecting their key processes from real change. This story has been leveraged for some time to explain how public education has remained the same despite consistent attempts at reforms of various kinds.

I argue that the changes that have swept across public education over the last fifty years have in fact reshaped the organizational field in powerful ways that the neoinstitutionalist approach cannot explain. Relationships of authority including those between federal and state governments, between states and districts, and between districts and schools, administrative structures governing districts, schools and teachers, the institutions pushing students, teachers and capital into schools, and the forms and content of the actual education being delivered to students have all diversified. From a strict neoinstitutionalist perspective, we'd expect these reforms to change little with schools and districts elaborating form and structure but maintaining their practices. This expectation conflicts with the deep changes that have reshaped the field.

More recent work on institutional change has emphasized the role of crisis in institutional change. This line of thought suggests that new ideas and changes in nearby fields can create institutional pressure and precipitate crises in which the foundational concepts organizing relationships between actors in a field are at stake (Blyth 2002, 2008; Fligstein and McAdam 2012; C. Fuller 2010). Crisis has the power to change institutionalized organizational fields through reshaping the orientation of action in the field via changes in goals, roles, and rationales. When the definition of what is at stake, how winners and losers are measured, and/or the basic rules governing action and interaction in a field are called into question, we have to look to dynamics in nearby fields, the interactions between fields, as well as he influence of outside political and social action in order to understand how and why fields change.

This chapter details how the stable organizational field of public education was transformed through a series of repeating crises (Blyth 2002, 2008) oriented around three central concepts: equity, effectiveness, and autonomy. The notion of a systemic crisis in American education has become a powerful, compelling and virtually continuous narrative (Cizek and Ramaswamy 1999; President's Commission on Foreign Language and International Studies 1979). Educational crises have been diagnosed at an increasing rate, and have involved virtually every aspect of schooling; from the quality of school lunches (Morris and Bellinger 1991) to the tyranny of testing (Ravitch 2010). Some of these "crises" have been more compelling and politically explosive than others. These core crises have structured public perception of the primary problems facing American public schools, and over the course of the last fifty years have molded the deep institutional changes that have reshaped the topography of American public education. At the level of the school, the repeated redefinition of crisis first framed around equity, then accountability and finally autonomy was accompanied by institutional reforms which took a settled organizational arena built upon the certainty of structural conformity and evenly distributed institutional demands, and reshaped the landscape of these demands increasing the variability not only of their character but also the of their magnitude.

Desegregation in public schooling was the result of a crisis precipitated by a judicial decision that changed the widely understood purpose of education and in the process shifted relationships of power and the distribution of decision making and funding across levels of governance. The perceived failure of American public schools drove another crisis in the 1980's turning focus in the field from equity to achievement resulting in political maneuvering and legal changes at both the national and state levels that shifted the action orientation, measures and bases of legitimacy claims in the field from equity and structural conformity to educational outcome measures like test scores and graduation rates. At the same time, a parallel narrative had focused on another interpretation of the core crisis of public education suggesting that schools needed autonomy from overbearing and ponderous district and union bureaucracies. While advocates motivated by this frame agreed with the effectiveness critique on how to measure success in the field of education, they focused on decentralization and the introduction of market-like mechanisms as the solution to changing the types of action and organizational incentives in the field.

These crises have changed the political calculus for governance organizations, mobilized social actors from outside of the field, and created new types of organizations, new institutional pathways regulating resource flows, and new mechanisms regulating action and interaction in the field. The current narrative portraying teacher unions as the primary barrier to effective education, the celebration of charter schools, and the expansion of standardized testing are all pieces of a broader constellation of concepts and attendant institutional structures that scaffold the new, variegated environment faced by public schools. In this chapter I present a political and institutional history of these changes detailing how each was molded by reference to a particular crisis. I then expand upon how these changes have altered the organizational environments faced by public schools. I begin by focusing on equity discussing how judicial

decisions drove desegregation as well as broader changes in the relationships between local, state and federal actors with regard to education, as well as organizational innovation. I then move to the effectiveness crisis describing how a series of reports on educational outcomes motivated political shifts and legal action that changed the goals of action in the field. Finally, I describe the autonomy critique that sparked the development of new organizational sectors in public education, as well as new structures governing the flow of key resources into schools. After covering each of these three core crises, I then take stock of the changes they drove and discuss how each has altered the field from the perspective of districts and schools.

Equality

Although it's possible to trace the intellectual history of current reform efforts back even further, the events surrounding the desegregation of public schools were so powerful that they mark a clear watershed in the timeline of education reform, and the most recent point at which any historically situated discussion of modern efforts could realistically begin. Desegregation efforts shifted the settled relationships of power in American education, had far reaching legal ramifications, and set the long term agenda shaping how reformers understand the primary problems with public education. In order to situate the reforms reshaping public education, particularly the market-based reforms, we first need to return to the fight over racial equality in public schools.

Equality in schools has been a centerpiece of public concern, intellectual thought and academic research at least since the U.S. Supreme Court ruling on *Brown v. Board of Education* (1954). The essence of the ruling was that forced segregation, segregation carrying legal sanction, itself creates inherent inequalities in terms of educational opportunity, and therefore no law supporting such an arrangement could be considered constitutional, as it would violate the guarantee of equal protection. In the end, this decision had profound consequences for public education in the United States in at least four ways: 1) the establishment of equality as a persistent goal in educational outcomes, 2) the involvement of the judiciary in public schooling issues beyond freedom of speech 3) the increase in the role of the Federal government in local education and 4) the creation of a new type of school encouraged by the Federal government, as a solution to the ongoing problems that local actors had encouraging equity in public schools.

Despite the clear importance of the ruling from today's perspective, at the time it was unclear if the court's decision would have any meaningful impact at all. In the ruling's wake, most Southern communities simply ignored the decision. If they did respond, they were most likely to do so through introduction of a "freedom of choice" policy, allowing parents to enroll their kids in the public school of their choice. The practical result of these policies was to maintain segregation in public schools (Cataldo, Giles, and Gatlin 1978). The ruling also kicked off well documented "white flight" from public schools to private academies, many of which received public funds (Cascio et al. 2010; Clotfelter 2004). By the end of the 1950's, less than 10% of all Southern school districts exhibited any desegregation at all (Cascio et al. 2008).

This continued until the passage of the Civil Rights (CRA) and Elementary and Secondary Education (ESEA) Acts in 1965. These pieces of legislation gave the Federal government much more power to force desegregation through the withholding of funds. The levers that both the CRA and the ESEA provided were particularly effective at increasing desegregation efforts in the poorest school districts which were most dependent upon Federal assistance (Cascio et al. 2008, 2010; Henig 1994). While there had been significant decreases in some measures of segregation in the three years following the passage of the CRA and the ESEA, many school districts remained segregated, in both the South and the North. Most district judges had interpreted the Supreme Court ruling in Brown as a directive prohibiting segregation, but not as a mandate to forcefully integrate. Many Southern districts approached this by creating "freedom of choice" plans. These plans amounted to what are now termed open enrollment plans in which any student in a given district may apply for enrollment at any other school in their district regardless of residence, the student's race, or the racial composition of the school to which they are applying. Supporters argued that these plans allowed the possibility for students attending a black school to attend white schools, and visa-versa, simply putting the choice to the family. However, even after these plans were put into place, segregation could be maintained through complicated application procedures, requiring open seats, and other district and school level administrative tactics.

The interpretation of *Brown* avoiding forced integration meant that "freedom of choice" plans could maintain segregation while formally permitting integration. These plans came under scrutiny in *Green v. County School Board of New Kent County* (1968). In this case, the Supreme Court was asked to rule on the constitutionality of a "freedom of choice" plan which had effectively maintained complete segregation in an Eastern Virginia county. The ruling held that such plans were inadequate responses to the directives set forth in Brown. Following Green, desegregation picked up pace in the Southern schools, and began in earnest in Northern schools where residential segregation had obviated the need for de jure public school segregation (Clotfelter 2004). This process gained even more momentum following another Supreme Court ruling a few years later.

By 1970, much of the desegregation in Southern school districts had already taken place. The primary exceptions were larger Southern school districts where desegregation had taken place at a slower pace. At this point, even these districts began to actively desegregate through busing programs. However, public school segregation was still a fact of life in the North due to strong residential segregation patterns. In 1971, another key Supreme Court case was decided that brought desegregation programs to Northern cities. In *Swann v. Charlotte-Mecklenburg Board of Education* (1971) , the Supreme Court found that busing was an appropriate remedy to segregation. The major impact of busing programs would be felt in the Northern cities where de jure segregation had ended, but de facto segregation, based upon residence, remained. Bussing programs began in Northern and Western cities including Columbus, Cleveland, Detroit, Minneapolis, Kansas City, San Francisco, Pasadena, Los Angeles, Las Vegas, Wilmington, and most famously in Boston.

In 1974, an important limit was placed upon busing to achieve racial integration. The Supreme Court in *Milliken v. Bradley* (1974) held that busing plans aimed at desegregation across multiple districts could not transport children across district lines unless de jure segregation existed in each of the districts involved. The practical impact of this ruling was the protection of white flight as a means of avoiding integration where district lines coincided with the urban-suburban border (Clotfelter 2004). In large segregated districts, mostly outside of the South, court-ordered busing plans continued to spread. As more and more students fell under the purview of mandatory bussing public opposition became a significant obstacle, and districts began to experiment with new, voluntary, choice based integration tactics: choice programs and magnet schools.

As mandatory bussing programs spread, and political support for them waned, districts searched for ways to voluntarily integrate schools. Paradoxically, some districts experimented with open enrollment, majority to minority, and inter-district transfer programs similar to the "freedom of choice" plans that had been used to maintain segregation in Southern districts (Clotfelter 2004; Wells and Crain 2005). For districts committed to desegregation implementing programs designed to allow students in residentially segregated neighborhoods to go outside of their attendance boundaries to attend schools of their choosing was a straightforward way to promote integration. In areas where district boundaries coincide with urban-suburban divides some districts were able to set up inter-district transfer programs sending minority students out to majority white suburban schools. The creation of these programs focused on loosening administrative control over student enrollment. At the same time, some districts experimented with a new school type that incorporated the input shift of the voluntary choice programs that created limited abilities for students to attend schools outside of their residential catchment area, and allowed for some product differentiation in the form of curricular or pedagogical specialization.

A new public school model was being tested in some districts with a large degree of success not only at spurring parental interest, but also at achieving voluntary integration: the magnet school (Henig 1994). The essential idea of a magnet school is to construct a curriculum focused on a specific subject in order to draw students with similar interests together. Enrollment in magnet schools or magnet school programs is not restricted by catchment area; although usually magnets have admission criteria including racial quotas. Usually, these schools are located in poor urban districts, or poor and minority areas within other school districts (Frankenberg, Siegel-Hawley, and Orfield 2008), and seek to attract white children to these new schools in predominantly minority areas by shifting admissions administration from residential criteria to racial criteria with the goal of integration, and by allowing for specialized curricula.

Magnet schools have been used to pursue integration without spurring white flight by drawing white students to schools in minority dominated neighborhoods. This combination provided an outlet for parental choice while striving for an integrated, racially balanced student body. Often these schools receive extra resources making them particularly attractive. The 1976 reauthorization of the ESEA added targeted funds for magnet schools via Title V. Districts could often receive Federal funding for opening magnet schools, and in most cases these schools

were well received by the public. Often, by combining innovative teaching and focused curricula with racial quotas, these schools could play a key part in court ordered desegregation plans (Frankenberg et al. 2008). As more districts entered court supervised desegregation, magnet schools became a fundamental piece of most court ordered plans.

Since their expansion during the 1970's and 80's (Henig 1994) magnet schools have become the most deeply institutionalized form of public school choice, particularly in large urban American school districts. Arguably, magnet schools represented the culmination of desegregation efforts in American public education, and also provided a real option in terms of school choice, a concept which was closely associated with segregation and white flight only a decade before. However, integration was not the only benefit of magnet schools. Because of their specific focus, (e.g. math, science, performing arts, etc.) educators also saw them as ways to inspire kids to learn. This mission driven focus on a particular curriculum and the elimination of residentially based attendance marks the beginning of a form of public education departing significantly from the common school model. The common school focused on a particular set of subjects including reading, writing, math, history, and geography and attempted to give students a broad foundation in each with goal of creating a well-rounded and liberally education populace. These schools were founded to serve highly local populations of children pre-dating unified school districts and regulated attendance by residence. The broad curricular model and residentially based service continues to guide traditional public schools today. Magnet schools mark a significant break from this model leveraging output differentiation to attract a diverse student body maintained through administratively regulated inflow of students based upon non-residential criteria.

By the end of the 1970's desegregation efforts had reshaped the face of American public education centralizing important funding decisions at the Federal level and pressuring local districts into adopting formal structural and process controls in order to achieve a new programmatic goal: integration. The Federal government accomplished the centralization of programmatic and instrumental decision making by leveraging funding decision making powers that were authorized under the landmark passage of ESEA. Local Southern school districts attempted to resist the instrumental authority of the Federal government, Supreme Court, as well as state and local courts by loosening de jure administrative control over the flows of a key resource for schools, namely students, through "freedom of choice" plans. When the constitutionality of these plans was challenged, districts began to move towards forced bussing to integrate schools. As families fled urban districts and protested forced bussing plans, districts looking for ways to spur voluntary integration turned to the same governance approaches that Southern districts had used to avoid forcibly integrating their schools: loosening administrative control over student flows. Along with open enrollment style programs liberalizing student flows, districts created a new class of school that also differentiated output, specializing in particular curricular or teaching approaches: the magnet school. While equality in public education remains an important public issue, the core of public discussion about schools began to change in the late 1970's and early 1980's, shifting from equality in public schools, to a growing concern with what was perceived as the overall ineffectiveness of public schools.

Effectiveness: Standards and Accountability

In 1977, The College Board issued a report investigating the 14 year decline in SAT scores amongst American high school graduates (College Entrance Examination Board 1977). Reports on declines in American student's proficiency in foreign language (President's Commission on Foreign Language and International Studies 1979) and science and engineering (National Science Foundation and U.S. Department of Education 1979) soon followed. Increasingly, discourse shifted from concerns of equity to concerns of effectiveness. Report after report detailed how American proficiency was declining in a wide variety of areas. This shift culminated with the publication of *A Nation At Risk: The Imperative for Educational Reform* (ANAR) (National Commission on Excellence in Education 1983b).

ANAR, in a highly publicized, blunt analysis presented the failings of the American school system with a battery of facts and figures detailing the poor performance of American schools: American students fared poorly in international comparisons, large portions of American adults and American teenagers were functionally illiterate, mean achievement of high school students was lower than at the beginning of the 1960's, and remedial courses at four year colleges were expanding. The report caused a stir in the media, in the public, and amongst politicians at every level. The major thrust of ANAR was that our public schools were failing because of low standards, lax graduation requirements, low expectations for teacher qualifications, and a lack of focused curricula. In response, more commissions were formed, more investigations were conducted and the "excellence" movement was born (Boyd and Charles T. Kerchner 1987; Toch 1991).

One such report, put together by a group of 200 business and education leaders and released just two years after the release of ANAR, entitled Investing in Our Children: Business and the Public Schools (IOC) (Committee for Economic Development 1985) was significant in two respects: 1) it explicitly linked the decline in American economic competitiveness to a decline in the quality of American education and the performance of American students, specifically relative to Japan, our primary international competitor at the time in the production of automobiles and consumer electronics, and 2) it foreshadowed the looming political conflict over national curricular and testing standards by explicitly recommending state standards and not national ones. Not since the National Defense Education Act of 1958 (NDEA) which was signed into law after the Soviet Union launched Sputnik (Guthrie and Koppich 1987) had education been explicitly linked to the position of the United States on the international stage. While the NDEA was inspired by Cold War concerns of military-technological inferiority, the concern set forth in IOC was explicitly about American position in the global economy. The idea that American economic competitiveness on the global stage was crucially dependent upon the reform of public education is a note that would be hit often throughout the next decade. Ten years prior, the core of the debate about public education reform in the United States had framed schools as places where students were given or denied the opportunity to pursue individual greatness, but with the shift from concerns of equity to concerns of effectiveness, schools were increasingly reframed as national training grounds for labor, and American

student performance relative to the performance of students in other countries became an oft cited political talking point.

In the wake of ANAR and subsequently of IOC, education reform became a heated political topic, and the response was both swift and widespread. Fixing public schools became a political staple in state capitals with politicians eagerly pushing standards based reform agendas drawn from the recommendations of ANAR. While ANAR had been commissioned by the Federal government, the onus was on the states to implement reform. The Federal government had further strengthened the role of state governments in education with the passage in 1981 of the Educational Consolidation and Improvement Act (ECIA). This legislation attempted to reduce bureaucracy in the administration of funding issued through ESEA by giving block grants to state governments for dispersal rather than through the Federal government working directly with individual schools or school districts. The result was more state control of Federal funding for local schools and governing bodies, and a mounting concentration of control over local school districts in state capitols.

ECIA set the stage, and the public outcry following these dismal reports tipped off a flurry of activity in state governments. By one estimate, over the next few years at least 3,000 separate school reform measures were passed including measures in virtually every state (Toch 1991). This wave of education reform legislation was accompanied by sharp increases in spending funded through sales and income tax increases as well as local taxes. Between 1982 and 1987 spending on elementary and secondary public education increased 25% after inflation with half of that coming from the states and another 44% coming from local sources (Toch 1991); although this increase in per-pupil outlays kept education spending stable as a proportion of GNP (Guthrie and Koppich 1987). Many states passed legislation increasing high school graduation requirements, mandating tougher standards including homework requirements, lengthening the school day and year, creating and expanding standardized testing programs, linking test scores to grade promotion, expanding early education, raising teacher salaries and Education-school admission requirements, and ratcheting up teacher credentialing and curricular standards (Toch 1991).

These state level reforms increased the power that governors, state legislatures and state education departments exerted over schools and school districts. The increasing state-level activity on education issues, from state governments continuing to enact education reform, and state level politicians, particularly governors, campaigning on education issues, culminated with the focus of the National Governors Association (NGA) on education issues. In 1986 they released *Time for Results: The Governors' 1991 Report on Education* (TFR) (National Governors' Association 1986). The intention of this report was to detail what states should do over the five years from 1986 to 1991 in order to improve public education. The primary recommendations of this report followed in the footsteps of ANAR and included: increasing teacher professionalism, strengthening school leadership, promoting parent involvement, helping at-risk children, using technology more effectively, better use of resources, and strengthening colleges and universities. In order to emphasize the importance that state leaders were placing on education, the NGA committed to issue a report tracking state progress

on each of these goals every year through the 1991 target. In the following year the NGA issued another education focused report, this time echoing IOC, entitled *Jobs, Growth and Competitiveness* (National Governors' Association 1987).

By and large, state power over local school districts continued to grow in the latter half of the 1980's, and although it is clear that state policy activity opened political opportunities for actors at the local level (Fuhrman and R. F. Elmore 1990), the broad policy changes pushed through at the state level redefined the role of state governments in education (Toch 1991). The Federal government had backed away from the increased control that it had asserted over the course of the 1970's in the name of desegregation, and local school districts became increasingly beholden to leaders in their state capitals. This configuration of power continued though the end of the century. Local school districts were left attempting to satisfy politicians in state capitals who, over the course of the next decade, became increasingly active in legislating decisions that were previously made at the district level, including in particular mandating teacher qualifications and instituting statewide testing regimes with published results at the school level. On the funding side as well, local authorities found themselves increasingly at the mercy of state actors.

After the property tax revolts of the late 1970s and early 1980s and the accompanying assessment caps, local school districts found their ability to raise funds severely circumscribed, forcing them to rely increasingly upon bond markets and state policymakers and bureaucrats controlling state tax revenues. Furthermore, the direct involvement of the Federal government during the era of desegregation had given way to a new constellation of Federal-State-Local government relationships with regard to education. Since the pullback in the early 1980's, epitomized by ECIA, the Federal government began to cultivate a position it would take for the remainder of the century. While being unable or unwilling (depending upon the administration) to disentangle itself from the affairs of local education authorities due to the importance of ESEA funding for public education, Federal actors contented themselves by using state governments as intermediaries, reducing their direct role as compared to the era of desegregation, but maintaining involvement in terms of funneling funds to state governments. From this point on, local districts often had to go to the state for disbursement of the Federal funds for which they were eligible. Aside from the decentralization in funding decisions from Federal to the State governments, states pursued the consolidation of evaluative control over process through standards and curriculum and over output through testing and accountability.

Curriculum Standards

The fact that the negotiation over where education reform would be shaped was increasingly taking place between Federal and State leaders with local district and school leaders on the outside looking in was exemplified by the Charlottesville Education Summit. In 1989 President George H. W. Bush and the NGA convened a summit at the University of Virginia in Charlottesville with the goal of producing an agreement on how to improve the nation's schools. At the summit, the President and the NGA agreed to establish a process for setting national education goals, to seek greater flexibility and enhanced accountability in the use of

Federal resources, undertake a major state-by-state effort to restructure our education system, and to report annually on progress in achieving agreed upon national goals (Vinovskis 1999). Six national goals were agreed upon[2] and announced by President Bush (Bush 1990), a new body, the National Education Goals Panel (NEGP), was created jointly by the President and the NGA to monitor progress towards these goals, and a year later in 1991 the Bush Administration's approach to achieving these goals was set forth by Secretary of Education Lamar Alexander in the AMERICA 2000 program(Ravitch 1995). AMERICA 2000 encouraged local communities to set up panels in order to find local approaches to meeting national goals, established a privately funded entity called the New American Schools Development Corporation (NASDC) in order to manage a competition for designing a new type of school, and set out to develop standards in crucial subject areas along with voluntary national tests.

The development of these standards would prove to be a key debate in education policy over the course of the 1990's. Shortly after announcing AMERICA 2000, the National Council on Education Standards and Testing (NCEST) was established with the goals of determining the usefulness and viability of setting up voluntary national standards, and of detailing a process for how such standards might be implemented. NCEST's conclusions were released in a 1992 report, *Raising Standards for American Education* (RSAE) (National Council on Education Standards and Testing 1992). In RSAE, NCEST called for national standards to be ratified by a new council, adopted voluntarily by states, and proposed each state develop its own assessments. The recommendations set forth in RSAE were put on the political backburner after Congressional opposition stymied efforts at their implementation, and they continued to remain in limbo until two years into the Clinton Administration.

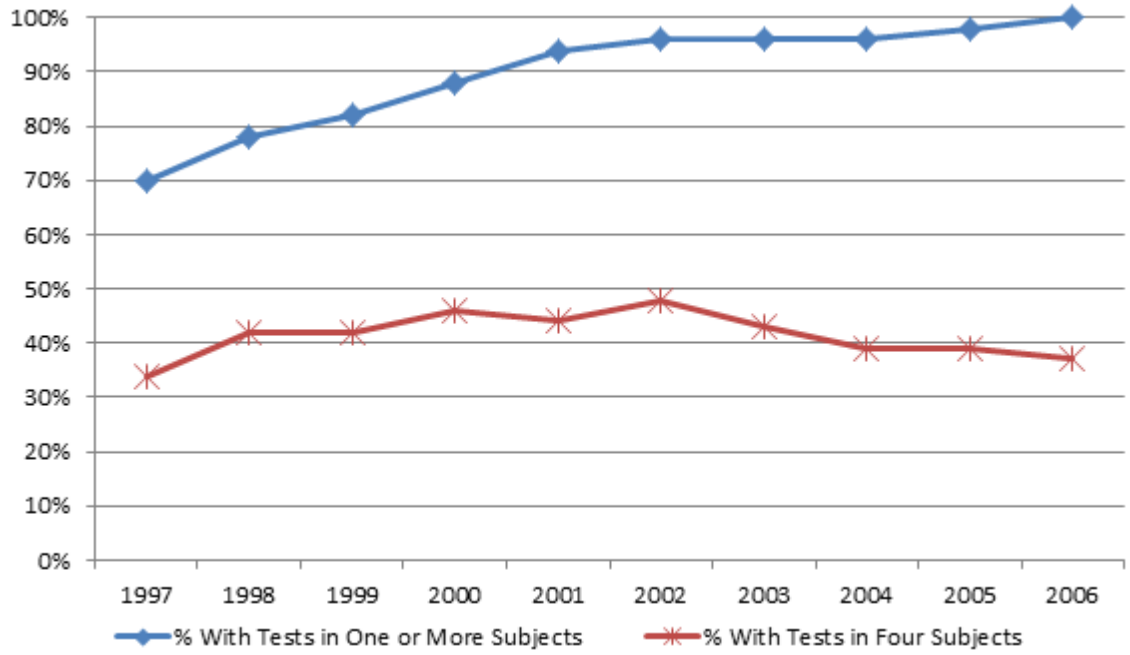
In 1994, the ideas developed in RSAE were formalized in the Goals 2000: Educate America Act (G2K) and signed into law. This legislation formally authorized the NEGP, codified the goals set out at the Charlottesville summit[3], set up a system providing states with Federal resources to develop their own academic standards, and created a monitoring body, The National Education Standards and Improvement Council (NESIC), to assess both national standards and the standards and assessments developed by the states. The idea was that the NESIC would review the development of national standards, and then assess the standards and assessment processes set up by the states in relation to the national standards. The decisions of the NESIC would in turn be reviewed by the NEGP which had the potential to overturn them. Federal support for standards based reform at the state level was also included 1994 reauthorization of the ESEA, the Improving America's Schools Act, which tied Federal funding through Title I to state standards and assessments, as well as provided funds for teacher development, school safety programs, and charter school development (Ravitch 1995).

[2] The six national goals were: 1) All children will start school ready to learn, 2) high school graduation rates will be at least 90%, 3) Student performance in critical subject will be assessed in grades 4, 8 and 12, 4) U.S. students will be first in the world in math and science, 5) Every American adult will be skilled and literate, and 6) Every school will be safe, disciplined and drug-free.

[3] It added two goals to the six goals outlined previously: 1) Teachers will have access to programs for improving their skills, and 2) Schools will promote partnerships to get parents involved.

Later that year, the supporters of national standards were dealt two critical blows: the shift of Congressional power from Democrats to Republicans and the increasingly acerbic politicization of the efforts by professionals to develop national standards. First, the Republican electoral success foreshadowed disaster for the NESIC, the only part of G2K concerned with national standards development (Ravitch 1995). Although political discussions of standards based reform, particularly of the development of national standards were active at the Federal level, the byzantine administrative structure outlined in G2K continued to dance around the process of developing national standards. The very idea of national standards, voluntary or otherwise, raised sticky political issues surrounding the role of the Federal government in education. The suspicion with which conservatives viewed the development of national standards put the NESIC on the chopping block where it lingered until 1996 when it was killed before the Council could be formed.

Figure 3.1: Percent of States with Assessments Linked to State Standards



Second, the idea of voluntary national standards hit a roadblock in 1994, when Lynne Cheney, in a highly publicized opinion piece in the *Wall Street Journal* criticized the national history standards that were being developed by a group of professors at the University of California Los Angeles with funding from the Department of Education and the National Endowment for the Humanities which Cheney was chairing at the time (Cheney 1994). Her critique set off a flurry of media attention and intense criticism. The end result of this media blitz was that the development of, even voluntary, national standards became politically toxic, and all involved distanced themselves from the history standards in particular and the idea of national standards in general for the time being (Ravitch 2010). The next time President Clinton would mention the idea of states adopting national standards would be the 1997 State of the

Union speech (Clinton 1997), and by then the political landscape upon which any attempt at national standards might be built had become bleak.

The lack of development of national curricular standards didn't stop states from developing their own standards with Federal support. Figure 3.1[4] shows the percent of states using tests in at least one subject linked to standards developed by the state from 1997 to 2006. By the beginning to the time series, 70% of states had already adopted tests linked to standards in at least one subject area, and this number increased steadily through the end of the decade. About 35% of states were fielding tests linked to standards in four or more subjects in 1997, and this number increased to almost 50% by 2002 before the implementation of No Child Left Behind which I'll discuss in the next section below. On the eve of its passage, 44% of states had statewide standardized testing linked to curricular standards for English, mathematics, science, and history in place while another 50% had standardized tests linked to standards in at least one of these subject areas. Interestingly, we see the percent of states using tests linked to standards in at least four subjects decrease after NCLB, perhaps because the federal law focuses on two key subjects, math and English language proficiency.

Accountability

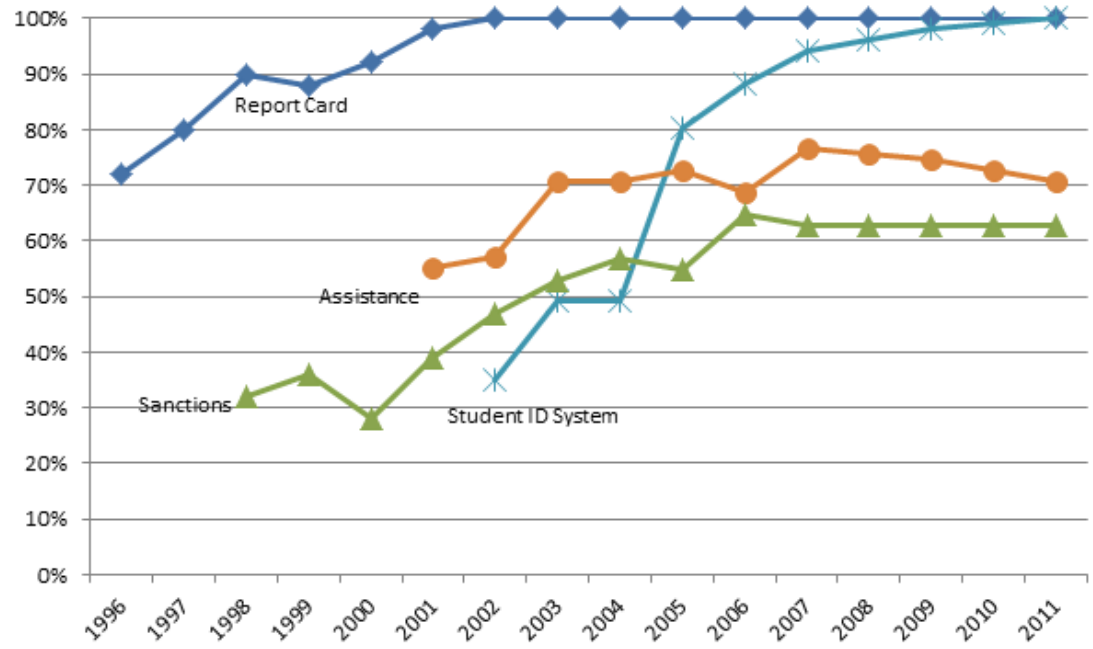
As states passed standards reform, they began to institute accountability reforms focused on schools. According to one estimate forty three states had adopted accountability-based reforms by 1993 (Bruce Fuller 2008), and this trend continued over the course of the 1990's. The implementation of these accountability systems was a significant departure from the principal of local control. States began to hold schools accountable through implementing statewide testing regimes, linking developed standards to these tests, disseminating public reports on school performance, ranking schools, and tying school performance to rewards, assistance, and sanctions.

Figure 3.2[5] shows the percent of states adopting various accountability policies from the mid 1990's through the first decade of the twenty first century. By the mid 1990's over 70% of states had a report card system in place publishing statistics about individual school performance for public consumption. States also continued to institute sanctions for under performing schools. The number of states with legislation instituting sanctions on these schools increased from around 30% in 2000 to over 60% at the end of the decade. Along with sanctions, states passed legislation granting assistance for failing schools. By the time our data series begins in 2001, 55% of states had already adopted assistance programs, and by the end of the decade this had increased to 70%. In order to track student performance many states began to leverage advances in computing data storage and communication systems to set up state wide unique student identifiers tracking student enrollment and achievement. Just after the approval of NCLB, over 30% of states had already set up a student tracking system and over the course of the next 5 years, another 60% of states put these systems in place.

[4] Data collected from Education Week's yearly "Quality Counts" issue from 1997 through 2007.
[5] Data collected from Education Week's yearly "Quality Counts" issue from 1997 through 2012.

The spread of state accountability systems were mirrored at the Federal level with the passage of No Child Left Behind (NCLB) in 2001. Over the two decades prior to the passage of NCLB, the balance of power over public education had settled with the states exerting power over localities, and the federal government funneling funds to localities through state capitals and providing the states with funds to accomplish federally desired goals according to their own designs. NCLB marked a major shift, giving the Federal government a degree of power over local education not seen since the desegregation efforts of the late 1960's and 1970's, this time with the goal of enforcing accountability for results at the school level. The heart of NCLB is the attempt, by the Federal government, to force states into a more uniform accountability system that includes accountability for subgroups with a focus on equity, a specified menu of sanctions, and a timeline for progress. The systems that states set over the course of the 1990's varied considerably in their breadth, content, rigor, and reporting. NCLB specified the need for assessments developed by the states to be placed on top of a framework for progress outlined in the law, as well as a set of cascading penalties detailed by NCLB that states must impose on schools for failing to meet these assessments or for not progressing as planned.

Figure 3.2: % of States Employing Accountability Policies



Like the federal efforts at education reform that came before, NCLB does little in the way of setting up concrete content requirements instead providing an outline for the states to fill in. Though the law is viewed by many as an unprecedented intrusion of the Federal government into the realm of the states and local education authorities, it's clear from the schizophrenic character of the bill that even here the Federal government was trying to walk the line laid out in the aftermath of school desegregation and during the early years of the Reagan Administration. In terms of standards and assessments, NCLB simply requires that the states have academic standards and develop tests accordingly. In addition to requiring states to

have content and achievement standards, NCLB also specifies that states define three levels of achievement including basic, proficient and advanced, link their assessments to these levels, and lay out a plan for all students to reach "proficiency" by the 2013-14 school year. In another nod to the reluctance that the Federal government has to involve itself too intimately with what is deemed the purview of the states and local authorities NCLB allows each state to define proficiency according to its own standards. This of course has led some states to lower their standards in order to boost the number of students achieving at a specific proficiency level (Ravitch 2010; U.S. Department of Education 2009).

The year over year gains required to reach the 2013-2014 proficiency goal, as laid out by each state's plan, is termed adequate yearly progress (AYP), and must be calculated separately for each subgroup identified by the law, including racial and ethnic groups, low-income students, the disabled, and those with limited English proficiency. All public schools are required by NCLB to be assessed in terms of AYP; however only those taking Title I funds from the federal government are subject to the penalties associated with not making AYP. If a school fails to make AYP for two consecutive years, the school is placed in program improvement (PI), and is subject to NCLB's sanctions.

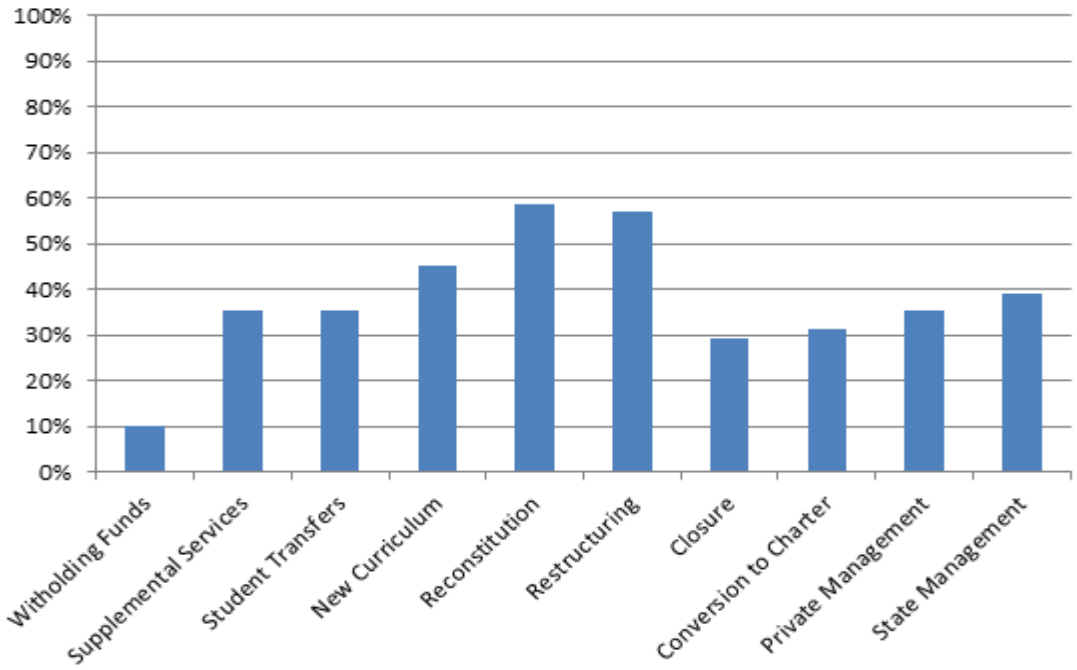
Once in PI the school is required to inform parents of this, and to allow parents of students in PI schools the opportunity to transfer their children to another traditional public school in the district or a nearby charter school not in PI, a process known as Public School Choice. If a school fails to make AYP for three consecutive years, the school district has to use its Title I funds to make supplemental education services (tutoring) available to that school's low income students. Failing to make AYP for a fourth consecutive year means that the school district must develop a corrective action plan for the school involving at least one of these steps: implementation of a new standards based curriculum along with professional development, replacement of some school employees, appointment of outside experts to run the school, extension of the school day/year, decrease in the management authority at the school, or the restructuring of the school organization. Missing AYP for a fifth consecutive year means the school district is forced to design a restructuring plan which must include: conversion to a charter, replacing all or most of the school staff including the principal, contracting with a private entity to operate the school, arranging for a state takeover of the school, restructuring the school governance under state direction, or undertaking any other major restructuring. The penalties laid out in NCLB are cascading in the sense that each penalty is additive; the penalty for missing AYP for two consecutive years remains active if the school fails to make AYP for a third year (Hess and Petrilli 2006).

While NCLB mandates a menu of possible sanctions for each additional year in PI, each state decides on which sanctions to put in place. Figure 3.3[6] shows what percentage of states had passed statues allowing for the use of selected sanctions in 2006. The most commonly specified sanction across states is reconstitution (58%), or the firing and replacement of a school's teachers and staff. It's worth noting that by 2006 about 45% of states had sanctions

[6] Data collected from Education Week's 2007 "Quality Counts" issue.

forcing the creation of a new curriculum in place, close to 30% of states allowed for the closure of underperforming schools, and just over 30% allowed for conversion to charter or for handoff to private management (more on these in the following section). The second most commonly specified sanction includes general restructuring (56%) which is loosely defined as any governance change designed to produce major reform, and typically involves a reorganization of the school's relationship with the district as well as change in administration.

Figure 3.3: % of States Using Selected Sanctions (2006)



The enactment of national accountability legislation that mandated a menu of penalties for schools was a landmark in American public education reform. By the close of the 1990's and end of the Clinton Administration, a new constellation of education reform had solidified. G2K and the ESEA reauthorization formalized further concentration of control over education reform at the state level with the Federal role confined to directional suggestions and the provision of resources. Since the publishing of ANAR, and two years later of IOC, the policy debates over education had been obsessed with poor student performance and the ineffectiveness of American schools as measured by declining test scores, graduation rates and lax educational standards. The role of public education was recast, from a democratic institution charged with assuring equality of educational opportunity, into the primary means of preparing a skilled workforce in a rapidly changing global economy (Iannaccone 1988).

In the public mind, American schools were failing, education standards became a hot political issue, and a period of rapid standards and accountability-focused education reform swept state capitals. After the retrenchment of the role of the federal government during the Reagan Administration, George H.W. Bush pushed for the development of higher standards at

the state level, and sought the creation of a system of voluntary national standards. While the Clinton Administration continued these efforts with the formalization of processes giving Federal support for the development of standards by the states, the idea of voluntary national standards met stern opposition with the end result being an unfocused national education reform agenda. Paradoxically, the defeat of proposals focusing on national standards and centralized accountability at the Federal level by opposition from the right eroded as the Republican administration of George W. Bush pushed through Federal accountability legislation with bi-partisan support (Rudalevige 2003).

The organizational field of public education, which had only begun to settle around a system with state government at the core of decision making and with control refocused on outcomes rather than structural or process controls, was again reshuffled. With NCLB, the Federal government went beyond the typical mode of control exerted through threatening to withhold funds, mandating that states comply with a specific plan for holding schools accountable for student performance, though leaving the decision making regarding the instrumentation of the accountability measurement to the states. Over the course of the last three decades then, public education had veered from Federal efforts at forcing local educational authorities to take equity concerns seriously through a remarkable shift of power to the level of the state and a redefinition of the problems facing education around the effectiveness of schools, to a return of Federal power, mandating outcome control centered around the new frame of accountability for underperforming schools, and prescribing state sanctions, but leaving implementation and instrumental decision making to the states. While the focus of NCLB was accountability, the penalties enshrined in the law draw on thinking that emerged along a parallel track over the course of the 1990's that emphasized market-oriented reforms and the expansion of parental choice in public education.

At the same time that ANAR had reframed the core of public debate around the effectiveness of American public schools, a narrative providing an inspiring understanding of why public schools were failing began to take hold. Since the mid 1980's the crisis narrative had increasingly converged on the failure of American education to prepare a competitive workforce in a changing global economy. Soaring costs[7] (Hanushek and Rivkin 1997), overcrowding, high dropout rates, and low test scores, including persistent gaps in student performance by race and ethnic group, were all cited as evidence of the inequality, and ineffectiveness of contemporary American education. At the same time that standards-based reforms swept virtually every state, and political support for the national curricular and standards based approaches to improving the effectiveness of American public schools had disintegrated, a new strain of argumentation arose focused on market-style rather than state centered accountability. These reformers preferred accountability though competition to the coercive accountability that states were putting into place, concentrating their critique on the

[7] Whether or not the increases in education costs come from declining teacher to pupil ratios, teacher wages, non-classroom expenses or special education expenditure, the perception in the public eye was that education costs were rising with no attendant increase in student performance.

incentive structures in public education, and the control over schools exerted by districts and teacher unions.

Autonomy

School choice advocates had a wide variety of motivations for disliking the existing public school system, from religious motivations to libertarian ones (Cookson 1995). However, over the course of the 1980's and 1990's a parallel narrative to the standards focused one laid out in ANAR developed, detailing why public schools were failing American children and how their public character produced increasingly poor results. In 1955 Milton Friedman had argued that government run education would inevitably fail to deliver due the lack of competitive pressures that might force them to hold teachers accountable, develop new curricula, and otherwise respond to demands of students, parents and communities (Friedman 1955). With the election of Ronald Reagan, and the shift of the American political and cultural landscape to the right, the burgeoning neoliberal worldview took center stage, and Friedman's critique became the theoretical foundation for the policies of many school choice advocates and education reformers.

From this vantage, burdensome regulation was the source of, among other problems, high unemployment, lagging corporate profits, American economic decline on the global stage, and, to a newly empowered group of policy reformers, as the source of deteriorating schools as well. The bureaucratic structure of government-run education and the intransigence of teacher unions were seen as preventing innovation and responsiveness by shielding schools from competition, not to mention offending the increasingly dominant atomistic individual aspects of American political culture by impinging upon individual freedoms. It was argued that, in addition to the over-regulated character of local school districts, the political nature of districts, accountable to local politicians in the form of school board members, subjects schools to the vagaries of political wrangling by actors who don't necessarily have the interests of schools or their students in mind (Chubb and Moe 1990b). This includes school districts, their boards, and powerful teacher unions. Districts have incentive to be responsive to their governing boards which are elected entities, themselves with incentive to respond to the politically organized factions of their constituencies, notably including teacher unions. These reformers argue that unions have incentive to protect the jobs of their members at the expense of student achievement when teachers perform poorly.

The key strategies of this critical strain are identifying and demolishing institutional barriers to: 1) the efficient operation of schools, primarily in terms of the relationships between management and labor on one hand (Moe 2006) and the school district hierarchy on the other (Chubb and Moe 1990a; Hess 2002), 2) the proper alignment of incentives through setting up performance metrics and accountability systems (Van Dunk and Dickman 2003; Moe 2003; Peterson and M. R. West 2003a) and 3) competition between schools for public money through expanding parental choice (Belfield and Levin 2002; Goldhaber 1999; Hess 2002; Caroline Minter Hoxby 2003; Lubienski 2003; Peterson 2006). From this perspective, the solution is clear,

at least in the abstract: dismantle the bureaucratic hierarchies, free schools from direct political control, and break the dominance of unions over the labor supply and the governance relations between schools and their teachers. Reform efforts drawing on these critiques have taken shape with three efforts: school choice, private provision, and alternative teacher certification.

School Choice and School Supply

While the idea of parental choice had been a crucial part of the debate over equality in public schools, the shift in focus to effectiveness had seen it decline in import. The exception was in the ideas of those reformers who believed that public schools and districts were failing because they were inefficient, overly bureaucratic, and had poorly aligned incentive structures. For these reformers, parental choice was the only mechanism capable of spurring competition in public schools, and the key to improving struggling schools (Cookson 1995). The policy ideas generated by this perspective converged on vouchers and charter schools. Over the course of the 1990's, charters and vouchers had been making political hay at the state level with the passage of charter school laws (Finn, Manno, and Vanourek 2001) and the creation of voucher programs in some states and localities. Charters had also received support from the Federal Government with the provision of funds for charter schools in both the 1994 reauthorization of the ESEA and the Charter School Expansion Act of 1998.

Both vouchers and charter schools attempt to mix private school management with public funding, but in significantly different ways. Voucher programs are the most direct attempt at introducing market-like arrangements into public education. These programs operate by giving parents public money to spend on tuition at the school of their choice, including private and sectarian schools. Since the first modern[8] voucher program was instituted in the city of Milwaukee for the 1991-1992 school year, voucher programs have been slow to spread. Before the Milwaukee program began, , publicly funded voucher proposals were defeated in Michigan (1978) and Oregon (1990), and afterwards in California (1992), Colorado (1993) and between the years of 1995 and 1996 in, Arizona , Connecticut, Delaware, Florida, Illinois, Indiana, Minnesota, North Carolina, Oregon, Pennsylvania, Vermont, and Washington. In 1995 Cleveland, Ohio began a publicly funded voucher program similar to that in operation in Milwaukee, as did Florida in 1999, and Louisiana in 2008. Federal funding for a school voucher program in the District of Columbia began in 2004. Three more states, Utah (2005) Arizona (2006) and Georgia (2007) instituted publicly funded voucher programs targeted at special education students. In addition to publicly funded voucher programs, a larger number of small voucher programs funded by private foundations, and the Walton Family Foundation in particular, have been set up in urban areas (Moe 1995, 2001). The largest and most visible of these programs include those in Indianapolis, Milwaukee, San Antonio, Washington D.C. and New York City. Despite a plethora of legal challenges to publicly funded voucher programs, a handful of these continue to operate alongside these privately funded voucher programs.

[8] Voucher programs for rural areas incapable of supporting public schools have existed in Maine and Vermont since the late 19th century.

While they have been slow to spread, proponents of voucher programs remain organized and politically active, as does their opposition. Almost every year a bill or ballot initiative proposing school vouchers is introduced and defeated. While these programs are favored by market-minded academics and education reformers, they have been less popular with voters and have had trouble finding political support. In many ways, the intractable disagreement between voucher supporters and opponents gave way to political compromise through the passage of charter school laws (Cookson 1995; A. T. Lockwood 2004). Charter schools have found support from a wide variety of advocates from many parts of the political spectrum.

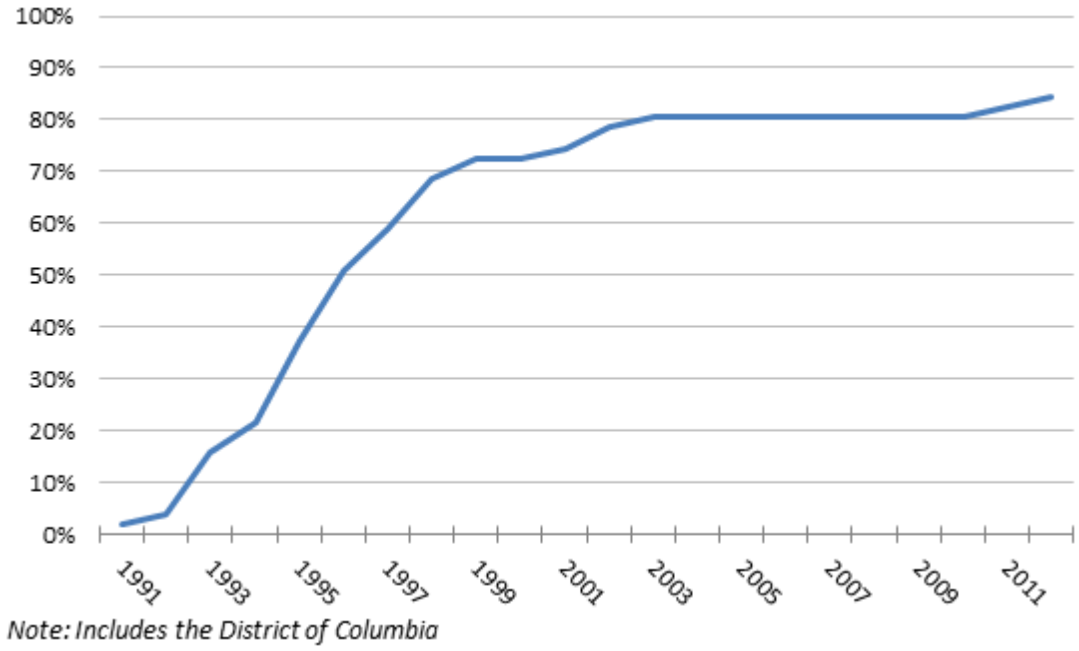
Charter school laws allow for the direct creation and operation of public schools by individuals or organizations with approval from a public entity. These schools are managed and administered in a decentralized manner at the school level or though networks of schools linked by the charter school operators who may be community groups, non-profit Charter Management Organizations (CMOs), or for profit Educational Management Organizations (EMOs). Exactly which public bodies have the authority to authorize a charter school varies from state to state, but generally includes local school boards and the state board of education, and may include state universities and community colleges. The charters under which these schools operate are granted for a limited period of time (typically three to five years) at end of which the chartering agency may or may not renew the charter. Chartered schools are eligible to receive the public money earmarked for their students including both per-pupil and categorical funding. Generally, they receive direct funding from the state which distributes state aid as well as federal money intended for charter school development and operation, and some local funding often administered by school districts. Unlike traditional public schools, most charter schools do not accept students based upon their place of residence, but instead are required to accept students regardless of geography though within the bounds of a particular district or Local Education Agency (LEA). In cases of over subscription to charter schools, lotteries are often used to allocate seats. In addition, most charter schools are free from coverage under collective bargaining and instead employ un-unionized labor. The general idea of charter schools is to create an education vehicle incorporating the equal access and state centered accountability of public schools with the pedagogical, curricular and administrative flexibility as well as the market accountability of private schools. In addition, charter schools, through their LEA-wide admissions boundaries have the ability to compete for public schools students introducing the possibility for increasing competitive pressure on traditional public schools.

Charter school legislation brought voucher supporters and voucher opponents together along with pro school choice parents by offering an alternative promoting choice and quasi-market reform in public education without the more aggressive privatization of the provision of public education that vouchers entail. The first charter school law was passed in Minnesota in 1991. As of 2012, charter laws have spread to 42 states and the District of Columbia. The bulk of these laws were passed in the 1990's with just over 70% of states having passed laws by the

turn of the century, and only an additional 10% passing laws over the next decade. Figure 3.4[9] shows this growth over time.

Charter schools brought together a wide variety of advocates including civil rights groups advocating for freedom from poorly performing inner city schools, business and philanthropic elite seeking simultaneously more efficient and effective means of educating public school children and split Democrats and Republicans alike who each had both pro- and anti-charter factions in their parties; though charter legislation was typically pushed by

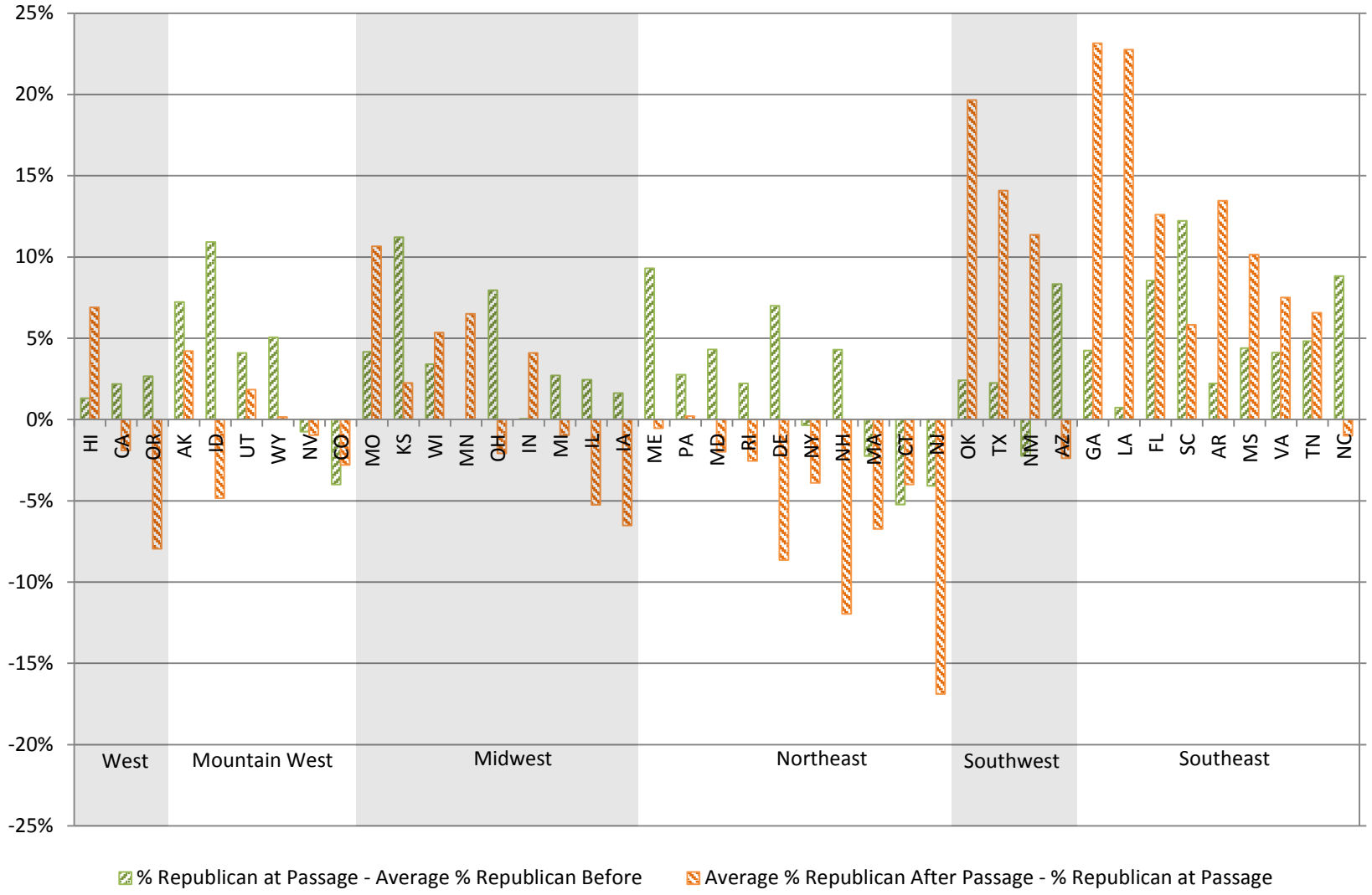
Figure 3.4: % of States with Charter School Laws by Year



Republicans in state capitols. This political schizophrenia of charter school laws vis-à-vis traditional party divides is reflected in the findings of research on the political context surrounding the creation of charter school legislation. Research in the late 1990's described in detail the integral and sometimes conflicting compromises as well as the opposing interpretations of mutually supported policy by legislators that were crucial to the adoption of charter school laws (Hassel 1999; Wells et al. 1999).

[9] Data collected from U.S. Department of Education (2000). The State of Charter Schools: Fourth Year Report. Washington, D.C., U.S. Department of Education.

Figure 3.5: Republican Strength Before and After Charter Law Passage by State and Region



Though groups from a wide variety of political perspectives supported charter schools legislation, typically charter school laws were advocated by Republicans. Studies taking a more quantitative approach looking at the political contexts surrounding charter school law adoption including some specific provisions in these laws highlighted the difficulty that simple approaches to policy adoption based on Republican party strength have with the spread of charter school laws (Mintrom 2000; Renzulli and V. J. Roscigno 2005; Wong and Shen 2002). Some of have argued that studies concerning the adoption of charter school legislation need to take into account greater detail in the policy making processes in specific states. Although the role of party control in the adoption of charter school legislation has been the subject of much study to little avail, one aspect of the political process not typically taken into account is the timing of the legislation with regard to party control, that is to say the Republican party's strength within a given state relative to recent history.

Figure 3.5[10] shows the difference in terms of the percent of state legislative seats held by Republicans between each state at the time of charter school law passage and the average percent of seats held by Republicans in the period before passage, as well as the difference between the percent held in years after passage and the percent held at passage. Conceptually, green bars represent the gain in Republican sets prior to passage and orange bars the gain after passage. When both bars are positive, the state passed a charter law in the midst of a trend towards Republican seats, when both are negative, a trend toward Democratic seats. When the green bar is positive and the orange negative the law was passed at a local peak in Republican legislative power, when the green is negative and the orange positive, at a local trough.

The clearest trend revealed by Figure 3.5 is that Southern and Southwestern states passed charter school laws when Republicans were in the midst of gaining legislative strength, as measured by the percent of seats held in both houses. The exceptions here are Arizona and North Carolina which passed laws near Republican peaks in the legislature and New Mexico which passed its charter law when Republicans were relatively weak. New Mexico proves to be the exception amongst all states in this respect however. This state is the only one that passed a charter school law when Republicans were at a weak point in local legislative history. Every other state passed charter laws in the midst of continuing Republican legislative gains, legislative local high points of republican strength, or in the midst of continued Republican legislative decline.

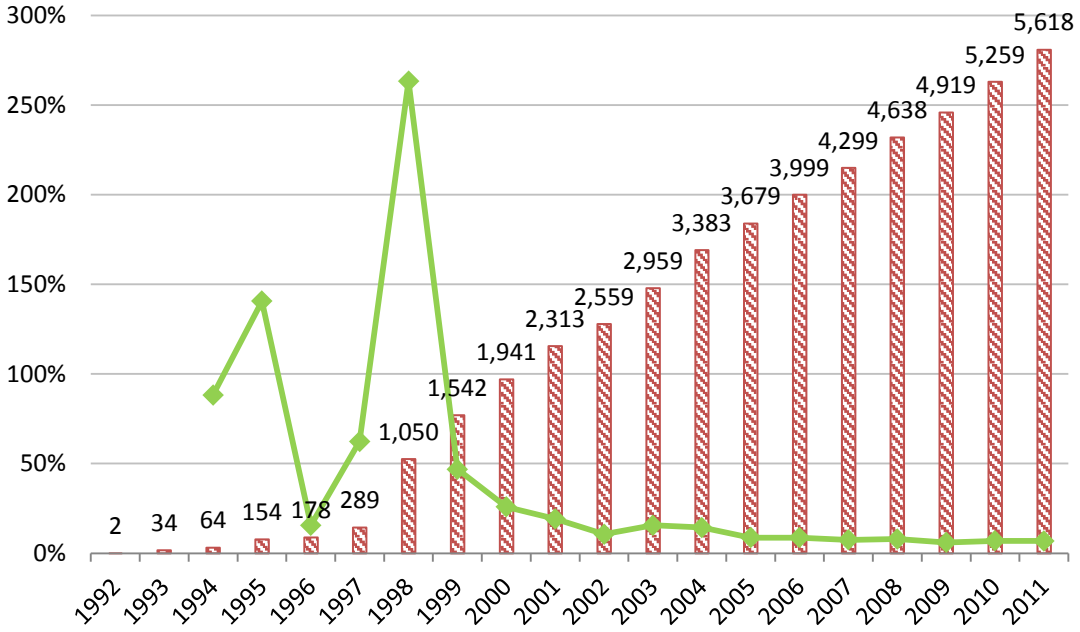
In each of the Midwestern and Western states Republicans were either in the midst of legislative gains or at a local strong point before subsequent declines. Looking at the timing of charter school legislation vis-à-vis the relative historical power of Republicans in the state legislative bodies, we only see charter school legislation passed in period of sustained Republican legislative decline in two states in the Mountain West including Colorado and Nevada, and in four Northeastern states including Massachusetts, Connecticut, New York and

[10] Data taken from the National Conference of State Legislatures and includes years from 1990 to 2012 inclusive. Data doesn't include Washington, D.C. Washington state is not included due to the fact that their law was passed in 2012 so not data is available after the law's passage.

New Jersey; however each of the Northeastern states had a sitting Republican governor at the time they passed their charter school legislation.

While more systematic statistical analyses of the effect of party control on charter school law adoptions has typically found little to no evidence that Republican legislative power has a significant effect, these studies often examine contemporaneous legislative composition or lagged values for Republican control (Renzulli and V. J. Roscigno 2005; Wong and Shen 2002). Looking at simple legislative gains for Republicans over years prior to adoption shows that about 85% of states adopted charter laws during sessions with larger proportions of Republican than in the recent past.

Figure 3.6: Number of Charters and Rate of Increase by Year



Note: Includes the District of Columbia

By the mid 1990's, charter school policy had moved up to the federal level as the Clinton Administration encouraged states to adopt charter school laws and expand the number of charter schools in operation. A provision allowing for the Federal government to distribute funds to states with charters laws in order to support the development of charter schools was included in the 1994 ESEA reauthorization as the Public Charter Schools Program (PCSP), and in 1998 the Charter School Expansion Act (CSEA), increasing the funding provided under the PCSP from $15 million to $100 million, was signed into law by President Clinton with the expressed goal of having 3,000 charter schools in operation across the United States by the year 2000. Even as states were passing charter school laws, the number of charter schools actually

operating during most of 1990's was limited. Figure 3.6[11] shows the growth in the number of charters over time and the rate of increase year over year.

With the passage of NCLB in 2001, Federal support for charters continued. While the push to expand choice in public education has consisted primarily of knocking down institutional barriers to non-residential choice in local school districts through the expansion of the types of schools available (magnets, charters, etc.), through the establishment of open enrollment policies, and to a much lesser extent, through vouchers, the Public School Choice (PSC) provision of NCLB has the potential to open up the possibility of choice to many children as the number of schools considered to be failing are, by all accounts, extremely high. NCLB also promoted charter schools directly through the expansion of Title V funds targeted at charters (A. T. Lockwood 2004). President George W. Bush's first attempt at NCLB included a proposal to provide vouchers to parents with children attending PI schools in order to allow them to transfer to the public or private school of their choice. Although the voucher proposal was replaced by the more politically palatable PSC with its charter-focused choice, this rule along with the charter funds written into Title V continued and expanded the federal support of charter schools that had begun in 1994.

By the 1997-1998 school year there were only 289 charter schools in operation across the United States, but in the following year the number exploded to 1,050. This rapid increase came on the heels of the CSEA, but it wasn't quite enough to meet President Clinton's goal. By the year 2000, there were 2,036 charter schools in operation, and it would take until 2004 to break the 3,000 mark. As charter laws spread across the United States, the expansion of charter schools came in the form of increasing numbers in the core charter states. In the year 2000, 63% of charter schools and 65% of charter school students were located in 7 states Arizona, California, Florida, Michigan, New York, Ohio and Texas. By the end of the decade these numbers had slipped only a little to 60% and 59% respectively.

Even as charter school laws were being adopted by more and more states, the content of these laws differed dramatically across states, and states continue to tinker with their charter laws over time. Some states like Arizona grant a large degree of flexibility to charter schools, while other charter school laws, like those in Mississippi and Iowa offer charters a very limited range of freedoms subjecting them to a much greater degree of state control. There is a wide variety from state to state in the organizations empowered to authorize charters, in operational autonomy from state regulations, from district control over funds, freedom from collective bargaining agreements, in the availability of facility funding for charter schools as well as in the number of charter schools allowed to be in operation at any given time or started in a given year.

[11] Data collected from the National Alliance of Public Charter Schools

Figure3.7: Charter School Law Flexibility by State – Selected Years

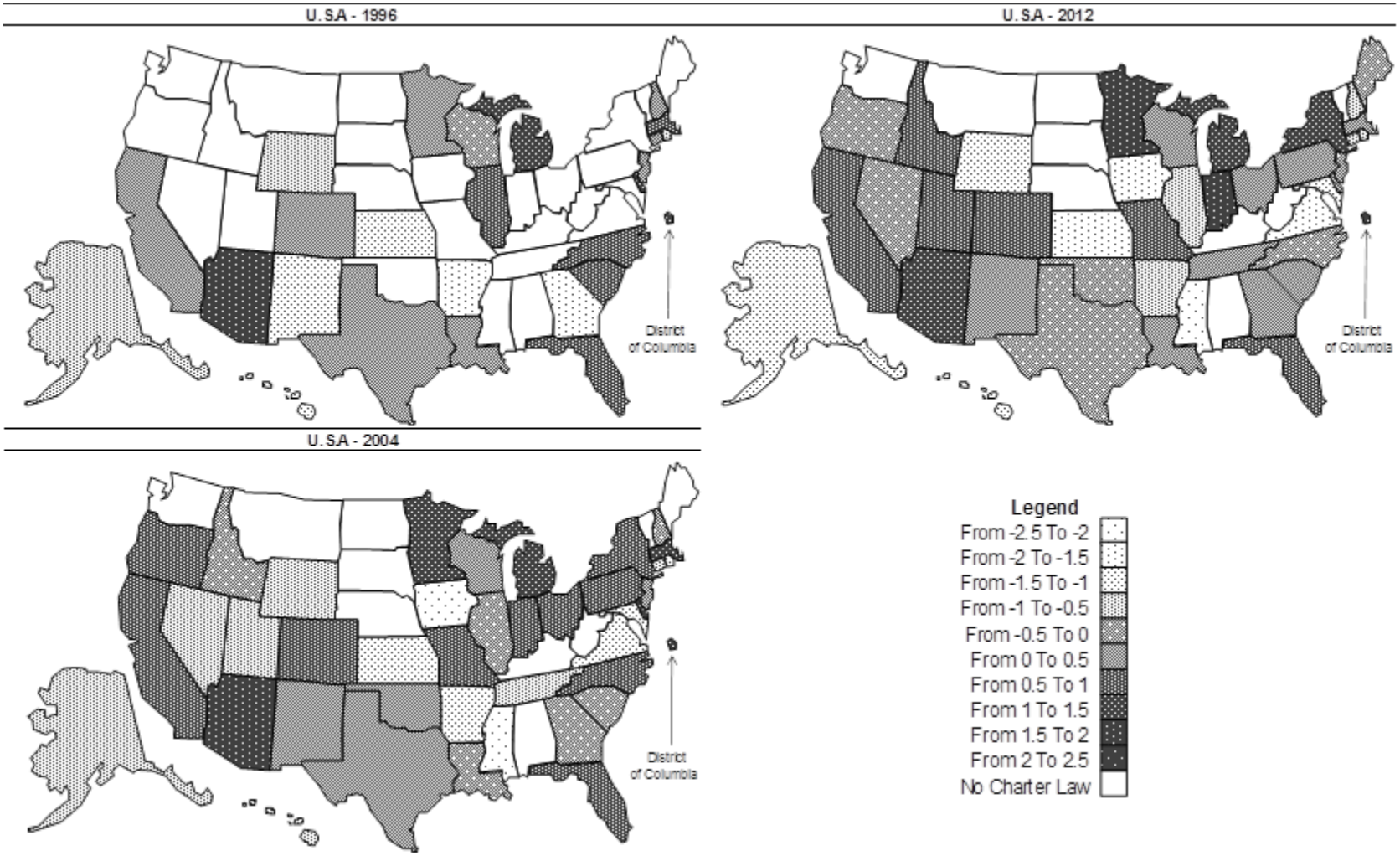


Figure 3.7[12] shows a graphical depiction of the flexibility in each state's charter school laws in 1996, 2004 and 2012. Each state is given a score on the flexibility of their charter school laws based upon the number and kinds of organizations allowed to authorize charters, the presence or absences of caps on the number of charter school in the state, the autonomy these laws grant charter operators from regulations, district control, and collective bargaining, as well as the funding for charter facilities and per-pupil funding commensurability with traditional public schools. These scores were then standardized and used to color the maps in Figure 3.7[13].

Arizona, Michigan and the District of Columbia emerge as places that have consistently had very permissive charter school laws, followed by California and Florida, both of which typically show greater than average law flexibility. Mississippi, Iowa, Virginia, Maryland, Rhode Island, and Connecticut on the other hand have maintained charter school laws offering less flexibility to operators. Some states including North Carolina, Illinois, and New Hampshire have tended to shift lower in the distribution of charter school flexibility of over time, while New York, Colorado, Idaho, New Mexico, Utah, Wisconsin, Georgia, and Minnesota have done the opposite, becoming relatively more flexible with regard to charters in their states. Six of the seven core charter states including Arizona, California, Florida, Michigan, Ohio and New York, have tended to maintain the flexibility they offer charters going forward. In 2012, these were some of the more permissive states. The exception, amongst those states with large charter sectors, is Texas which has maintained a relatively tough legal framework for charter operators.

Even with the wide variation in the content of charter laws across states, the sector continues to attract growing enrollment nationally with the proportion of public school students in charters continuing to grow steadily. As the number of charter schools continues to climb at a rate between 6% and 7% year over year, the number of students in charter schools has grown even faster. Figure 3.8 shows the number of charter school students annually from 1999 to 2011, the rate of change in this number, and the percent of all public school enrollments made up by charter school students. Between 1999 and 2011 the number of student in charter schools has risen from about 350,000 to just over 2 million students. The year over year increase in the number of charter students has steadied at between 11% and 13% per year over the last five years, and the percent of all public school kids enrolled in charters continues to climb steadily, sitting at nearly 5% in 2011.

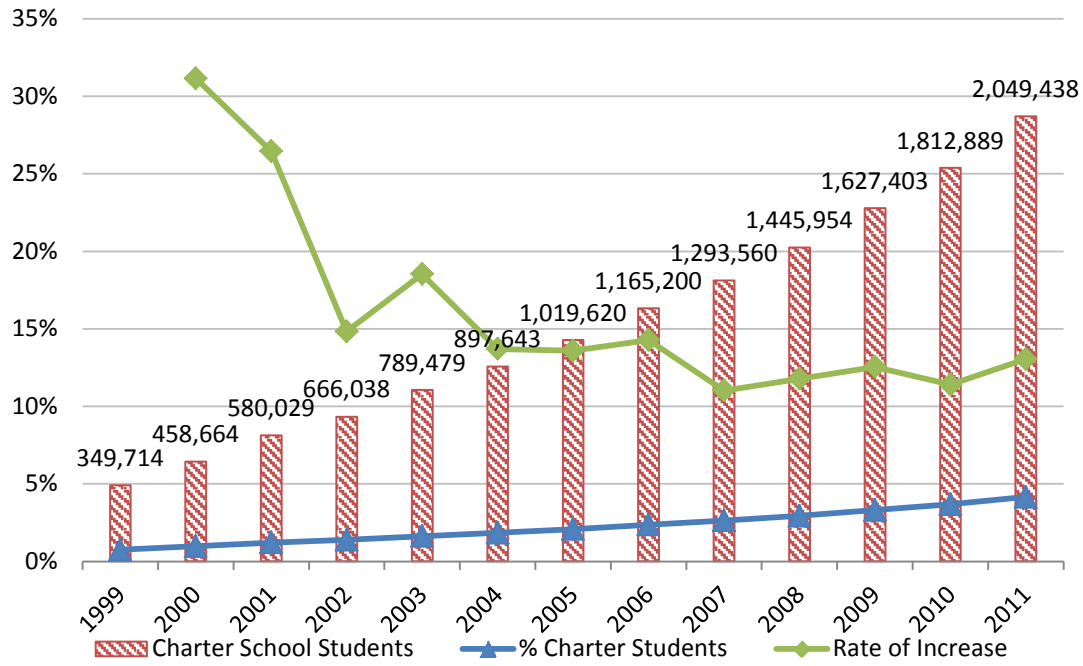
The expansion of charter schools has important implications for the structuring of the organizational field of public education. The creation of a new class of schools subject to a different set of rules than either their traditional public or private school counterparts alters the resource relationships for all of these organizational populations. Traditional public schools have enjoyed administratively determined flow of students, but have been subject to the

[12] Data are drawn from annual reports on state charter school laws compiled by the Center for Education Reform.

[13] The Center for Education Reform ranks each state's charter school law on a variety of factors at least once every two years, though at times annually. They've changed the scaling over time, so in order to make these rankings commensurate over time, I calculated the Z-score for each state's ranking each year. This score is what is plotted in the maps in this figure. Thus, change over time should be interpreted as movement in the distribution of charter school flexibility rather than change in the absolute flexibility a given state's law offers to charters.

administrative control of districts over funds, residential boundary creation, and, in concert with teacher unions, over the hiring and placement of teachers. Private schools have autonomy in terms of the allocation of funds and the hiring, placement, and pay of teachers, as well as admissions, but face a larger degree of uncertainty in terms of the inflow of capital, students and teachers. The introduction of charter schools creates a third organizational population subject to different rules structuring resource flows that competes locally for these resources. Charter schools have no residential boundaries, and flows of students are far more uncertain; however their ability to take students from any locality just like private schools, and to do so tuition free, like traditional public schools could increase competitive pressures on both organizational populations ratcheting up technical demands on all schools through competition. On the other hand, the greater flexibility these schools enjoy in terms of curricular and pedagogical specialization gives them an advantage in terms of niche creation. The creation and growth of a new organizational population in this space has generated increasingly heterogeneous demands on schools and created a much more variegated organizational ecology of schools than existed before the spread of charters.

Figure 3.8: Number of Charter Students, % of Public School Students, and Rate of Increase by Year



Note: Includes the District of Columbia

Charter school expansion means asymmetric relations between the state, districts and schools within the social sector of education. On the one hand, traditional public schools are subject to the familiar state-district-school hierarchy. On the other hand, charter schools are in many cases not subject to administration by school districts and instead are autonomous, reporting or receiving funds directly to/from state departments of education. The creation of an alternative set of rules highlights the importance of strategy in organizational behavior. For example, in many states schools have the ability to convert to charter status enabling the

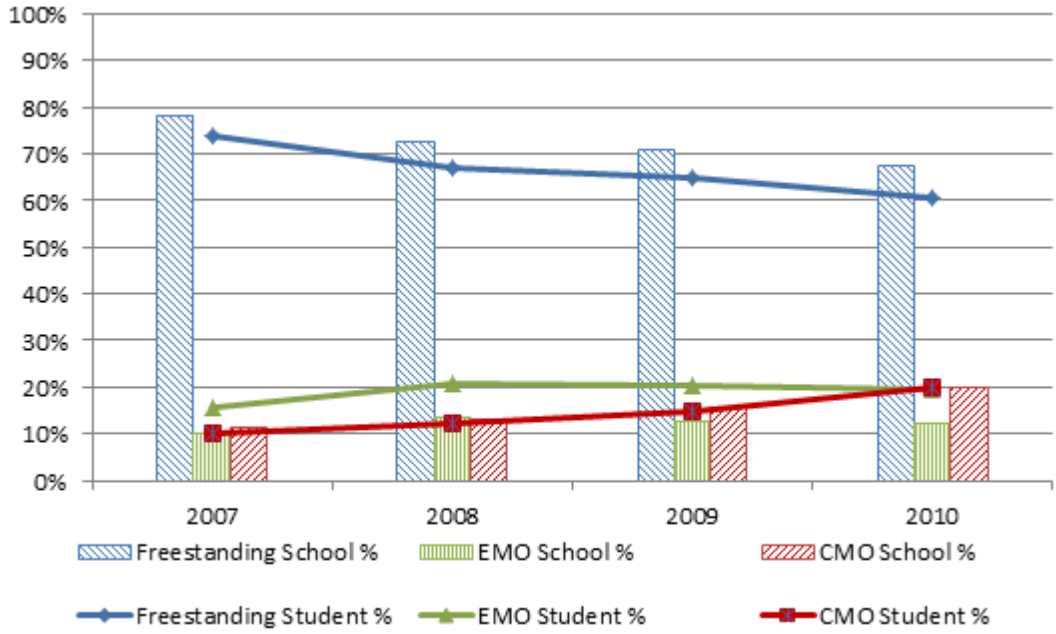
strategic use of the alternative set of rules for charters by school administrators in school-district relations (Huerta and D' Entremont 2010). The passage of charter school laws is a crucial shift by state governments seizing instrumental decision making power over school supply from local education authorities, and decentralizing it to non-public groups, muddying the role of districts as the sole organizations holding jurisdiction over these decisions.

Education reform has increasingly gravitated toward parental choice through inter- and intra- district transfer programs, vouchers, and in particular through the passing of state charter school laws over the 1990's. Over the last decade, charter schools have become the public centerpiece of school choice advocates, drawing support from both the right and the left of the political spectrum. While the forces that lead to state adoption of charter school laws are complex, it's clear that Republican gains in the legislature or a sitting Republican governor were conducive to the passage of these laws. The laws that states passed however vary widely in character. The most flexible states allow all kinds of groups to start charter schools, have multiple authorizing authorities, and an appeal process to the State Education Agency for denied applicants. These states grant charter schools a large degree of freedom from district rules, and provide full per-pupil funding and direct support to charters bypassing district administration of funds. In some cases, these states have granted charter schools waivers from some state regulatory requirements as well. The pro-choice education reform agenda also found support at the Federal level with funding tied to charter school development and expansion. NCLB and the expansion of charters school laws also provided impetus and opportunity for private organizations to enter the field of public education provision through management of schools directly and through the expansion of specialty services to public schools and districts.

Private Provision - Management Organizations and Specialty Services

Though public schools and districts have had a long history of contracting out non-instructional aspects of education such as automotive services for school busses, accounting services, food service, etc., the late 1990's saw the expansion of public and private corporations into public instruction (J. Murphy 1998). As charter school legislation spread to states across the country, private management organizations formed and along with them came a new form of private provision in public education. Fueled by NCLB, the 2000's saw private provision of instructional services become a mainstay of American public education (Burch 2009). In addition to supporting school choice with the PSC provision, and through the increased funds for charter schools, NCLB expanded the private role in public education through the expansion of market opportunities for test development, preparation, implementation, and analysis, on the assessment side and supplemental instructional services on the penalties side. The expansion of the private sector into public education between 1990 and the present has been driven by these two types of organizations: 1) management organizations (MOs) engaged in the direct management of public schools (Miron and Nelson 2002) and 2) specialty service providers (SSPs) whose business revolves around supplemental services including tutoring, test preparation, language instruction and specialty services for children with learning disabilities. Each of these will be discussed in turn.

Figure 3.9: % of Charter Schools and Students by Management Type



The literature has been confused as to the precise differences and commonalities between EMOs and CMOs. Typically, however, EMOs are for-profit organizations which as a group manage charter and non-charter public schools, and are often also SSPs. CMOs are usually non-profit organizations involved exclusively in charter school operation. While the ownership structures, tax statuses, and operational diversification of EMOs and CMOs differ, the functional overlap of these organizations means that often the catch-all MO is more useful (J. T. Scott and DiMartino 2010). Typically, MOs manage all aspects of school operation from hiring decisions on teachers and staff to administration and clerical services, food services, as well as facilities and building maintenance. Historically, EMOs can be traced back to the performance contracting experiments of the 1970's which tasked private sector organizations with the remediation of poorly performing, particularly minority students and, in some instances, entire schools (J. Murphy 1998). These experiments were generally considered to be failures, but EMOs returned to the national stage during the 1990's as a few highly publicized instances of school districts turning to the private sector for school management captured media attention. By the end of the decade these organizations had expanded into the charter school sector, and, though their growth slowed after the collapse of the banner firms Edison Schools and Education Alternatives Incorporated in the early 2000's, they continue provide private management of public schools, and have increasingly diversified into specialty and supplemental services.

As charter schools continued to expand over the course of the 2000's the demand for specialized school management organizations grew substantially. For profit EMO's, now privately funded, continue to win contracts to operate public schools in some districts; while a rival set of organizations has grown up in the non-profit sector. CMOs in particular provide a

non-profit alternative conferring organizational expertise and scalability of educational models while trading the reliance on profit oriented capital markets (private or public) for the world of private foundation support.

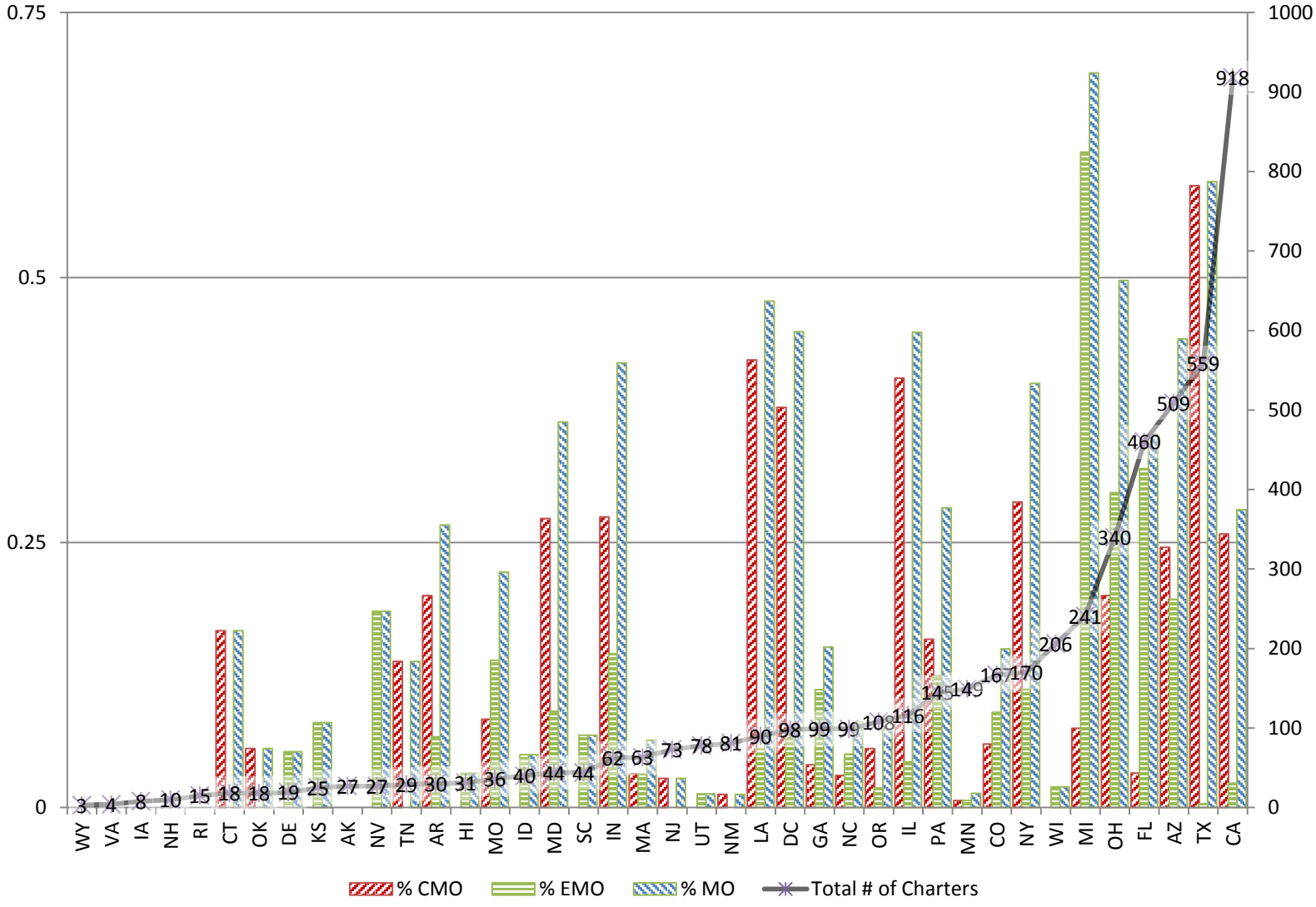
MOs have continued to gain ground in the charter school sector. Figure 3.9[14] shows their growth between 2007 and 2010 as a percent of the charter sector both in terms of the number of schools operated by MOs, and the number of students enrolled at these schools. In 2010, nearly 40% of charter school students attended schools run by either CMO's or EMO's with enrollment split evenly between the two types of MO, a growth of nearly 15% from just four years before. Similarly, the percent of charter schools made up by the various management types has been shifting. Over the same period the percent of charters run by MOs also increased though only by about 10% over the four years from 2007 through 2010 with the bulk of the increase coming from CMOs. The gap between the growth in enrollment and the growth in the number of schools run by MOs suggests that freestanding charter schools are more likely to be small schools while MOs may operate relatively larger charters.

Just like the wide variation in the strength of charter school laws across the states, we also see significant variation in the relative shares that the various management types have across states. Figure 3.10 shows the shares of the charter sector in each state made up by CMOs and EMOs along with their sum and the total number of charter schools operating in the state in 2010. The organization of charter sectors shows wide variation across states with some states exclusively allowing charter schools to be run by freestanding operators, or with only very limited proportions of charters being run by MOs. Six states including Wyoming, Virginia, Iowa, New Hampshire, Rhode Island, and Alaska had no charters being run by an MO, although all of these states operate a very small number of charter schools. Among the 18 states operating fewer than 50 charter schools, only a third have MOs operating more than 10% of their charters. These include Connecticut, Nevada, Tennessee, Arkansas, Missouri and Maryland, with Maryland alone reaching the proportion of MO run schools in the nation at large in 2010 (32%, see Figure 3.9 above). Even within this group we see significant differences in terms of the types of MOs operating schools with non-profit CMOs dominant in some of these smaller charter sector states like Connecticut, Tennessee, and Maryland and for-profit EMOs dominant in others including Nevada and Missouri.

States with mid-sized charter school sectors of between 50 and 100 schools show similar variation with half of the states in this range having very few MO operated schools. Of the 9 states in this range, a third show fewer than 5% of their charter schools being operated by MOs including New Jersey, Utah and New Mexico, and an additional two, Massachusetts and North Carolina, show fewer than 10% of schools operated by MOs. On the other hand a third of the states in this range show MOs operating more than 40% of their charter schools including Indiana, Louisiana, and D.C. In each of these three cases, CMO's dominate the field.

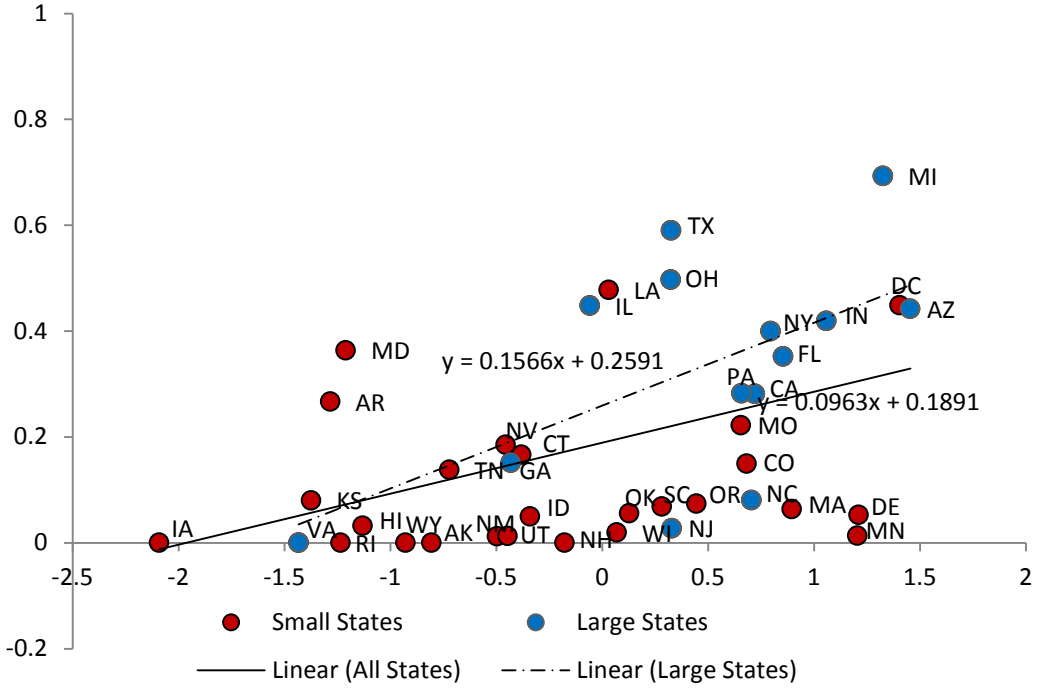
[14] Data was gathered from the National Alliance for Public Charter Schools.

Figure 3.10: Percent of Charter Sector in States by Management Type



The heterogeneity in the specifics of charter school laws across states, and the differences between states in the kinds of organizations that are running their charter schools highlights the variability in both environment and organizational structures faced by charter schools. This wide variation in the organizational aspects of charter schools sectors from states to state suggests that significantly different organizational dynamics may be at play in Michigan as opposed to say Texas. Clearly the extent to which a given state's charter school sector is organized by freestanding charters, by for-profit EMOs, or by non-profit CMOs is related to the flexibility afforded to charters under each state's charter legislation. Figure 3.11 displays a linear model of the percent of charters in a state managed by MOs in 2010 as a function of the average z-score of the state's charter law flexibility as assessed by the CER between 1996 and 2009. As flexibility increases, so does the proportion of charters run by management organizations. This comes as no real surprise, but we see a wide range of variation in charter law flexibility in states with relatively small public school populations and no discernible increase in MO presence. This of course suggests that market size matters to MOs. If we only consider states with over a million public school students in the 2005-2006 school year, we see the effect of relative charter school law flexibility on the proportion of schools run by MOs is about 1.5 times as large as the effect when including all states.

Figure 3.11: Linear Prediction of % MO by Average Charger Law Flexibility



Even as growth in management organizations has been uneven across states, Federal policy has been generally beneficial to MOs. Both CMOs and EMOs have benefitted from the enactment of NCLB. The primary way in which NCLB strengthens the position of CMOs is through the PSC provision: all MOs operating charters benefit from the ability of students in PI

schools to transfer into charter schools. Furthermore, schools deeper in the cascading penalties laid out by NCLB can be taken over by MOs as a part of their restructuring plan. However CMOs, unlike EMOs, have generally been hesitant to diversify into the market which most benefitted from NCLB reforms, that of supplemental and specialty services.

NCLB dramatically expanded the market for supplemental and specialty services in public education including test preparation, data analysis and management, and mandated remedial services (Burch 2009). Most districts have traditionally contracted out standardized test development, but with the enactment of NCLB organizations offering these services showed quickly increasing revenues. Many of these firms also increased their revenue streams through expansion into data services for the processing, storage and tracking of student information and test performance. Again, districts had already been contracting out the instruction of particular groups of students whom they lacked the expertise to educate effectively, in particular students with severe behavioral, emotional and developmental problems. There were also organizations offering tutoring services to poorly performing students. NCLB provided a huge boost to this market by mandating that schools in PI offer to supply all of their students with outside tutoring services, and to fund this through their Title I funds. States are required to maintain a list of approved providers which can include private and public corporations, non-profits, community and faith based groups, teachers or other education professionals, as well as school districts themselves. As more and more schools enter PI, the size of the market for these services continues to expand. In the seven years following the passage of NCLB the market for these services grew rapidly from about $2.5 billion to $4.5 billion (Burch 2009). As is often the case in markets after a policy change, reorganization in the organizational field follows. The market for supplemental education services was no exception, as evidenced by a wave of merger and acquisitions in the years following NCLB's passage. The result has been the rapid growth and consolidation of a multi-billion dollar market dominated by a shrinking set of large firms.

As the charter school sector expands and the markets for testing, data management and specialty instructional services grow, private organizations have begun to play an increasing role in public education. The market for specialty services is large and getting progressively larger, and the proportion of charters run by private management organizations continues to increase moving the private sector from upstream and downstream activities and into the direct management of public schools. It must be noted however that the national numbers showing the growth of MOs in the charter school sector hide vast variation from state to state. Along with the wide variety in the legal frameworks governing the creation and operation of charter schools, we see sizeable differences in the proportions of charter schools in a given state being run by MOs. States with legal frameworks offering charter schools more flexibility have tended to foster private management, and this is especially true in larger states with sizeable numbers of public school students. Even amongst these states, there is a lot of variation in the relative proportions of non-profit and for-profit organizations managing charters.

The theoretical foundation for the choice policies, and the advancement of private provision advocated by market-oriented reformers targeted not only miss-incentivized district bureaucrats, but also teachers who were perceived as insulated from their in-job performance educating students by powerful unions which controlled school boards, bullied principals, and shielded teachers from the authority of principals. At the same time, a related set of ideas challenged the dominance of universities over teacher certification advancing alternative certification routes, and advocating the idea of competitive credentialing. The critique of teacher unions and the processes governing the training and preparation of teachers underlay a series of changes in the supply of teachers that continue to restructure the flow of teachers into schools.

The Teacher Pipeline

Along with the supply of schools, reformers interested in school autonomy have targeted the supply of teachers as an area in which existing institutional structures maintain perverse incentives, creating teacher shortages and protecting poorly performing teachers at the expense of student achievement. The supply of teachers flowing in to public schools is regulated primarily through two institutional valves: the preparation and training process monopolized until recently by university departments of education, and collective bargaining between unions and districts that set wage schedules and formulate the policies structuring the allocation of teachers across postings within a particular district. The last thirty years have seen significant changes in the structures governing the flow of teachers into schools including significant changes in teaching as a profession through the weakening of the institutions governing entry into the field with the development of alternative pathways to teacher certification, as well as through the declining dominance of teacher unions with the expansion of charter schools. First I'll give a brief description of the development of teaching as profession in the United States and then move on to alternative certification and teacher unions.

With the expansion of the common school model across the nation over the course of the 19th century, came so called normal schools, or training academies founded to supply the rapidly expanding common schools with needed teachers. By the beginning of the 20th century, states, counties and cities were running normal schools producing teachers for local districts and the common schools they governed. As normal schools expanded to meet the demand of growing public schools, they became local and easily accessible institutions of higher education and their students began to demand an expanded education similar to more prestigious liberal arts colleges and established universities (Labaree 2008). Adapting to consumer demand took focus away from preparing teachers for work in schools, but opened up new possibilities. As normal schools diversified their education programs, staff and departments, they sought higher status identification as teacher's colleges, allowing them to grant bachelor's degrees. The political lobbying for inclusion in higher status categories conferred not only prestige but access to coveted expanding higher education markets, and continued as normal schools first became teacher's colleges, then state college, and finally state universities offering graduate degrees. From the other direction, existing elite universities, spurred by the expansion in elementary and secondary education created education departments focused to a greater degree on research

and the training of school administrators (Labaree 2008). This process reached a stable state by the 1960's with education departments in elite universities focused on research and their state college counterparts focused on the production of teachers. The ultimate incorporation of teacher training and certification into the university system followed the model of many other professions including law, medicine, and religious studies. At this point, teachers seemed to have achieved a modest degree of professionalization with states regulating the aspects of certification required in a teacher preparation program and universities exclusively supplying these programs.

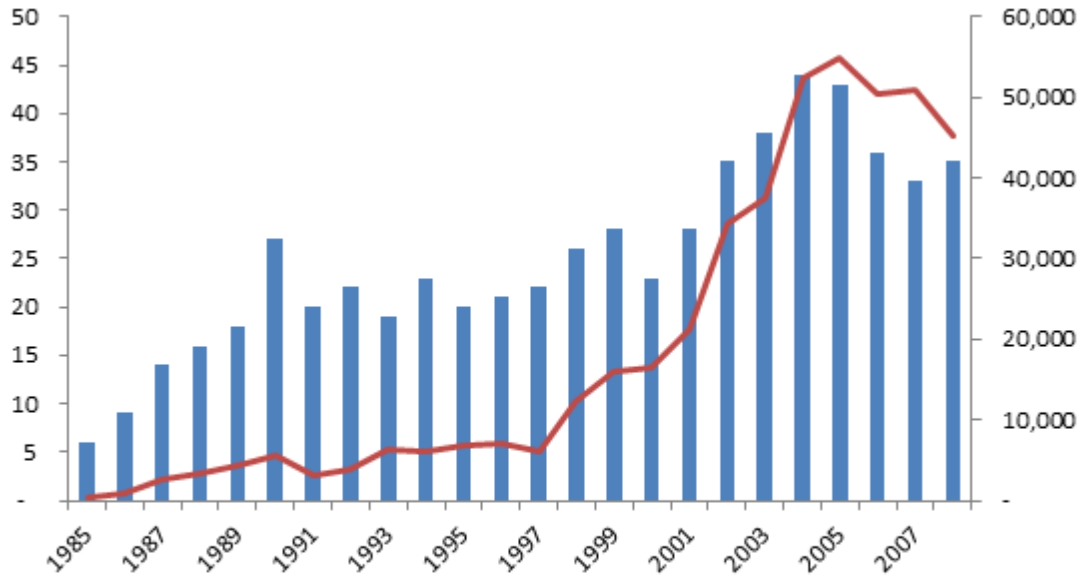
As the common school model spread, and public schooling centralized over the 19th and early 20th centuries, the National Education Association (NEA), dedicated to the professionalization of teaching and dominated by male school administrators rose to prominence (Murphy 1992). As normal schools expanded, seeking increasing status as newly named colleges, the emphasis they put on certificates of education as the measuring stick for teaching fitness moved in concert. Certification provided jurisdictional leverage for an expanding professionalization project driven by administrators interested in distancing teachers from the control of communities. The NEA sought to give teachers measured autonomy as trained professionals, while subordinating them to the oversight of administrators who ran the NEA. The interests that the NEA had in turning teaching into a profession stood in opposition to the burgeoning unionization movement that sought to wrest control of teacher's work from administrators, guaranteeing them academic freedom, and fighting for increased salaries (Murphy 1992).

The national teacher's union, the American Federation of Teachers (AFT), had grown as an organization committed to fighting for the rights of teachers as laborers and remained at odds with the NEA over their attempts to professionalize teaching. The AFT's conflicts with the NEA were driven by the dominance of the NEA by administrators whom the AFT viewed as having interests at odds with the rank and file teachers. The NEA for their part remained unwilling to fight for teacher pay and working conditions with strikes. Despite their contentious and often vicious relationship with the AFT, and their ideological opposition to the idea of striking, by the early 1960's the NEA was being pressured into adopting the tactics of organized labor as they found themselves losing control over collective bargaining for teacher salaries in key urban areas (M. Murphy 1992). Rather than support collective bargaining and strikes, the NEA adopted the soft language of "professional negotiations" and preferred to protest through sanctions or the withholding of new employees from recalcitrant districts and states. By the late 1960's however, the NEA had sanctioned the use of strikes and completed the transformation into a labor union; though still attempting to maintain its identity as a professional association.

In the mid 1970's the teaching profession had reached a place of remarkable stability. University programs awarding teaching certificates funneled a diverse population of teachers into American public schools. Schools in turn were governed by districts who maintained relatively stable relationships with teacher unions which had gained significant collective bargaining rights in most states by this time. During the last half of the decade however, this changed significantly. As public school enrollments declined from the crest of the baby boom,

the demand for teachers began to flag. This flagging demand resulted in a period of oversupply with new teachers struggling to break into a union dominated field in which personnel decisions were structured by the twin institutions of seniority and tenure. Salaries also began to fall in real dollars over this period. Slow economic growth and rapid inflation put political pressure on local governing bodies to roll back taxes that provided the funding base for public school teachers, and less demand put newly empowered unions at a disadvantage in negotiations for salary increases that were likely to be paid for with layoffs and hiring freezes (Murnane et al. 1991).

Figure 3.12: Alternative Teacher Certification 1985 – 2008



As the demand for teachers shrunk in the late 1970's and 1980's, so too did the supply pipeline, and in the early 1980's the number of college graduates seeking teaching credentials began to decline (Murnane et al. 1991). University departments of education, which monopolized the programs offering training and certification, posed significant costs to prospective teachers. The increasing costs of university tuition and the testing and certification requirements for these programs along with the declining numbers of teachers graduating created a bottleneck for schools and districts trying to attract prospective teachers into positions offering relatively low pay due to budgetary constraints and seniority driven pay structures growing out of collective bargaining with unions (Murnane et al. 1991). Driven by high turnover and maintained by the lower wages received by teachers relative to private sector positions requiring the same education, some districts and schools faced painful shortages in teachers for key subjects and specialty areas.

Although public school enrollments were declining, it's important to note that this decline was geographically uneven. Areas experiencing population growth, particularly in the form of immigration, were facing expanding enrollments even as the total enrollment in public schools was declining. Districts with expanding student populations, along with poor and

minority areas particularly in large urban and very rural districts, began to face difficulties in staffing teaching positions, and retaining the staff they were able to get (Zeichner and Hutchinson 2008), and some districts were finding it very difficult to attract teachers with the mandated certifications and university provided training. In some cases local education authorities created alternative routes for teacher certification in order to fill these positions (Zeichner and Hutchinson 2008). The creation of these alternative routes was a crucial change in the settled institutional relationships governing teacher supply that had developed over the past century.

The vice grip that universities held over the certification process began to loosen at the beginning of the 1980's. As teacher shortages and retention problems cropped up in localities, some local education agencies, as well as some state education departments sought to create a parallel system of teacher production that harkened back to the less centralized system of the 19th and the first half of the 20th century. In addition, districts in urgent need of staff began to deputize new teachers, granting teachers willing to teach in hard to staff schools and subject areas emergency credentials that enabled them to teach though they had not been certified by the state. In other cases, districts developed internship programs in which teachers were able to actively teach while working towards their certification. In addition to districts, some states set up alternative routes bypassing established university preparatory programs. Over the course of the next three decades, alternative certification routes expanded to nearly every state in the union and began to turn out a significant number of teachers, as shown in Figure 3.12[15].

The "alternative certification" label conceals a remarkable amount of heterogeneity. These alternative routes vary considerably in terms of the type of organization running the programs, the entry requirements, components, and length of the program and the types of prospective teachers they admit (Feistritzer and Haar 2007). Some alternative routes are run by private for-profit providers, including both in-person and virtual programs, some are run by local districts, and many are run or designed by colleges and universities outside of the four year education-degree based program of study. Some programs are decidedly local in character offering training oriented towards obtaining certification in a specific state, and employment in a specific school district or set of districts while others attempt to be national in scope acting as recruiting networks to funnel prospective teachers into local programs or even to create cross-state programs that multiple states can choose to accept as meeting the requirement for a teaching credential.

By all accounts, the first alternative certification program was developed in New Jersey beginning in 1983, by the New Jersey Department of Education (Susanna Loeb and Grossman 2008; Zeichner and Hutchinson 2008). This alternative route consisted of an internship program at local districts for prospective teachers holding bachelor's degrees in fields other than education, who had passed specific subject matter tests. After completing this internship along with limited coursework in teaching methods, these teachers-in-waiting would receive

[15] Data taken from the National Center for Alternative Certification

permanent licenses to teach in the state having completely by-passed the university departments of education. This program was unsuccessfully challenged by the local branch of the NEA as well as the American Association of Colleges for Teacher Education (AACTE) a group representing the interests of the nation's colleges of education, who professed opposition for the program because of its potential for degrading professional standards in teaching (Zeichner and Hutchinson 2008). The lines that were drawn in the political debate surrounding the New Jersey program continue to structure the political debate about alternative certification routes with teacher-led professional associations and university colleges of education generally opposed to alternative certification. Alternative certification routes however received substantial political support as the result of conflict between the professional arm of rank-and-file teachers, the NEA, and the national body representing the interests of university departments of education and teacher preparation programs, the AACTE.

The expansion in alternative routes to teacher certification was progressing at the expense of traditional routes to certification within universities. The political dynamics surrounding the expansion of alternative routes centered first on increasing the standards for certification. A key piece of the standards based reforms detailed earlier in the chapter were efforts at increasing the requirements for teacher certification. Over the course of the 1980's states sought to ratchet up standards for credentialing teachers, particularly in the form of mandating higher performance on certification tests and judging teacher preparation programs on the basis of their teacher's performance on these tests (Toch 1991). The focus in the standards and accountability movement on teacher professionalism was leveraged by teacher organizations into an attempt at wresting control over accreditation over training programs from university dominance. This process opened the door for a wholesale jurisdictional battle over the teaching profession which ended in a mounting de-professionalization of teaching and the promotion of alternative routes to certification by the federal government, a result most certainly at odds with the interests of both teachers and traditional university teacher preparation programs.

In 1992 teacher organizations interested in completing the professionalization of teaching articulated a proposal for a unified national system merging state certification programs and approval processes through the National Council for the Accreditation of Teacher Education (NCATE) (D. Imig and S. Imig 2008), a group founded by the NEA and a few other organizations in the 1954. This proposal was opposed by groups of college and university leaders under the leadership of the AACTE, another founding member of NCATE. AACTE created a rival accreditation group, the Teacher Education Accreditation Council (TEAC), who fought the NCATE proposal. TEAC sought to keep jurisdiction over the standards of teacher certification programs inside universities and to maintain universities ability to seek accreditation from the body of their choice in concert with state approval.

This conflict, as well as the promotion of alternative credentialing, was taken up to the federal level in the reauthorization of the Higher Education Act (HEA) in 1998 and ultimately in the teacher quality provisions of NCLB. The HEA which is primarily concerned with regulating Federal student aid programs was augmented in the 1998 reauthorization. In addition to

mandating the issuance of annual report cards detailing the passing rates for graduates on certification and licensure tests from each college or university teacher preparation program, the reauthorization encouraged states accepting funds from Title II of the bill to use the funds for reforming and raising teacher certification standards, as well as for promoting alternative methods of teacher preparation and routes to state certification, and in its initially proposed form would have required colleges and universities to have their programs accredited by NCATE (D. Imig and S. Imig 2008). Though ultimately, TEAC and its allies were able to get this last provision stricken from the bill's final version, the others remained. While NCATEs bid for a national system of teacher program accreditation and ultimately standards for certification was defeated, the promotion of alternative certification routes had found its way into federal law.

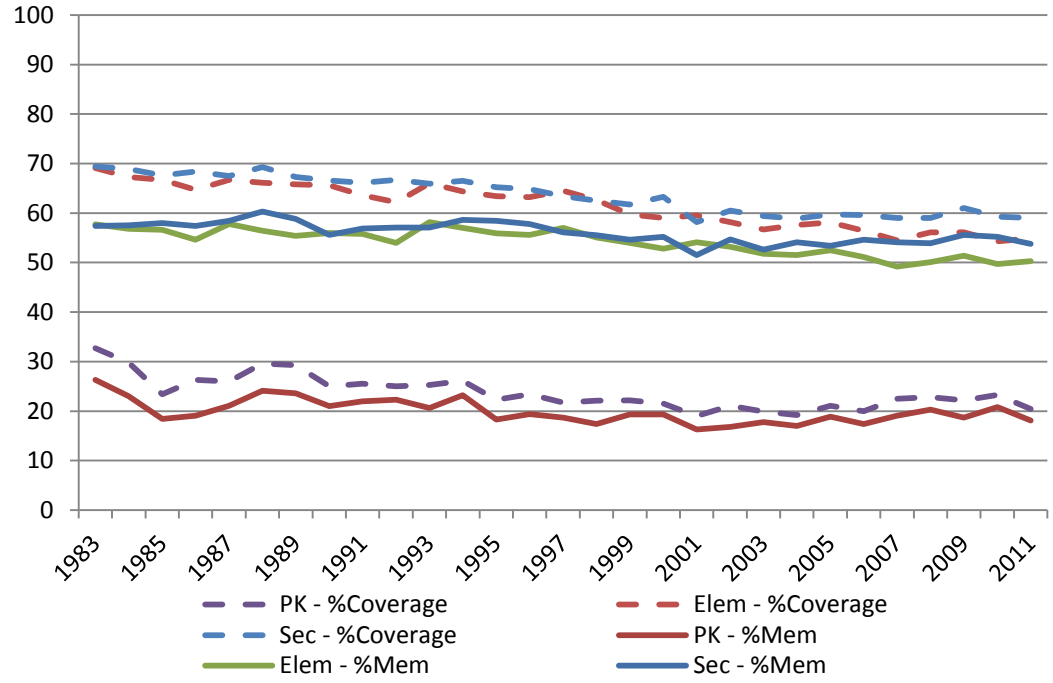
Federal involvement in the preparation of teachers was ratcheted up again with the passage of NCLB. The landmark reauthorization of ESEA influenced teacher preparation primarily through the Highly Qualified Teacher (HQT) provision in Title II. This provision required states to have 100% of teachers in core subject areas (English, Reading/Language Arts, Math, Science, Foreign Languages, Civics/Government, Arts, History, and Geography) deemed highly qualified by 2005; though this deadline was subsequently extended. The definition of "highly qualified" under NCLB requires a teacher to hold a bachelor's degree, be fully certified by their state, and to exhibit competency in the subjects they teach. The law leaves states to define the standards for certification as well as to craft the instruments for measuring subject competency (D. Imig and S. Imig 2008), but explicitly calls out alternative credentialing routes, including graduates of these programs as eligible for HQT designation (Feistritzer and Haar 2007).

The Bush administration also supported alternative certification through the funding of groups creating a new national alternative certification program (Feistritzer and Haar 2007; D. Imig and S. Imig 2008). The American Board for the Certification of Teaching Excellence (ABCTE) was created as a national organization with the intention of certifying teachers as "ready to teach" in any state without reference to individual state standards. This program takes prospective teachers holding a bachelor's degree who are able to pass a series of tests on language, teaching concepts, and subject matter competency and grants them a teaching certificate which states can choose to recognize as a full credential. ABCTE mounted an aggressive campaign on state legislatures and boards of education to gain acceptance, and a decade later is recognized in eleven states (D. Imig and S. Imig 2008). With start-up funding from the Federal Government, the creation of ABCTE marked a new high in federal intervention in the teacher preparation pipeline.

The attempt by at a mandatory national accreditation body for teacher preparation programs had failed as Federal actors stepped aside in the conflict between the university backed TEAC and the NEA backed NCATE. This lack of support served to maintain the status quo preventing the growth of the teaching profession into a national associational body. At the same time, more states began to approve alternative routes to certification that were frequently subject to different standards than the programs within traditional higher education. With the passage of NCLB, alternative routes to certification found explicit support and federal

legitimation, exemplified by the creation of ABCTE, and in 2003, the Bush Administration recognized TEAC as a rival accreditation body to NCATE further fragmenting the processes regulating teacher training. As alternative credentialing routes grew, so did a new conception of how teacher preparation might be organized that would de-professionalize the field and leverage market competition to choose teacher preparation programs.

Figure 3.13: Percent of Union Membership and Coverage by School Level



Alongside school choice, a related strand of education reform advocates were formulating policy ideas driven by the notion that the process of teacher training should be moved from a professional model characterized by a standardized body of knowledge, tests of mastery governing certification, and certification in turn regulating the possibility for employment, to a competitive model with alternative training methods developed, deployed and marketed with schools and districts as consumers ultimately deciding upon the success or failure of the various teacher preparation programs. While competitive certification is still far from a reality, the expansion of alternative certification that its advocates have been able to push has dealt a blow to both the university dominated system of teacher training and the national professionalization project being pushed by the NEA and affiliated organizations. Fostering the growth of non-traditional training routes with different training standards subject to the oversight of states rather than teacher organizations has put pressure on the profession of teaching by taking control over entry out of the hands of its members. But this is not where the jurisdictional battle over teaching ends. The assault on teaching as a profession has come as teacher unions have seen their strength slip.

The battle for control over the teaching profession, divided since the disputes between the NEA and AFT, settled with the rank and file teachers holding a power over administrators, though administrators remain a key part of the NEA. Both teacher unions opposed the expansion of school choice, charter schools, and alternative certification. Local battles between unions and pro-charter as well as other reform groups, sometimes in league with city executives have been fought in cities across the country (Henig and Rich 2003). These battles between teacher unions and anti-union reformers came when unions were at their weakest in years. Union coverage of the teaching profession had reached its peak by the early 1980's, and began a long slow decline in terms of both the percent of sector employees who are members and the percent of positions that are covered. Figure 3.13[16] above shows both union membership and union coverage percentages for primary, elementary and secondary school sectors between 1983 and 2011. Over the last thirty years, unions have lost ground in both membership and coverage. What's more, the gap between union coverage and union membership was steadily shrinking suggesting that union control over the body of positions in the field of education was declining faster than the decline in membership rolls.

As is evidenced by the mutual history of normal schools and common schools, control over teacher supply is closely tied to control over the supply of schools. Public school districts, long given complete control over the provision of local public schooling, have in most cases agreed to a collective bargaining agreement with a local or national teachers union enabling them to jointly determine the wage rates and allocation of teachers across public schools. As charter schools expand and district control over the supply of schools and the flow of students to schools loosens, the control over teacher supply that unions have maintained in concert, if not collaboration with universities, weakens.

Charter schools are specifically empowered by states to be free from collective bargaining agreements that districts have negotiated with unions. In some states charter schools have greater flexibility in terms of both the required credentials for teaching, and in hiring and firing teachers outside of union contracts. This position of charter schools as a buyer for teachers outside of the settled relationships governing credentialing and employment is another force corrosive to the settled institutional structures regulating teacher supply. Though union strength has not been found to have significant effects on the adoption of charter school legislation, the provisions in charter school laws lobbied for by unions stand in opposition to those considered to offer charters flexibility by charter advocates (Wong and Shen 2006). These schools, along with alternative credentialing programs are typically opposed by unions. Even in the case of the NEA, which has come out as supporting alternative certification in principal (Feistritzer and Haar 2007), a focus on the professionalization of teaching through creating, maintaining and enforcing uniformly high standards for certification shows their opposition to the competitive certification model that forms the conceptual foundation of many advocates of alternative certification routes.

[16] Data gathered from the Union Membership and Coverage Database using Current Population Survey data.

With unions gradually losing strength, and traditional teacher certification facing challenges from new alternative routes delivered by a variety of providers, the organization of teaching as a profession is changing. The professionalization project in teaching that had begun more than a century ago made significant gains in the 1980's and early 1990's as national associations pushed for nation-wide teacher credentialing standards, but suffered real setbacks in the late 1990's and over the course of the 2000's as universities fought for their position as the incumbent gatekeepers of certification programs and the ability to seek their own accreditation, the idea of national certification standards was defeated and alternative certification routes found federal support. As alternative routes to credentialing expand rapidly in some states, offering challenges to university departments of education, the stable and relatively uniform institutional configuration regulating the training and employment of teachers is fragmenting with multiple pathways into teaching becoming commonplace. As the programs preparing teachers fragment, the profession stands a crossroads. One cornerstone of a profession as status group, as an economic entity, and as an organization body with claim to an area of expertise, is the ability to regulate entry into the field through standardized and controlled preparation and certification. The expansion of alternative certification has begun to erode this cornerstone for teaching. At the same time, teacher unions which embody both the professional ambitions of practitioners, exemplified by the NEA, and the class interests of teachers, exemplified by the AFT, have seen their positions vis-à-vis schools districts become more and more tenuous.

These changes have real consequences for teachers and the profession as a whole, but also have reshaped the relationships between public schools and teachers. At the end of the 1970's public schools had little to do with the hiring, promotion or firing of teachers. Universities dominated teaching preparation, districts and unions bargained over pay and positions and, public schools took the teachers that the districts and unions assigned to them. With the expansion of schools outside of district control, the elaboration of new certification paths outside of the education departments, and declining union strength, some schools have both new flexibilities and access to new streams of personnel, and the organization of teacher supply has become more decentralized and control more fragmented.

Conclusion - Environmental Heterogeneity in American Schooling

The terrain of public education in the United States has changed significantly over the last three decades. The fight for equality in public schools has veered from approaches leveraging administrative control over student placement with forced bussing, to loosening control over student flows with voluntary integration policies on the one hand, and combining new instrumental criteria for student assignment with a new supply side intervention in the form of the magnet school. State governments have ramped up curricular standards and school accountability systems, putting in place processes for implementing sanctions on failing schools including staff replacement, conversion to charter schools, handoff to private management and closure. At the same time these states have developed integrated data systems capable of tracking student performance and behavior across schools in the state, and linking students to

specific teachers, expanding the state's capacity for output focused evaluation. Charter school legislation swept the nation ushering in a diverse new organizational population of schools and a growing set of non-public organizations managing public schools. What's more, the rules for these new organizations, as well forms of legitimate governance for these schools show wide variation across states. The variety in the legal environments in particular has meant increasing variation in the structure of the relationships between charter schools and key inputs, as well as in the regulations on their ability to differentiate themselves through curricular or pedagogical experimentation. Finally, the institutions structuring the supply of one of these crucial resources, teachers, changed as well. States increasingly turned to alternative certification routes expanding the number of teachers receiving credentials outside of university departments of education while the professional teachers associations, university interests, states and the Federal government jockeyed for control over the processes governing entrance into teaching, and the other major institution governing teaching supply, unions, were in the midst of a long slow decline in membership and coverage.

On top of state accountability policies, state charter school laws, and the expansion of state and local alternative teacher certification routes, NCLB created significant change in the federal role in public education. The 2001 reauthorization of ESEA expanded federal involvement in many aspects of public schooling including funding, accountability, and teacher preparation. As a whole, NCLB worked to transform the existing relationships between districts, schools, teachers, and students weaving the equity and effectiveness critiques of public education with the autonomy critique that spawned school choice and promoted alternative credentialing. The accountability regime set up by NCLB was an unprecedented centralization of programmatic and instrumental authority over public education. The principal of local control and the imperatives of political compromise prevented the complete centralization of programmatic and instrumental decision making. Instead, NCLB set up a nation-wide system for assessment of school level achievement, AYP, broken out by ethnic and socioeconomic subgroup, mandated that all students test at proficient by 2014. Each of these moves centralized key programmatic and instrumental decisions. At the same time, states were left to define proficiency standards, construct assessments, and set up a time line for reaching federal goals. In terms of punishments, NCLB attempted far more complete centralization through instituting a nation-wide menu of sanctions that it forced states to apply at specified intervals. Even as NCLB centralized evaluative control, pieces of the law fostered the development of increased decentralization of instrumental decision making into the market. The accountability system set up by NCLB wove market like reforms into the law in at least three ways: 1) through the expansion in both scale and scope of upstream activities while making their provision open to private sector organizations, 2) through forcing school choice onto districts with failing schools, and 3) by supporting the growing efforts at circumventing traditional teacher certification through the HQT provision's legitimation of alternative certification.

Taking these changes as a whole reveals an image of a shifting landscape of forces buffeting schools. I contend that the changes I've discussed in this chapter have remade the organizational field of public education in a few key respects. First, when considering decision

and evaluative control over public schools, the locus of centralization has increasingly shifted from local authorities to state and federal authorities and this locus is increasingly pulled back and forth between these two sets of governing organizations. Second, this centralization has resulted in two changes that have set fundamental field changes in motion. On the one hand, centralization allowed State and Federal Governments to shift the primary mode of evaluation from structural and to a lesser extent process controls to output controls. On the other hand, with the passage of charter school laws, and the spread of alternative teacher certification, increasingly centralized power in public education has taken the form of radical decentralization of first order instrumental decision making regarding school supply and with it the allocation of students and the preparation of teachers. Fourth, a structurally diversifying organizational field has seen the growth and expansion of new kinds of public schools subject to different sets of institutional demands, and by virtue of their different resource dependencies and instrumental controls, has put pressure on districts to change their behavior in terms of the operation of administrative control over traditional public schools. Finally, from the perspective of schools, this process has not only changed the relationships between schools and various governing authorities in the field but also their relationships with one another.

Centralizing Control

Since its beginning, the development of the public education sector in the United States proceeded in a relatively unusual manner when compared to other Western nations. In many of these countries, public education had been historically elaborated as a function of the national government and followed urbanization (J. W. Meyer 1983; Ramirez and Rubinson 1979). In the United States on the other hand, public school systems grew out of disbursed social movements and remained largely outside of state control until at least the passage of compulsory enrollment laws in the late 19th and early 20thcentury (J. W. Meyer et al. 1979; Tyack 1974). Even then, the involvement of state governments was limited and largely revolved around curriculum and teaching standards which had grown out of the professionalization project of teachers and the transformation of normal schools into more familiar institutions of higher education (Sedlak 2008). The organization and control of public schooling remained disbursed and local with instrumental, programmatic and funding decisions all sitting with local school boards overseeing districts generally organized by municipal or county governments. Schools were funded by taxing authority at these levels though sometimes districts were granted the power to levy taxes themselves rather than relying upon municipal or county governments. Despite no federal level and little state level involvement in public education before the mid-20th century, school districts continued to merge, combine schools and create more rationalized structures (J. W. Meyer et al. 1988) mostly at the behest of progressive reformers who wanted to separate the organization and administration of schools from the political control of local communities by importing organizational models from the corporate world (Charles Taylor Kerchner et al. 2008; Tyack 1974). Control over schools was exerted primarily through structural and process means with districts making sure schools organized learning according to accepted models including specified grade structures, teacher credentials and curricula. Just before the advent of desegregation, public education was controlled by local

governments and administered by increasingly unified districts. Funds came from local sources and virtually all decision making and control decentralized to the local level, with little federal or state involvement in anything but compulsory enrollment and teacher certification in concert with the professional bodies.

After the Civil Rights Era, desegregation and the assertion of programmatic authority by the Federal Government on the newly legitimated appeal to racial equality began a process of forced change in the relationships between families, schools and districts (Kantor and Lowe 1995). The growth of federal funding was used as a lever to coax reluctant districts and schools into changing their administrative operations with regard to the distribution of students across schools toward the new programmatic goal of equity (Cascio et al. 2010). While ostensibly authority regarding the distribution of students rested with districts, the Federal involvement in desegregation proceeded through tying Federal funding to adherence to structural and process controls that mandated integration. As the centralization of funding decisions proceeded following desegregation efforts, the number of federal programs funneling money to districts and schools multiplied. In a process Meyer referred to as "fragmented centralization" (J. W. Meyer et al. 1987; J. W. Meyer 1983), funding control was centralized but fragmented with many parallel processes and organizations controlling funding distributions.

In the wake of the centralization of funding and programmatic decision making accompanying the dismantling of segregation in public schools led by the judiciary and the Federal Government, control was again moved, but this time from the Federal Government to the states . With the shift to the political right accompanied by the election of Ronald Regan, the Federal Government sought to limit its role, pushing decision making to the state level (Iannaccone 1988). The locus of centralization had shifted to states which exerted increasing control over public education. While before desegregation, states had little involvement in public education, after desegregation, the federal government pushed funding decision making back to the states by bundling federal money and sending it to state governments for distribution (Askins 1984). The subsequent shift of federal involvement in the resource environment of schools from direct relationships between the federal and local or even school level to reliance upon state government as mediators changed the character of this fragmented centralization by shifting the locus of centralization from the Federal government to the state and reducing the fragmentation in authority due to the relatively unified character of individual state governments. The newfound decision control over funding enjoyed by states was extended to programmatic aspects as governors and state legislators, pushed standards-based reforms throughout the 1980's and into the 1990's (Toch 1991). Control continued to be centralized in the halls of state capitols until the passage of NCLB which moved programmatic and some instrumental decision control back to the federal level.

The results of the move to effectiveness as a motivating rationale for governance of the sector along with decision control centralized at the state was a wave of accountability legislation which changed the character of the primary means of evaluative control from structural congruence and to lesser extent process standards, to output measures. This shift was only reinforced with the passage of NCLB and the shift in locus of centralization from state

governments back to the Federal Government. For a sector focused on structural and process controls since its very origins, this move has sparked deep changes in the field.

Shifting Evaluations

As long as the evaluation of organizational legitimacy is based upon congruence with structural features (i.e. the organizations exists in an environment characterized by strong institutional demands), we would expect the shift in centralization and the attendant, though not necessary, decrease in fragmentation to produce less elaborate administrative structures, but organizational behavior still oriented towards compliance with categorical schemas (J. W. Meyer 1983). To the extent that the criteria for evaluation of structural controls are different across governance units at a particular level and the strength of demands are concentrated at this level, organizational responses will be heterogeneous across the boundaries of these governance units, but within them organizations will tend toward structural homogeneity.

The shift accomplished by accountability legislation was a move to coercive output controls. Political framing of public schools as ineffective inspired accountability legislation which moved normative legitimacy from congruence with accepted models of organizational integration and formal relationships, to concern with technical measures of output. If legitimacy (regulatory, normative, and cultural) rests on output controls alongside congruence with formal elements defining personnel categories and credentialing, the organizational dynamics change. To the extent that evaluation rests on output, organizations will monitor product quality in order to ensure adherence to the standards set by the relevant authority. In fields with highly decentralized decision making regarding inputs, this authority is the market, in the case of public schools, this authority is State and Federal Government.

Schools and districts faced with sanctions under accountability rules find that their typical organizational strategies of administrative elaboration and categorical conformity no longer suffice to maintain legitimacy. Responses to adding or changing evaluative controls vary depending upon the existing mix of structural, process and output controls. While there has not been a lot of attention to the interaction of structural and output evaluative control, in instances of simultaneously strong structural and output controls, we expect organizations to attempt to leverage existing categorical distinctions in order to shift output measures. For example, banks strategically use asset reclassification for “earnings management” (Kholmy and Ernstberger 2010), or in the case of districts and schools, we see attempts to strategically alter test scores by reclassifying students to raise or lower performance of the student body as a whole or a particular group of students through altering the testing pool in order to avoid or lessen sanctions under the group based accountability rules (Figlio and Getzler 2002).

We’d also expect organizations to place increasing emphasis on worker performance or other technical aspects of organizational competency. In schools and districts this has often played out as focus on aligning output with evaluative instruments, i.e. teaching-to-the-test, and sometimes the implementation of teacher value added measures which attempt to measure the individual teacher contributions to output in the form of increased student

achievement on state tests (McCaffrey et al. 2004). This could also take the form of less standardized measures of teacher performance such as administrative evaluations based upon observation or student input. The ability of organizations to implement output control measures on workers is however contingent on the status of the work. To the extent that the work is professionalized, and employees are members of associational bodies of the profession, the ability of organizations outside of the profession to evaluate work can be challenged on the basis of expertise. This is of course the case for teaching in which unions have been staunch opponents of value added models for teacher performance, but it is also the case in other fields during shifts in evaluative control. For instance, in the area of health care, the American Medical Association has asserted that Health Management Organizations should not be able to intervene in the relationship between doctor and patient by deciding which patients receive which services, or by monitoring the amount of services that specific doctors provide to their patients (Colby 1997).

The central concern of accountability legislation in public education was measuring the performance of schools and districts and coercively punishing those not falling in line with the state's expectations. While coercive accountability is enforced by the application of sanctions on the part of governing authority, school choice advocates had a different sort of accountability in mind when they advocate for the freedom of students and families to change public schools at will without moving residences. Market accountability involves output control as an evaluative mechanism as well, but decentralizes authority over assessing the results of evaluation to distributed groups actually consuming the organizational product, and empowers them to enable sanctions through exit. In the case of public schooling, policy makers have attempted to inject market accountability into the system by decentralizing the supply of schools, and loosening the established approaches to administration allocating both students and teachers to schools.

Decentralizing Supply

At the same time that states were leveraging centralized decision control to implement a shift towards output evaluation, they were passing charter legislation and "charters and choice" became the rallying cry of an increasingly powerful alliance of education reformers. Similar to the early 20th century Progressives (Tyack 1974), contemporary autonomy-minded reformers also want to distance schools from political control (Chubb and Moe 1990b); however, rather than seeking to create administrative structures and systems staffed by professionals, capable of separating schools from local communities, these reformers have generally advocated both radical movement of administration out of the hands of districts and back to individual schools (Chubb and Moe 1990a), and the creation of alternative routes of teacher preparation that by pass incumbent professional bodies including the organizations governing preparation, and those governing employment .

Most of the organizational sociology examining public education has focused on the relative power held at various levels of authority, local, state and federal. The enactment of charter school legislation introduces a degree of decentralized governance that this body of

work doesn't frequently consider. Even work on private schools has focused on Catholic schools which are subject to direct administrative control by diocese, which, like districts, are extra-organizational governing bodies (W. Richard Scott and J. W. Meyer 1988). In addition, the decentralization begun with the passage of charter school laws is not only focused on instrumental decisions in terms of organizational operations, but also the first order instrumental decision of organizational founding, a process which has primarily been considered in the context of private sector organizations (Hannan and Freeman 1993).

For public schools, founding decisions are generally the purview of local district authority. In states that allow charter schools, decisions about school supply have, to varying degrees, been taken out of the hands of districts. While the range of potential charter school authorizers varies from state to state, generally local district school boards are the first authorizing agency (J. Murphy and Shiffman 2002). To the extent that a district school board is allied with the district administration (which is by no means a given), districts have little incentive to allow charter schools, as these schools simply compete with districts for state and federal resources. Often charter school laws provide for an appeals process in which applicants can take their proposals to county and state education boards in the case a local board denies an application. With an appeals process in place, decisions regarding the supply of schools are moved from being in exclusively district hands, and into the hands of private organizations and individuals.

With the passage of charter school laws, states pushed decision making on school supply down past districts and outside of established authority structures. In the case of teacher supply, states legitimated new avenues of certification, in the process encroaching on the jurisdiction of the dominant associational bodies of the profession. Before the spread of alternative certification routes, university departments of education controlled teacher preparation programs, and were the only legitimate routes to becoming a teacher (D. Imig and S. Imig 2008). As alternative routes to certification expand, the control that universities departments of education have over the gates to teaching is slipping, and the coherence of teaching as a profession with a relatively standard training process is eroding. Typically, the literature has described decision making under conditions of professionalism as decentralized.

Meyer and Scott (1991) suggest that the more professionalized a particular area has become, the more decentralized instrumental and programmatic decision making will be. The logic here is that professionals maintain jurisdiction over these decisions, preventing other authorities from exerting control over professional work. The characterization of this state as decentralized however is somewhat misleading. The professionalization process of the field itself can be described as the centralization of jurisdictional control over a specified area of work, and over entry into the field, as well as the establishment of an independent monitoring associational body that allows programmatic and instrumental decision making to be decentralized to individual practitioners.

Professional associations enable individual practitioners to make programmatic and instrumental decisions free from control of other authorities. The maintenance of professional

boundaries requires a degree of centralization of control over the supply of professional training in the hands of an independent associational body. It is this centralization of control over the supply of professionals that changes with de-professionalization of a field. This is why new groups of practitioners are vociferously opposed by incumbent professionals. The case of alternative certification routes is no exception, as alternative routes were opposed by the primary professional bodies which in this case are also unions, and the institutions controlling the professional preparation programs, university departments of education. In this case however, the process of decentralization of supply was begun by governance authorities including districts and state education departments, and continued by an expanding field of private organizations.

The final aspect in which supply has been decentralized is the increasing amount of financial support districts receive from private foundations (Reckhow 2010). This was not accomplished through the transference of authority from the state to private organizations, but instead through the continued commitment by the Federal Government to use state governments as mediating authorities. With the Federal Government funneling money to states for dispersal to schools and districts, the decision control on funding was increasingly concentrated at the state level. At the same time, private foundations were flush with money and, inspired by the idea of school autonomy from districts as a solution to persistently underperforming schools, began to fund "innovative" districts, charter school operators and alternative certification and teacher recruitment programs (Reckhow 2010). Between 1998 and 2010 giving by private foundations to elementary and secondary education doubled from just under $2.5 billion to nearly $5 billion[17]; though the proportion of total foundation dollars issued via grants to elementary and secondary education remained steady at about one quarter over this same period. This makes up probably less than 1% of the total revenues of elementary and secondary public schools in the United States[18], but is highly focused on large urban districts willing to experiment with administrative reform, on charter schools, MOs and provider networks as well as on alternatives to traditional teacher recruitment training and certification. The increase in foundation giving to elementary and secondary education provided a small but significant shift in the concentration of funding decisions from the state to organizations outside of the purview of public governing organizations in the field of education.

This federalization of funding decisions through the relative decentralization of funding to the "market", the decentralization of school supply and instrumental decision making, and the diversification in the supply of teachers when taken together amount to significant changes in the organizational environments of both districts and schools. Even as evaluative criteria shift towards output measures, the emergence of charter schools creates a new local organizational population subject to a different set of rules and resource relationships. At the same time,

[17] These figures come from data published by the Foundation Center: http://foundationcenter.org/findfunders/statistics/gs_subject.html

[18] This figure comes from comparing data on foundation giving from The Foundation Center and data published by the U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), in their "National Public Education Financial Survey: 1990–91 through 2008–09".

states continue to ratify alternative certification routes, and entry into teaching becomes decentralized. These changing pressures offer unique challenges for both schools and districts.

From Managers to Owners - District Transformation and the Portfolio Management Model

Each major change in the system of public education has been accompanied by the creation of a new set of schools or schooling programs designed to exist alongside the old. Public schools themselves were created as an alternative to private education, magnet schools as an alternative to traditional public schools and charter schools as an alternative to both of these. The population of schools serving families in urban districts looks increasingly diverse. Districts are increasingly characterized by a range of schooling options including private, traditional public, magnet, and charter schools pursuing a wide variety of specialized pedagogical approaches and curricular agendas.

These districts are undergoing a transformation from highly standardized, administrative models with centralized control over a large degree of school level policy, rooted in Progressive era ideas of scientific management (Kerchner et al. 2008) to a model based upon increasingly indirect district involvement, the Portfolio Management Model (PMM). This new model of district-school relationships suggests that school districts should be involved only in opening/authorizing schools, implementing and operating a school level accountability system, evaluating the performance of schools using this system, and making decisions about closing or restructuring schools which don't meet performance expectations (Peterson and M. R. West 2003a).Though the specifics vary widely the basic elements of the PMM are clearly present in major urban school districts including Chicago, New York, Philadelphia, New Orleans, Baltimore, Oakland, Washington DC and Los Angeles (Bulkley 2010).

The changes in education policy at the Federal and state levels over the course of the 2000's have resulted in increasing organizational change, including, at least in theory, in decreased administrative elaboration at the local district level, particularly in large urban districts. As an administrative model, the PMM is designed to work with state and Federal focus on accountability, the supply side interventions of charter school legislation and those mandated by NCLB including PSC, and the regulatory legitimation of charter school conversion and private provider handoff. Under this model of district management, districts attempt to maintain a balance of schools of different types through focusing on decisions about who should operate schools, and which schools should be closed or restructured while expanding school autonomy by pushing instructional decision making to the school level, and encouraging market discipline by increasing parental choice (Henig 2010). In practice, this model has unfolded in different ways from district to district. Often districts maintain traditional district operated public schools with residence based attendance areas, while encouraging the spread of charter schools and contracting out operation of a portion of schools to MOs.

The combination of state accountability regimes and charter school expansion heightens evaluative control over schools and districts while pushing instrumental control out of the

hands of the district and into the hands of the school. It's no wonder that in many areas districts oppose the expansion of charter schools. In urban areas with charter school expansion, these power dynamics make a class of schools less dependent upon districts for resources particularly important for the balance of the organizational system. Not only are some charter schools not dependent upon school districts for funding, nor subject to their programmatic or instrumental authority, these schools are able to tap into a newly legitimate stream of teachers coming from alternative certification routes in tenuous relationship with the governing bodies in the profession (Huerta and D' Entremont 2010; Reckhow 2010; J. T. Scott and DiMartino 2010; Wohlstetter and J. Smith 2010), and in some cases un-certified teachers previously relegated to the private school market exclusively (Burian-Fitzgerald, Luekens, and Strizek 2004). Districts may be at a disadvantage vis-à-vis charters in terms of their dependency on an organized body governing relationships with teachers, but it opens up the possibility for districts to use the expansion of charters as leverage with unions in negotiations over the relative power of administrators and teacher employees at their schools.

Schools depend upon districts for resource distribution including students, funding and in concert with unions, for staff. States governments have shifted this one way resource dependency of schools on districts by creating a new class of schools which are legally empowered to operate outside of district administrative control, and union governance of teachers. In the context of coercive accountability, if not through actual closures, through the specter of PSC, of PI and of the intrusion by outsiders on the administrative jurisdiction within both districts and schools, districts faced with being responsible for the performance of the schools under their direct administrative control including student attendance boundaries, access to most local, state and federal funding and along with unions for professional labor, are in competition with organizations subject to less elaborated structural-evaluative (institutional) demands, and a different set of resource dependencies and exposure to the market, i.e. to the enrollment decisions of families. In the context of a coercive output-oriented evaluative regime, the hand off to charter operators of poorly performing schools allows districts to maintain control over student allocations while severing ties to the costly administration of personnel.

Resource dependency is a two way street however. Districts are dependent upon the management of schools as a rationale for their organizational existence. The modern unified school district as an administrative structure grew out of the Progressive era reform of decentralized schooling. The mutual dependence of districts and schools upon one another is easy for districts to bear when the relationship is also characterized by a large degree of power imbalance. With the decentralization of their authority as the sole provider of public schooling by an increasingly centralized state, districts have seen the power imbalance in the relationship between districts and schools shift from a state of dominance to one of less power over the instrumental decisions and increased imperative to produce measurable achievement gains. Regardless of the degree of district dominance over the charter approval process, districts are held accountable for the performance of their schools. In cases of chronically underperforming schools, districts may have incentive to hand off these schools to charters or private

management to bear the costs of failure in an era of shifting evaluative bases for regulatory and normative legitimation.

Districts also exist in a resource dependence relationship with teacher unions. The relationship between district administration and the teacher unions is characterized by a high degree of mutual interdependence and variable degrees of power imbalance. In localities in which districts are relatively dominant, the possibility of busting unions via charter school expansion is less appealing given the costs in relative loss of control over schools. It's possible that the relative weakness of unions in Southeastern states, excepting Florida, made advocates less likely to seek flexible charter school legislation, legislatures less likely to pass flexible legislation, and districts less likely to allow charter school expansion due to their relative strength in local relationships of dependency on labor groups. In places where there is little power imbalance but a high degree of mutual interdependence on the other hand, districts may be able to gain an advantage over unions if they can maintain legitimacy while handing off failing schools to charters particularly in the context of a diversifying array of paths into the profession.

Finally, the increasing interest of private foundations in funding administrative reform in line with the principals of the PMM, offers districts the possibility of increased resources and less direct cost. The increasing amount of capital at the disposal of private foundations, and the heightened interest on their part to fund autonomy oriented reforms, has provided districts with the possibility of getting a valuable stream of additional capital, and access to a growing network of organizations connected to one another via foundation giving (Reckhow 2010). These networks include large CMOs, alternative teacher certification programs, and other urban districts. Through its Urban Residency in Education, The Broad Foundation, one of the larger funders of diverse provider reforms, provides management labor as well. This program places M.B.A's in funded positions within CMOs, school districts, and state/federal departments of education (Anon 2012). To districts facing budget short falls, accountability uncertainties, and competition from private MOs, the prospect of two key resources in the form of funding and administrative expertise in the face of an increasingly adverse environment seems hard to resist.

One possibility is that in places with expansion of charter schools, districts respond by adopting the portfolio model due to its capability of both executing the coercive competition model of the accountability system and severing direct resource dependencies with new classes of schools by diversifying the degree of autonomy over input and output decisions allowed to various types of schools. There is evidence that districts also adopt these models in order to secure needed funding from powerful foundations interested in the "diverse provider" model (Reckhow 2010). By moving towards a portfolio model, districts can appear innovative, implement the state accountability system's authority, leverage the flexibility of charters in negotiations with unions on teacher personnel decisions, and gain a competitive advantage in terms of access to private money, administrative staff, and access to a quickly coalescing field of venture philanthropists and the organizations they fund.

As the transition to PMM takes on local forms in large urban districts across the United States, the heterogeneity of organizations within these districts continues to increase. Organizational environments faced by schools in these districts are rapidly diversifying in terms of the characteristics of the local relationships between schools, their students, employees, and governing organizations, i.e. the local terrain of resource and authority relationships. In addition we see a diversifying population of schools with variable autonomies including, differing degrees of freedom from district administration of funds, student allocation, teacher control and organizational autonomy over instrumental decisions regarding the structure and content of curriculum and pedagogical practice, i.e. the school's product. Not only has the terrain of the environment faced by public schools become more varied, populations of new organizational animals with varying competitive advantages continue to spread.

Welcome to the Jungle – The New Institutional Ecology of Schools

The tradition of local control has been supplanted by state and federal involvement in local education systems; although paradoxically this centralization has served to introduce more heterogeneity into local education markets than previously. Neoinstitutionalists marveled at the homogeneity of the structural properties of schools in a federalized system noting that even in the face of such federalization, schools have faced very similar institutional demands and have similar buffers against the technical demands of their environments (J. W. Meyer and Rowan 1983). While sociologists often think of centralizing power as a homogenizing force, this is a case in which the movement of the locus of power from the local level into a vacillating position between the state and Federal governments has had a diversifying effect on the local environmental aspects most salient to the organizational life of schools. The combination of increasingly centralized and "federalized" power (i.e. movement toward concentrated power in the sates), and the decentralization in the supply of school teachers and funds has changed the institutional environment, authority structures, and resource dependencies faced by schools. With both accountability and charter schools, the control being exerted over various types of schools in the field combines homogeneous coercive output controls (which are technical demands but are not competitive demands) across types of schools, with variable degrees of structural-formal control (i.e. fractured institutional demands), and varying degrees of decentralized competitive demands in terms of student enrollment, and staff recruitment. Viewing the field of public education from the perspective of the school, we can see key changes in resource dependencies and competitive pressures faced by schools. First, these changes have shifted power imbalances between districts and schools in the favor of schools, second they've opened up the possibility for direct competition between schools for resources. Finally, the fact that these changes have focused on decentralization from the district level and evaluative shifts has created increasing heterogeneity across local settings in each of the three key relationships they schools face: 1) their relationships to managing organizations 2) their relationships to key outside suppliers, and 3) their relationships to one another.

The centralization of funding decisions in state governments, in terms of direct funding of elementary and secondary public education and managing access of schools and districts to Federal money, by itself has little impact on the organization life of schools. It makes districts

more dependent upon state governments and gives the state more power their relationship with districts, but if this were the only change, public schools would still be beholden to districts for access to funds and their relationships would be heavily imbalanced in favor of districts. This centralization of funding decisions along with the decentralization of instrumental decisions by the state, creating the opportunity for a new class of schools with varying autonomies from district control, however does shift the character of resource dependencies between schools and districts significantly. With both of these changes in place, a new class of schools has the opportunity to bypass district control over funding streams with direct access by these schools to state funds. Even for traditional public schools, the simple possibility for conversion to a charter moves the power imbalance in the favor of schools to some degree. At the same time, the shift in evaluative control from structural congruence to output performance has made districts even more dependent upon the performance of the schools they manage for legitimacy, and puts increasing pressure on districts as these processes are much more difficult for districts to effect directly than program elaboration and certification management.

In addition, the expansion of new organizational populations of public school management organizations, a space previously monopolized by districts, the growth of alternative streams of teachers outside of direct dominance of professional associations, and the ongoing elaboration of fields of upstream and downstream organizations including foundations, and the "diverse provider" organizations they support, has created new steams of resources that schools have varying access to. The expansion of these new streams has given schools with access to them greater power over their direct inputs and consequently more room to maneuver the political environment of their relationships with managing organizations. With the expansion of charters, differing schools are subject to wholly different resource dependencies including not only the structure of these dependencies in terms the specific organizations holding authority over them i.e. MOs, districts and/or states, but also in terms of the character of their dependencies.

Generally, organizational scholarship on public schools has focused on vertical relationships between organizations in the field. This is for obvious reasons. Schools were wholly dependent upon districts for administration and could only compete for resources through organizational politics. In this context, the relationships between local public schools are wholly mediated by their relationships with the school district. By opening up the supply of schools, states have seized jurisdiction over local schools from districts and altered the power imbalances between existing schools and districts. By opening up the supply of teachers, states have done the same from unions and professional associations, altering the power imbalances between schools and their key labor input. As described above, this has changed the relationship between, what were from the perspective of choice advocates, the rock and the hard place faced by schools, districts and unions respectively. Finally, private groups have funded and organized a network of policy advisors, legal advocates, managerial and teacher recruitment and training, and administrative professionals including both educational professionals and business administrators supporting new classes of schools, and not necessarily on the basis of performance (Coulson 2011).

The fact that these institutional changes, directed by the state, were accomplished through the creation of new organizational populations has created heterogeneity in the character of resource dependencies between various types of schools, their managing organizations, and the state. The existence of heterogeneous organizational environments across groups of schools in local educational settings has created a field with increasingly varied terrain features. In some local markets, it's possible to find schools with widely varying degrees of power imbalance vis-à-vis their district or managing organization, and variable access to private money, to direct funding from the state, and to a growing pool of non-union, alternative and even uncertified teachers. Though the vertical relationships between schools and a diversifying array of managing organizations is important for understanding the behavior of schools, with decentralization via lowering of the barriers to entry in the field, the relationships between units at the lowest level have also been altered directly. Even as we see heterogeneity in the relationships between schools and their direct governing organizations, these schools increasingly compete with one another for the same focal resource, students.

One of the central ideas of school choice advocates, including both charter school and voucher supporters, is the notion that public schools should not be protected from competition for students (Friedman 1955). The notion that competition might prove to be a valuable lever for inducing change in public schools is a powerful one which has gathered an increasing number of adherents. The idea that school choice will lead to competition, and ultimately to school improvement, springs from economic theory which criticizes traditional, residentially based public schools on the grounds that public schools have no impetus to improve, nor to respond to the interests of the children and families they serve. If the supply of schools is decentralized and barriers to switching schools are reduced, demand will spur the creation of a diverse set of schools and families will be able to choose the public school that best matches their own educational philosophy, as well as the educational needs of their children. School choice advocates suggest better student-school matches should raise achievement across the board, but in addition to this, public schools, particularly those serving communities less capable of residential mobility or defection to private school, will face increasing competition for students forcing them to be more responsive to the interests of students and their families.

It's difficult to know the extent of competition for students in local education markets (Betts and Loveless 2005; Ni and Arsen 2010). Charter schools are designed to create student turnover in public schools, but the ability of charters to attract students is likely a function not only of: 1) the school's specific autonomies (funding, admissions, pedagogy, curriculum, personnel), and 2) product strategy, and quality, but also 3) the types of schools serving the charter's pool of possible students, and 4) characteristics of these students. First, the specific autonomies a school enjoys will shape its market position. Diverse local organizational ecologies include varying mixes of charter schools, traditional public, magnet, other semi-autonomous public schools, and private schools. With the ability to offer tuition free education to students in any neighborhood in the district[19], and autonomy in instrumental decision making, independent start-up charters can offer traditional public school students a possibility

[19] In some instances conversion charters must offer the residents in their pre-charter catchment area enrollment.

for exit and the lure of specialized curricula. Conversion charters on the other hand are typically not free from administrative enrollment boundaries, and have widely varying degrees of autonomy from districts or MOs. These various autonomies and constraints shape organizational behavior and the ability or need to compete for students.

Second, the balance or imbalance and diversity of organizations in the local ecology serving a student population will condition a school's ability to attract students and strategic behavior to this effect. For instance, in cases of charters with instrumental autonomy, location decisions, and decisions concerning specialization and marketing to students (strategic specialization or a better executed version of the traditional public school) will be effected by the surrounding set of organizations, their perceived quality, and the students they serve. Markets for goods in which quality is difficult to assess give leverage to suppliers as the value of their products is uncertain. The heterogeneity of education in terms of consumer beliefs about what constitutes a quality education not only reinforces the large number of dimensions along which schools can differentiate themselves, but also makes the systematic appraisal of educational quality at the school level extremely difficult, further increasing the market power of specialized schools. Charters may seek to use this competitive advantage in terms of niche creation and claims to legitimacy in absence of quality. The ideal-typical charter school of the autonomy and choice advocates, locates in areas underserved served by traditional public schools. In areas served by low performing and overcrowded schools, their ability to offer an alternative to local traditional public schools, could offer promising enrollment prospects. On the other hand, if the charter operator questions its ability to outperform local schools, other local ecologies may be more enticing. For example, one study found the number of private schools in a district positively associated with charter school foundings (Renzulli 2005), and there is at least some evidence of competition between Catholic schools (Lackman 2012) as well as other private schools (Chakrabarti and Roy 2010) and charters in certain localities.

This example highlights the third factor structuring the competitive environment a charter might face. The student population in a given local area may be more or less likely to leave their current school. Some families struggling to pay private school tuition may switch to charter schools in order to eliminate tuition costs, if the charters are more appealing than their designated traditional public school. CMOs offering specialized curricula or professing to be college preparatory could be attractive to these families even in the absence of reliable quality indicators if they can make a claim to legitimacy based upon other product or organizational qualities. There have been numerous studies looking at how family and neighborhood characteristics influence the likelihood of exercising choice (Bulman 2004; D. L. Lauen 2009; L. L. Lauen 2007; Lee, Croninger, and J. B. Smith 1996; K. J. R. Phillips, Hausman, and Larsen 2012; Saporito and Lareau 1999). Generally, these studies have found that disadvantaged groups are less likely to exercise choice. Low-income and minority students have less information about school choice options, less information about school performance, and are less able to negotiate educational bureaucracies. Furthermore, regardless of the propensity of a given pool of students to leave their schools, the extent to which schools respond to various measures of performance on the one hand, and to product differentiation or marketing on the other is not

well understood. If increased choice induces competition between schools, schools with poor quality are likely to lose students to those with better performance. The most essential argument for the expansion of choice posits that it will enable students assigned to overcrowded schools, those with high student to teacher ratios, or old or otherwise poor facilities to escape these sub-standard schools.

However, this logic seems to go against what we already know empirically about the propensity of disadvantaged groups to exercise choice, and assumes that students and families will actively choose to attend more effective schools as measured by the state testing system. The move to output centered evaluation as source of regulatory and normative legitimacy begs the question as to whether, to what extent, and when students and families make choices on the basis of achievement, and consequently, the conditions likely to produce competition spurring testing gains in a field with a product having diverse value aspects not amenable to measurement. Ultimately, the calibration of market and coercive accountability may be more or less aligned depending upon the values of students and families[20]. In either of these cases, differences between schools in the autonomies they are afforded, and the attendant differences in the uncertainties they face in resource streams, as well as the differences in their local market dynamics will structure the extent to which they will be more or less attentive to any competitive pressure that exists.

While it is generally assumed that charter school operators will see themselves as in competition with other schools for students, the question remains as to the extent to which public school administrators see themselves as in competition with other schools. This raises questions as to how or if these schools will respond to competition even if competitive pressures exist. Even if they do, it's not clear what organizational strategies are left to district managed schools to respond to competition from charter schools, or private schools before them. One such strategy may be charter school conversion. Traditional public schools in states with permitting laws have the option to gain varying degrees of autonomy from district control through conversion. Typically, these schools are given autonomy in terms of instrumental decision making, offering control over curriculum and pedagogical practice. On the other hand, these schools have less flexibility in terms of input differentiation, particularly with regard to students. These schools are often required to accept enrollment from students in the catchment areas they served before conversion. The funding models and dependence upon districts for teacher placement and other administrative tasks vary amongst conversion schools. In some cases, schools convert to a charter and gain autonomy only in terms of process and instrumental decisions regarding product/output relying upon the district for funding allocations, and governance of personnel. The specific direction a school might take in terms of its various autonomies from resource dependencies and administrative control may be related

[20] More generally, in the context of strong institutional demands focused on output control, and technical demands ratcheting up through the decentralization of key resource supplies, if supply flows are allocated according to different criteria than those forming the basis for assessment of output by authorities, we would expect struggles to emerge between the ultimate consumers of organizational output, and the producing organizations on one side, and the authorities enforcing coercive accountability on the other.

to not only district politics, but also to other schools in the ecology and to characteristics of the student pool. For example, schools in high income or high status neighborhoods faced with competition from independent charter schools or private schools may choose to convert to a charter in order to gain instrumental autonomy over curriculum, but remain within the district administrative control over student allocation, funding and personnel, and maintaining access to a high resource student body, district negotiated categorical funding and a district provided human resources system.

This example highlights how local market dynamics shape the relationships between schools and their districts as well as direct competition between schools. With the elaboration of a field of alternate management and resource streams, and the enactment of charter school legislation enabling access, schools have the option of pursuing various strategies vis-à-vis their managing organizations. The ability and interest of schools to pursue various levels of autonomy from external administrative control over key decisions, including conversion, will be conditioned by local market dynamics. The competitive dynamics between schools, both public and private, shape the political and resource costs borne by schools of fighting for and exercising these various autonomies. At the same time, the extent of competition in any given local market will be shaped by the institutional structuring of available autonomies and the local power dynamics enabling or constraining market behavior by schools and families.

Over the last half century, the organizational field of public education has seen significant changes at every level. From the perspective of schools, significant autonomies have shifted the stable power imbalances favoring the district. At the same time, the decentralizing supply of key resources and lowering of barriers to entry for private organizations into the market of public schools has created the possibility for competition between schools over students, teachers and funds. These processes have created an increasingly heterogeneous field. In a field once characterized by uniform institutional demands and locally managed resources, allocated through unified administrative control, we now find private management organizations, diversity in the resource dependencies between schools and districts/MOs, a newly emergent field of private funders and associated organizations, and varying degrees of competition between schools.

Crisis, Institutional Change and Organizational Dynamics

Meyer, Scott, Rowan and others famously argue that rationalization is not only a process of Weberian means-ends connection in organizational processes, but also crucially the construction of organizational myths providing justifications of purpose and process, in a word legitimacy (J. W. Meyer and Rowan 1977; W. Richard Scott and J. W. Meyer 1991). Following others (Blyth 2002, 2008), I've argued that the multiple and consecutive crises in public education provided rationale for deep institutional change including the restructuring of authority relationships between various levels of organizations in the sector, as well as between organizations at a given level. The appeal to the racial inequality of a segregated school system provided a rationale for the centralization of authority, particularly of funding decisions, at the federal level. The diagnosis of public schools as failing provided the political rationale for

shifting the evaluative regime from one based on structural conformity to one focused on output measures. Finally, the critique of public education focused on the control of schools by the twin organizational incumbents of district bureaucracies and teacher unions, providing a rationale for the decentralization of school and teacher supply. In each of these instances, crisis has provided a motivating animus for institutional change, and the specific configuration of these changes have in turn altered the inter-organizational dynamics between schools, as well as those between schools and districts. These new dynamics in the public education sector suggest a world in which neoinstitutionalism, resource dependence, and organizational ecology are all relevant for understanding particular aspects of organizational behavior, and introduce heterogeneity in their relevance across local settings.

The crisis of equity centralized some aspects of the institutional and resource environments faced by schools including funding. As the political winds shifted with a move to the right on the national stage, the Federal Government federalized funding decisions by shifting control over federal money to state governments. In this context, the crisis in effectiveness of public schools was addressed by increasingly powerful state governments through the passage of accountability legislation which moved the basis of evaluative control from formal-structural aspects of schools and districts to output controls as measured by student achievement on standardized tests. At the same time, critics focused on districts and unions as the sources of ineffective schooling were pushing reforms oriented at giving schools greater autonomy, and states were decentralizing control over school supply, teacher supply, and pushing administrative control over schools from districts to new types of schools and to private management. In this context, some districts have redefined the structure and arenas of their governance over schools in a manner consistent with the rupturing of formerly stable organizational fields caused by these larger institutional changes.

Changes in institutional structures, including the organization of key resource supply, organizational entry, and the dominant bases of regulatory and normative legitimacy have made local power dynamics and market situations more salient to school behavior. With organizational dynamics shaped by local environmental forces, and local environmental forces becoming increasingly heterogeneous in character, the extent to which public schools are autonomous, are in competition with one another and are subject to various evaluative bases of legitimacy is variable across local settings. The multiplicity of overlapping local organizational fields, and the penetration of these fields by larger fields orienting action towards differing sets of governing institutions, creates an environment in which mechanisms at play may have differing effects by locality or by organizational set.

As the policy terrain becomes increasingly uneven, the organizational field of education is revealed as an arena in which local contests between organizations and interest groups, including schools, competing for resources and legitimacy play out according to local dynamics conditioned by the larger shifts in the field. The staid and steady institutional demands have dissolved, replaced with an increasingly varied world of control, autonomy, resource certainty and competitive pressure. In this context there are several questions that come to mind: 1) how do variable broad institutional structures interact with local power dynamics between non-

school organizations in the field, between these organizations and schools, and between schools and one another to shape the emergence, death and behavior of schools, 2) how do these dynamics shape the behavior of students and families, 3) how do local market dynamics reshape power dynamics between schools, districts, unions and private groups, and 4) how do these changes impact the broader processes of legitimation and de-legitimation of institutional structures? In the chapters that follow, I will explore the first two of these questions.

Chapter 5 - Charter School Sector Development in California

Introduction

Over the course of the last 20 years, the organizational landscape of American public education has been reshaped. In the face of these deep institutional changes, organizationally minded sociologists interested in education have seen the approaches in their theoretical toolbox grow rusty and unsuitable for the tasks at hand. One of the key institutional changes in the field has been the passage of charter school laws in nearly every state. The differential expansion of this new organizational population across states, within states across districts, and even within districts across neighborhoods poses questions that modern applications of organizational theory in the sociology of education are ill equipped to handle. This chapter argues that processes of legitimation, power, and competition *interact* with one another to create local dynamics that structure the adoption and expansion of charter schools across school districts.

Public schools are often thought of as organizations facing a well-ordered and relatively predictable environment in which their crucial resource dependencies are tied to political relationships with state and local officials, administrative bureaucracies, and other stable organizations. This is particularly true under traditional residentially based student assignment regimes when accompanied by codified per pupil funding structures and dominant teachers unions providing structured internal labor markets. In these public school systems, students are divvied up amongst schools according to where they live, and accompanied by public funds on a per student basis; while schools seeking new teachers are faced with a structured process negotiated by district administrators and the teachers union generally based upon seniority. Education reformers have sought to disrupt these arrangements and induce competition in a variety of ways including open enrollment programs, vouchers, and tuition tax credits. One of the more prevalent approaches has been the creation of a new organizational form allowed to draw resources from across these politically and administratively defined niches and unbound by the hiring and firing strictures laid out in a detailed labor contract: the charter school.

Research into charter schools can usefully be divided into three groups. First, there are studies of charter law passage (Renzulli and Vincent J. Roscigno 2005; Shober et al. 2007; Wong and Shen 2006). This includes research into the factors predicting the passage of charter school laws, the timing of passage and aspects of the bill's contents. Second, there are studies of charter school adoption and expansion (Renzulli and Vincent J. Roscigno 2005; Renzulli 2005; Rincke n.d.; Zhang and Yang 2008). Research in this vein looks at either the state or the district level and examines factors affecting the initial opening of a charter school, or the number of operating charter schools. Typically, this work is theoretically motivated by interest in "policy diffusion" (Rincke n.d.; Zhang and Yang 2008) broadly construed, and more rarely by interest in organizational environments (Renzulli 2005). Interestingly, this work has not yet extended to charter school failure. Finally, there is research into the effects of charter schools on students

and families (Bettinger 2005; Bifulco and Ladd 2006; Bohte 2004; K. Booker et al. 2007; Kevin Booker et al. 2011; Buckley 2005; Buddin and Zimmer 2005; Hanushek et al. 2007; T. R. Sass 2006). This chapter contributes the second group by looking both at initial adoption and at differential expansion across school districts while examining organizational heterogeneity within the charter school sector and the interaction of key inter-organizational processes in the adoption and expansion of a new organizational population.

Previous work on the growth of charter schools has typically focused at the state-level looking at the adoption of charter laws and/or the count of charter schools. This work has taken as its focus mimetic policy diffusion across states as well as the effect of intra-state political characteristics on charter law adoption and the "strength" of the adopted law (Renzulli and Vincent J. Roscigno 2005; Shober et al. 2007; Wong and Shen 2002, 2006). Another strand of this work moves to the local level looking at factors affecting the opening of charter schools across districts (Rincke n.d.; Zhang and Yang 2008). This strand is less developed and has either focused on whether or not a district has an operating charter, or the number of operating charters. This chapter contributes to this line of research through two analyses. First, by conceiving of charter school adoption as a discrete-time process in which districts are placed at risk with the passage of a charter law, and then examining the effects of key variables drawn from organization theory on the hazard of adoption I am able to simultaneously explore the role of time space as well as aspects of local governing bodies and other organizational populations on the birth of a new organizational form. Second, I look at the expansion of the charter school sector within districts over time exploring the effects of key factors on the growth of charters of various types. In each case, I focus on the effects of interactions between organizational dynamics established in the literature on differential growth across districts, within districts over time and the differential effects of particular organizational dynamics for sub-sectors of a new organizational population.

As has been noted (Renzulli 2005; Zhang and Yang 2008), the most straightforward account of charter school expansion is a functionalist one which accounts for the growth of charter schools by appealing to the needs of public school students. According to this argument, charter schools will crop up and the sector will expand in areas of particular need, i.e. places that public school students have been poorly served by traditional public schools. Approaches from organization theory on the other hand emphasize inter-organizational factors. Economic and organizational sociologists have settled on a few additional forces shaping organizational interactions and population dynamics including the birth and expansion of new organizational populations: competition (Hannan and Freeman 1993), inter-organizational power dynamics (Pfeffer and Salancik 2003), and legitimation processes (regulatory, normative, and cognitive) (Deephouse and M. Suchman 2008). These perspectives are often considered in insolation from one another or as strictly alternative explanations for a given phenomenon.

This chapter argues that each of the primary explanations for organizational behavior can fruitfully be used to understand particular aspects of initial adoption and population expansion, but that these processes interact with one another, and work differently across organizational subtypes. Drawing on each of the key explanations for the growth of new

organizational types, I argue that meaningful elaboration of the interaction between the processes that these explanations draw on is needed to understand the local adoption and expansion of new organizational populations and examine the differential effects of the processes and their interactions for organizational subsectors. The analysis focuses on the expansion of charter schools across districts in California looking at both initial adoption and growth of charter schools. Finally, I draw conclusions from these analyses regarding the relative merit of each perspective for how we understand charter schools, and discuss how we think about the growth of new organizational sectors and the development of organizational fields in which processes described by each approach are differentially active in shaping organizational behavior. The chapter proceeds as follows, first I briefly review the history of charter schools in California, second I review the relevant theoretical perspectives as they apply to the expansion of charter schools and motivate research questions, third I detail the analytical strategy, describe the data and measure and present the methods used, fourth I present the results of the study, and finally I discuss the results as they pertain to modern organizational and institutional processes in education systems.

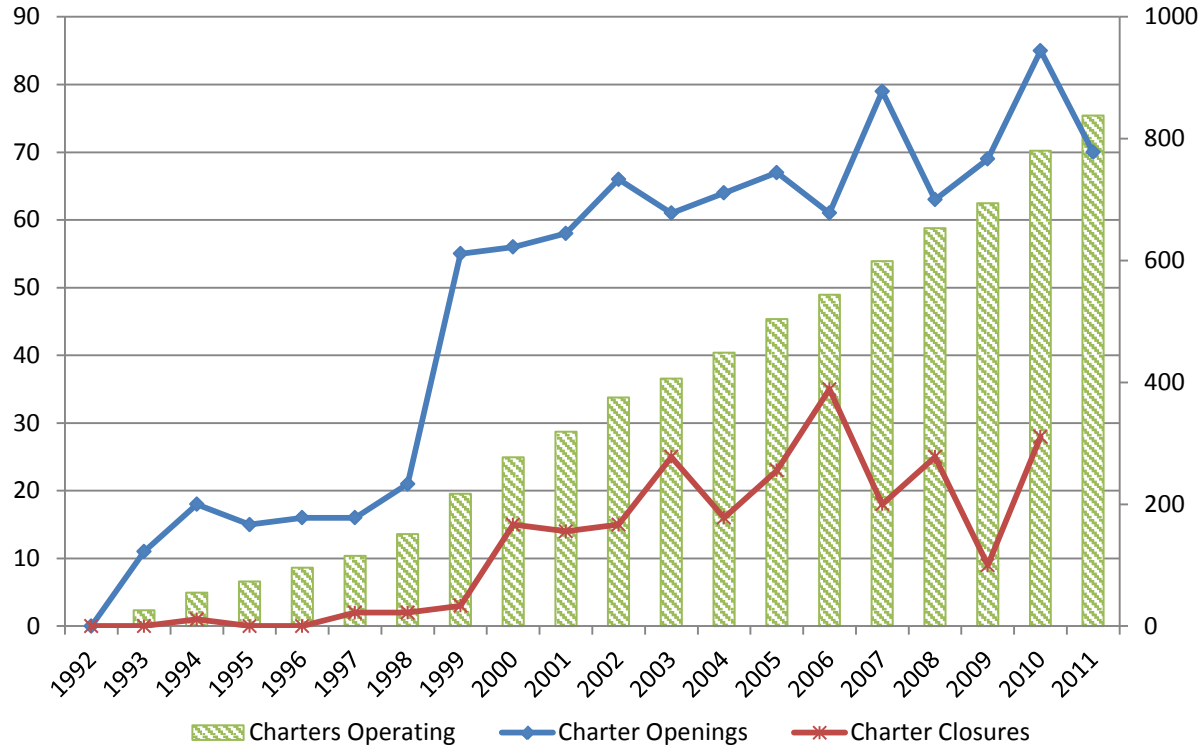
Charter Schools in California

In 1992, California became the second state to pass a charter school law. This section will outline a brief political history of charter school legislation in California, and offer a simple description of the spread of charters between the passage of the bill and 2011. The 1992 bill, S.B. 1448, was written and proposed the political Left largely as an alternative to school vouchers which were put on the state ballot in the same year. While, both vouchers and charter schools attempt to mix private school management with public funding, charter schools retain a greater role for public oversight. Vouchers operate by giving parents public money to spend on tuition at the school of their choice, including private and sectarian schools. Charter school laws on the other hand allow for the direct creation and operation of public schools by individuals or organizations with approval from a public entity. The architect and champion of S.B. 1448, Sue Burr and Senator Gary Hart, described their motivation as an attempt to inject meaningful reform into public education in anticipation of the public's growing dissatisfaction and willingness to consider what they saw as more radical proposals. In particular, they viewed the voucher proposal on the California ballot in the same year as a significant threat to public education (Hart and Burr 1996).

With vouchers knocking on the door, these reformers positioned charters as an alternative more palatable to the political Left, but capable of garnering support from the Right as well. Still, the bill faced significant obstacles to passage including staunch opposition from powerful teachers unions, and an alternative charter school bill that had been proposed in the State Assembly. S.B. 1448 and its assembly alternative, A.B. 2585, were different in several crucial respects. While the Senate bill proposed an initial authorization cap of 100 schools, sought to set up local district authorization processes and took pains to avoid prescription regarding the role of collective bargaining, state agencies, and credentialing organizations, the bill making its way through the Assembly featured a prominent role for the state board of

education and for teacher unions in the authorization of charter schools, and wanted to limit the number of charter schools to 25. With legislators from the Right withholding and fierce opposition from teachers unions, the Senate bill appeared as though it would not survive conference committee, while the Assembly bill was poised to make its way to the Governor's desk. Through what S.B. 1448's authors have described as "complicated and creative parliamentary maneuvers" (Hart and Burr 1996) the bill passed out of the legislature and, along with A.B. 2585 went to the Governor for signing. Faced with two charter school bills, Republican Governor Pete Wilson signed the Senate bill into law and vetoed the more modest Assembly bill.

Figure 4.1: California Charter Openings, Closures, and Operating Counts by Year

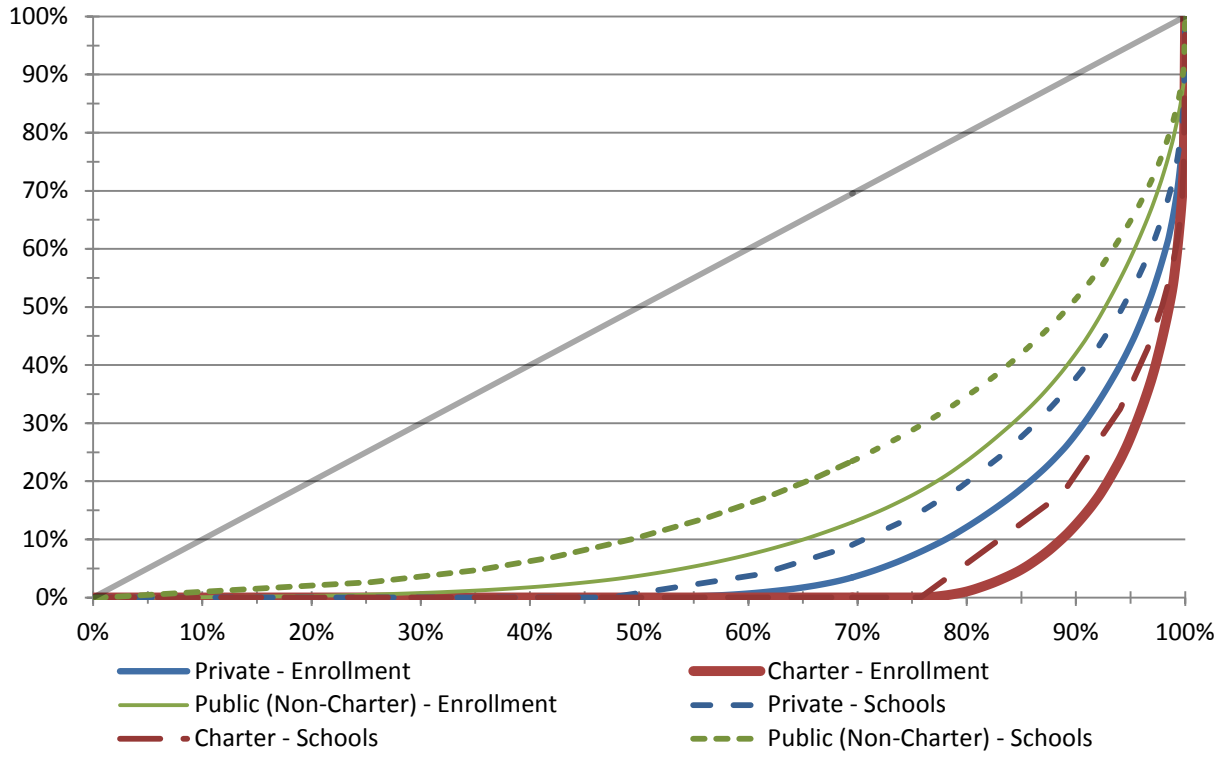


The passage of S.B. 1448 opened up the possibility for a new type organizational type to grow in California school districts, but California's charter school law has also changed significantly over time. In its initial form, California's charter school law put caps on the number of charter schools allowed to operate in the state at 100, and in any individual district at 10. In addition the bill did not allow non-profit organizations to manage charter schools, and allowed limited funding options for charters. Finally, though bill did specify conditions under which a district school board could revoke or deny a charter, applicants who had been denied or who had their charters revoked could appeal only to county offices of education.

Significant changes came in 1998 and 1999. Assembly Bill 544 moved the caps on charters increasing the number allowed in the state to 250 and setting up a process increasing

the state cap by 100 schools each year. The bill also created a multi-level submission and appeals process allowing petitioners revoked or denied at the local level to appeal to both county and state authorities, and gave county and state office of education the authority to grant charters directly, though this process is designed to be more difficult to achieve. It also allowed schools to be operated as or by non-profit organizations (CMOs) opening up the operation and management of schools to a new field of organizations, while also placing new requirements on charter school teachers that they be credentialed equivalently with their traditional public school counterparts. In 1999 another bill was passed which altered the funding rules for charter schools extending categorical and lottery funding to charters, and allowing charters to receive funding from their local district authorizers, as well as directly from the state.

Figure 4.2: Cumulative % of Enrollment and School Counts by District Percentile & School Type – 2009



Since the passage of the charter law, the number of charter schools operating in California has steadily grown from under 30 schools operating in 1993 to almost 850 in 2011. Figure 4.1 shows the count of operating charters as well as the numbers opening and closing in each year between 1992 and 2011. The left y-axis measures the count of charters opened/closed in a given year while the right y-axis measures the count of charters in operation. Other than a small jump in the number of openings between the 1998 and 1999 school years, possibly a result of the raising of the charter school cap from 100 to 250 for the 1998-99 school year, the rate of growth for the charter school sector has remained relatively stable since 1992.

The location of charter schools sector expansion however was far from even. Charter schools are concentrated in a relatively small number of school districts. Figure 4.2 shows the cumulative share of traditional public, private and charter school counts and student enrollment by school district ordered from smallest to largest on each of these dimensions. This amounts to the familiar Lorenz curve (Kakwani 1977) but for student enrollment and school counts by district rather than income by household.

The forty-five degree line represents equal dispersion across districts. The more a line deviates from this, the more unequally distributed the variable it represents was across California school districts in 2009. As might be expected, schools are more equally distributed than are students, and public schools and public school students are more equally distributed than their private counterparts. As is clear, charter schools and charter school enrollment is far more unequally distributed across districts than either private or public. The bottom 80% of districts contain about 1% of charter school enrollment, and only about 5% of charter schools, while the top 5% of school districts contain around 65% of charter schools in the state and over 70% of charter school enrollment, and the top 1% containing about 45% of each.

Local Policy Adoption, and Sector Expansion

When looked at in terms of organizational processes charter school expansion at the local level can be explained from four main perspectives. The essence of charter school legislation is the removal of barriers to entry to *public* education. The functionalist or demand-response account suggest that once these barriers are lowered, districts with pent-up demand for higher quality public education will authorize charters and the sector will expand (Nathan 1998). Taking this line of thinking a step further suggests that the existing organizational landscape in terms of competition between public and private schools will condition the extent to which charters have room to grow, a point of view closely associated with population ecology in organization theory (Hannan and Freeman 1993; Hannan 2005). Districts are not passive adopters however. In addition to organizational ecology, the abundance of key resources and their control by other organizations can shape the opportunities that new organizations have to grow and prosper. Resource dependence in organization theory would suggest existing administrative capacity and entrenched interests may shape the extent to which charter schools are allowed to expand regardless of demand or competitive processes (Pfeffer and Salancik 2003). Finally, districts may serve as models for one another. Neoinstitutionalism in organization theory again suggests that organizational life is crucially dependent upon environmental factors; however this perspective emphasizes the cognitive and symbolic aspects of social life and thus looks at inter-organizational relationships in terms of the extent to which they provide support for one another though legitimation (H. D. Meyer and Rowan 2006; J. W. Meyer and Rowan 1977). As local districts begin to authorize charters, this line of thought suggests that they may become increasingly accepted solutions to basic educational provision problems and thus legitimation may spur mimetic diffusion of charters across groups of nearby districts.

Market Demand

By passing charter school laws, state governments are opening up the potential for challenge to local government monopolies over the *provision* of public education. The original impetus for the establishment of charter schools was the perceived failure of traditional public schools to respond to parental preferences and the interests of students, particularly with regard to disadvantaged and minority students, or students who were otherwise being served by understaffed, overcrowded, or poorly performing public schools (Nathan 1998). Charter school laws allow groups of people to start new schools if they feel their existing traditional public schools are lacking. This line of thought suggests that this untapped demand will drive organizational growth.

This demand side logic presumes that once barriers to entry are lifted, organizations (in this case charters schools) will spring up in response to the rational preferences of consumers, (in this case parents). If there are parents and students whose interests are not being served by public schools, but who cannot defect to private schools, the logic of rational action suggests that charter schools will emerge according to familiar demand-response market dynamics. If this demand is what drives the adoption and expansion of charter schools in local districts, localities lacking in the qualities that parents look for in public schooling should be hot-beds of charter sector growth.

One study found that parental support for charters was driven by a desire for smaller class sizes, higher academic performance, and higher quality teachers (Vanourek et al. 1998). If charters are responding to parents searching for these qualities, charter adoption and growth will be positively associated with each of these factors. Furthermore, charter advocates intended charter schools to be a non-traditional option primarily for disadvantaged students including minority students, at risk students and special education students; though there is some disagreement about the relative ability or propensity of disadvantaged students to exercise choice. In districts with existing district-administered schools serving these groups, charters may be less necessary. If the growth of charters is being driven by market demand, we'd expect that districts with lower performing schools, those with higher student to teacher ratios, with lower quality teachers, and those with higher percentages of minority students, would all show greater likelihood of adoption and more charter sector expansion, as would districts with fewer specialized school services for at-risk or special education students.

H1: The odds of charter adoption and the number of operating charters will increase with worse quality measures, higher proportions of disadvantaged and minority students.

H2: The odds of charter adoption and the number of operating charters will decrease with more district operated options for at-risk and special education students.

Competition

Research and theorizing on charter schools has focused on the idea that freedom from ponderous district bureaucracies, residential attendance zones, and the entrenched interest of

teachers unions will create competitive pressure in the world of public schooling. The capacity of charters to hire, fire, and set compensation outside of a labor contract, and their ability to enroll students from across residential attendance zones are all intended to force schools to compete for key resources (Hassel 1999). However, the creation of this new organizational population is taking place within a resource space served by (at least) *two* existing populations of organizations. Most education markets are served by traditional public schools and private schools, as well as in many areas alternative public schools of choice or district operated public schools designed to serve particular groups of students. The organizational landscape will shape charter adoption and sector expansions though the competitive balance of public and private sectors and the observed performance of existing charters.

Population ecology has been concerned with the demographic dynamics of organizational populations, and particularly with the inter-relationships between populations of organizations. This perspective focuses on abundance, distribution and variation in key the resources of an organizational environment, and uses these to explain aspects of entire groups or populations of organizations (Hannan and Freeman 1977). Typically, organizational ecology attempts to explain the abundance and diversity of organizations as the result of economic, social, and political characteristics of their resource environments (Barron 2002; Glenn R. Carroll 1984). While organizational ecology posits a substantial role for cognitive legitimation in the early growth of organizational populations (see the section below for that topic), it is the competitive aspects of the organizational environment that population ecology is principally concerned with.

The ecological perspective suggests that competition between populations of organizations hinges on the shape and overlap of their resource spaces. A resource space is defined by the types and quantities of resources needed for a given type organizational type to survive. Populations of organizations occupying a given resource space vie with each other for control over these resources (Hannan and Freeman 1993). If a particular resource space is sparsely occupied by organizations, competition between organizations or between populations of organizations will be low, but as the density of organizations in a given resource space increases, so too does competitive pressure depressing population expansion. Resource spaces divide populations of organizations with the same general resource dependencies into groups based upon the degree of similarity in the exact resources those organizations seek, and this is equally true in the world of K-12 education.

Public and private schools have coexisted in a stable organizational ecology involving varying degrees of competition for quite some time. With public school enrollment tied to residence, students and families are divided into those capable of exercising choice through exit into private schools and of footing the bill for the attendant tuition, and those who cannot. Even those families capable of paying private school tuition may choose to send their children to public schools if the school provides a level of educational quality that the families find adequate. On the other hand, there are some families who, living in areas served by low quality public schools, will sacrifice relatively large portions of modest family incomes to send their

children to private schools. This is crucially dependent upon the spatial distribution of sectors in the district.

In areas with few private schools, public schools effectively have a monopoly particularly over students and families with limited residential mobility and without disposable income for tuition payments. In areas served by relatively higher numbers of private schools, students and families for whom tuition payments or residential movement pose proportionally small costs have the option to move to the best public schools or exit to private schools easily. Public school students already exercising choice through attending alternative schools like magnets, and private school students who struggle to make tuition form the base of the students at the resource boundary between public and private schools. Charter schools, with no tuition costs or residential boundaries could be an attractive option to these students and families. Districts in which private schools and public schools are geographically mixed should provide charters with a larger potential enrollment base.

The exact degree of overlap in the resource spaces of public and private schools in a particular area is difficult to determine; however it's certainly likely that in districts with larger numbers of private schools relative to public schools, competition between sectors will be high (Arum 1996). While this sort of resource competition has been a part of inter-organizational relationships in the education sector for some time, with the shift to output centered evaluation engendered by accountability and standardized testing, testing has become a part of the way schools compete to attract new students and keep the students they have. The success of like organizations is a key metric by which those thinking of entering a market gauge their own potential for success. If potential suppliers make decisions based upon the performance of existing organizations, we might expect that districts in which existing charters are outcompeting traditional public schools to see increased sector expansion.

While the introduction of competitive dynamics into the public school system is frequently cited as a motivation for the passage of charter school laws, the role that competition plays in the birth of actual charter schools and the expansion of the charter sector is not often discussed. In districts with effective traditional public and private school sectors competing for students, charters may find it difficult to gain purchase. Competitive organizational environments should restrict the growth of new organizational populations through the increasing difficulty of acquiring resources. Furthermore, with the advent of standardized testing and accountability, prospective charter operators have an easy indicator of the competitive success of existing schools in terms of student performance.

H3: The odds of charter adoption and the number of operating charters will decrease with increasing levels of competition between sectors.

H4: The number of operating charters will increase with observed performance advantages for existing district charters.

H5: The number of operating charters will decrease with spatial concentration of public and private sectors.

Resource Dependence

Resource dependence has typically been treated in cursory fashion where it gets any attention in sociology of education (Arum 1996; Renzulli 2005). While often this amounts to the inclusion of revenues based measures in regression models, resource dependence is a much broader perspective focused on inter-organizational power dynamics, particularly imbalance and mutual interdependence (Davis and Cobb 2010; Emerson 1962; Pfeffer and Salancik 2003). This perspective suggests three essential ideas about organizational behavior: 1) that organizations are dependent upon external resources often controlled by other organizations, 2) that dependency creates power, and 3) organizations will try to maintain their power of resources need by other organizations and free themselves from external control by mitigating their reliance on resources controlled by others.

Organizations are vitally linked to resources in their environment, frequently these resources are controlled by other organizations, and this control is the essence of inter-organizational power. If one organization controls a resource that is needed by another organization, and this resource is difficult to obtain from other providers, the first organization will hold power over the second. However this doesn't mean that the second organization cannot simultaneously hold power over the first. Resource dependence posits power as a property of the relationship between organizational actors, and that inter-organizational power flows from resource requirements and controls. Organizations are constrained when the resources they require are controlled, are difficult to find, or are available from a limited number of others. This perspective can offer significant insight into the dynamics of organizational populations in general, and in this case of charter schools.

While charter school legislation is adopted by state governments, in most states including California, local districts are tasked as authorizing agencies. The ability of local districts to deny charter applications is often circumscribed by state law laying out legitimate reasons for denial, but district orientation toward charter schools is certainly a factor in their expansion. Districts vary in the amount of funding flowing into them, but also in their administrative capacity, and their relationships with teacher unions and other stakeholders. A resource dependence perspective suggests that charter adoption and expansion will be sensitive not only to the availability of funding resources in general, but also to the administrative strength of the district, and district control over funding.

Charter advocates have critiqued existing public school districts as excessively bureaucratic (Chubb and Moe 1990b). If district bureaucracy is creating dissatisfaction beyond quality concerns, larger administrative capacity will produce higher likelihoods of charter adoption and higher rates of sector growth. On the other hand, resource dependence suggests that districts with more elaborate and larger administrative apparatuses relative to the number of schools should be better able to restrict charter adoption and growth through putting political pressure on school boards, and controlling resource flows including local funding and facilities.

As previously noted new policy adoption requires slack funding resources to be available (Rogers 2003). This line of thought suggests districts with ample per student revenues may be attractive for potential charter school operators. On the other hand, districts with ample funding may have less demand for charters, and thus may see less charter sector growth. This suggests a difference between within-district effects and between district effects. Charters may grow in districts with more revenue, but may also expand as administrators in district with higher average revenues see their revenues decline. In this particular situation, public school districts may see charters as a means to defray the increasing dissatisfaction of students and parents.

Research in this area has typically lumped revenues from all sources together; however districts with large portions of funding coming from local sources relative to state and federal may see lower likelihoods of charter adoption as well as less growth. Public school districts receive funding from local, state and federal sources; though local and state sources comprise the large majority of public education funds (Dixon 2012). Local revenue is raised through property and parcel tax and is typically controlled by public school districts while state per-pupil and categorical aid are governed by revenue formulas and regulations. The charter school sector, created by state legislation, poses a political threat to local districts. This dynamic suggests that districts with larger proportions of revenue coming from local sources will be less likely to adopt charter schools and to see sector expansion.

H6: The odds of charter adoption will increase with increasing levels of funding resources.

H7: The number of operating charters will increase as funding levels decrease.

H8: The odds of charter adoption and the number of operating charters will decrease with increasing district administrative capacity and funding control.

Legitimacy

As charter schools spread, their status as new and risky organization changes. Neoinstitutionalist organization theory suggests that processes of legitimation move organizational forms from risky, poorly understood or suspect status to being accepted and sometimes taken-for-granted solutions to particular problems. At the same time, this period saw a shift in the evaluative bases of legitimacy from structural congruence to output performance in the form of test based accountability for schools. These two dynamics may shape where charters find purchase and grow.

The neoinstitutionalist perspective on organizations emphasizes the ways in which cognition, culture and social/political rules shape organizational behavior (Aldrich and Fiol 1994; Archibald 2004; W. Richard Scott 2001; M. C. Suchman 1995). Regulatory systems structure organizational behavior by setting up sanctions and creating incentives for observance. When organizations fall out of alignment with regulatory standards, they lose legitimacy in the eyes of other social actors opening up the possibility for other organizations to usurp their position.

With the enactment of NCLB, and its implementation via state testing, a basis for regulatory legitimacy was set up with the criteria being school level and student group achievement in focal subjects. Schools that do not achieve beyond minimum standards of achievement and growth are put into Program Improvement, a public state regulatory illegitimacy. In this context, districts with higher relative numbers of schools in Program Improvement may present an opportunity for charter schools. When traditional public schools loose legitimacy in this fashion this new organizational form may present an increasingly legitimate option.

In addition to regulations and rules, culture and categories can provide models against which organizations and organizational forms are measured to achieve legitimation. Cultural and cognitive models provide tools, and rationales for the construction and explanation of organizational structures, practices, and forms (Deephouse and M. Suchman 2008). Organizations conforming to dominant accounts of their purpose, and pursue accepted ways to attain goals are supported, ensuring their claim over a particular jurisdiction of activity. These organizations are allowed to operate with little or no challenge to their existence as an organizational population. When a particular cultural or cognitive model for organizational form and action achieves cognitive legitimacy it can produce minimum the distrust of alternatives. Complete legitimacy of this sort results in an organization, organizational form, policy, goal, procedure, etc., that is beyond reproach, resulting in the inconceivability of alternatives (W. Richard Scott 2001). In the case of new organizational models, gaining cognitive legitimacy is a process of momentum in which small gains in numbers confer additional legitimacy in turn opening up the potential for additional organizations.

In the case of charter schools, the adoption and growth of charters in nearby districts could provide an introduction to the organizational form as a cognitively legitimate alternative to traditional public schools. As students and their families come into closer contact with charter schools, these organizations become less alien and are increasingly accepted. From the perspective of students, parents, and local districts, the passage of charter laws, charter school authorization by state and county officials and the establishment and growth of charter schools in nearby districts may serve to signal that these new organizations are acceptable formal means of education provision.

While typically acceleration in the adoption of new organizational forms via cognitive legitimation is considered as operating through contact with existing members of this new group, nearby or organizational populations may also contribute to acceptance of new organizational forms. This seems even more likely given the organizational landscape of K-12 education. In many school districts, there are only traditional public schools and perhaps private schools in this environment. The presence of private schools or non-charter public schools of choice may also provide legitimation to prospective charters, even as they compete for the same resources (see H3). Private schools provide examples of education organizations managed by non-public entities. In places where private schools have a presence, publicly financed schools managed by non-district organizations may be more cognitively acceptable than in districts where this is unfamiliar. Taking this along with the notion of private-charter

competition in H3 suggests that private schools may provide legitimation in small numbers but as their numbers increase this symbolic support is washed out by competition.

H9: The odds of charter adoption and the number of operating charters will increase with the proportion of traditional public schools in Program Improvement.

H10: The odds of charter adoption and the number of operating charters will increase with proximity to other districts with charters.

H11: The odds of charter adoption and the number of operating charters will increase with the presence of private schools and alternative public schools.

Process Interactions

Typically, each of the above organizational processes and dynamics are considered in isolation or as alternative explanations. The dynamics structuring the adoption of a policy reform, and the attendant expansion or contraction of associated organizational populations are often presented as following the dynamics of one particular organizational process. I entertain the possibility that these processes interact to structure the emergence of new organizational populations in particular ways.

First, I consider an interaction between demand response and legitimacy. The demand response perspective suggests that districts with low performing public schools will see higher likelihoods of charter adoption and growth. This same logic would suggest that having other options in a district would reduce this effect given that there are other outlets for this demand. However, neoinstitutionalists might suggest that demand is conditioned by expectations regarding the possibility of alternatives. In this scenario, having alternatives would serve to activate the demand that is driven by poor performance.

H12: The effect of district performance on charter adoption and expansion will be magnified in districts with private school sectors.

Second, I consider the possibility that the presence of various types of organizations serve as legitimacy substitutes. Typically when researchers discuss private schools and charter schools as substitutes, they do in the context of competitive dynamics in which the presence of private schools might suppress charter growth (Zhang and Yang 2008). I consider the possibility that these forms are legitimacy substitutes as well. This line of thought suggests that charter schools in nearby districts may spur sector growth, but will do so in areas without existing private school sectors. Furthermore, if private schools provide legitimation for public schools

H13: The effect of charter schools in nearby districts on charter adoption and expansion will be strongest in districts without private schools.

Third, I will entertain the possibility that district power may condition the effects of substitute legitimacy and public/private competition on charter growth. If the adoption and expansion of charters is in response to administrative elaboration in public school districts, the

legitimation that charters receive from the presence of existing alternatives districts will be stronger in districts with large administrative capacity. At the same time, if administrative capacity helps public school districts to control resource flows, these districts will feel the most pressure to restrict charter adoption and growth in places where the private sector is large. This suggests district resource control may accentuate the dynamics of both legitimacy and competition. In this context, administratively weak districts would transform the size of the private school sector from a measure of competition to a continuous measure of legitimacy as here traditional public school districts are ineffective competitors and unable to restrict charter adoption and growth while the private school sector provides legitimation without restricting the resource space. It is also possible that this dynamic is present in only adoption with private sector size providing increased legitimacy to charter school adoption in districts with small administrative capacity, but presenting competition capable of restricting charter expansion.

H14: Districts with larger administrative capacity will show stronger positive effects of private sector presence *and* negative effects of private sector size on charter adoption and expansion.

Finally, I'll also examine the possibility that sector concentration magnifies the effect of alternative public schools on charter school adoption and growth. In districts with higher levels of spatial concentration and existing alternative public schools of choice, the resource space for potential charter schools will be constricted. This suggests that the likelihood of charter adoption and the degree of expansion in these areas or times will be lower.

H15: The effect of alternative non-charter public schools charter adoption will be stronger in districts with higher levels of public/private spatial concentration.

Data, Methods & Measures

This chapter is focused on the initial adoption and expansion of charter schools within and across California school districts. I draw on school level data from a variety of sources, matching at the school level and then aggregating to the district level. I combine school level data from the California Department of Education (CDE) public school database, annual Standardized Testing and Reporting (STAR) files, Program Improvement files, annual enrollment data, and data on staff from the California Basic Educational Data System (CBEDS), data on California private schools from the Private School Roster maintained by the CDE, and data on charter school specialization from the Charter School Roster maintained by CDE, detailed data on charter school types were obtained from the California Charter School Association Roster. Data on district financing was taken from the National Center for Education Statistics' (NCES) Common Core of Data (CCD). Each school including private schools charters and public schools, was geocoded, i.e. a latitude and longitude was assigned, from street addresses. Addresses were parsed and geocoded using Texas A&M Web GIS API, those not located with sufficient accuracy were geocoded using Google's geocoding API. Each data source used covers a slightly different period of time with the overlapping years.

Table 4.1: Counts of Districts and Observations For Subsets of Data in Discrete Time Hazard Model

	Observations With Fills		Observations Without Fills		Years Without Fills	
	it	*i*	*it*	*i*	First Year	Last Year
Observations Before Adoption	11,744	808	11,744	808	1993	2011
With Public School Data	11,744	808	11,744	808	1993	2011
With Geographic Data	11,693	803	11,693	803	1993	2011
With Enrollment Data	11,693	803	10,938	786	1994	2011
With Financing Data	11,689	800	9,234	760	1995	2009
With Staffing Data	11,482	768	9,114	734	1995	2009
With Testing Data	11,482	768	6,314	684	1999	2009
With Private School Data	11,418	767	5,615	657	2000	2009

Table 4.2: Counts of Districts and Observations For Subsets of Data in Count Models

	Observations With Fills		Observations Without Fills		Years Without Fills	
	it	*i*	*it*	*i*	First Year	Last Year
Observations Before Adoption	5,839	311	5,839	311	1993	2011
With Public School Data	5,827	311	5,827	311	1993	2011
With Geographic Data	5,796	311	5,796	311	1993	2011
With Enrollment Data	5,796	311	5,498	311	1994	2011
With Financing Data	5,793	311	4,594	311	1995	2009
With Staffing Data	5,687	306	4,519	306	1995	2009
With Testing Data	5,687	306	3,315	306	1999	2009
With Private School Data	5,669	306	3,001	306	2000	2009

The analysis proceeds in two steps. First I estimate, present, and interpret a discrete-time hazard model for charter school adoption. Second, I estimate, present and interpret the results of count models for operating charters. Since the interest of this chapter is organizational environments, districts that have only one operating public school between the passage of California's charter school bill in 1992 and 2011 are not included in the analysis.[21] The data are further reduced in three respects. First, complete data from each data source was available for the ten years between 1999 and 2009 inclusive. This is a particularly vexing problem for the first portion of the analysis as limiting the time period of the study to 1999 to 2009 amounts to left censoring and could have serious consequences for the model results.

In order to deal with this issue, I take data from the first available year for independent variables drawn from data beginning after 1992 and backfill (exceptions are noted in the section on independent variables below). Similarly for variables from data ending before the 2011 I carry data forward from the last year of available data.[22] Second, for the purposes of the

[21] See Appendix A for details.

[22] Running the models in this chapter with and without backfills has no notable consequence for independent variables other than the baseline hazard estimates from models on initial charter adoption.

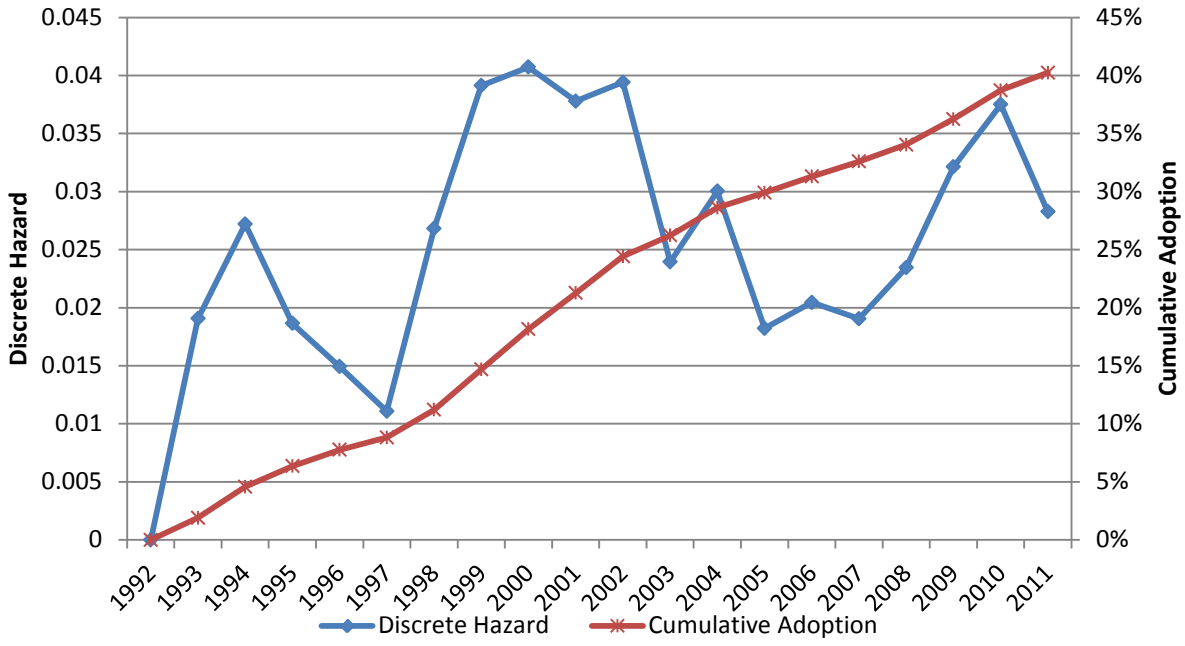
analysis on charter school counts I employ fixed effects modeling which limits the sample to districts with variation on the dependent variable, meaning districts that had a charter at some point between 1992 and 2011. Third, some of the variables in the analysis had missing data. Tables 4.1 and 4.2 show counts of district-years and unique districts for the estimation samples in the models for initial adoptions (Table 4.1) and charter school counts (Table 4.2) using variables with and without the filling procedure described above, as well as the range of years for the estimation sample using variables without fills.

Dependent Variables

Charter schools are a rapidly expanding organizational population and California has become home to one of the nation's largest charter sectors. While states open up the possibility for charters to grow by enacting legislation, local districts are the public entities dealing with demand for this new innovation, with existing competition between themselves and the private sector, as well as with the changes in their organizational position that charters represent. Looking at the district level then allows us to gain leverage on how these organizational processes interact in the birth and growth of a new organizational population.

Adoption

Figure 4.3: Discrete Hazard and Cumulative Charter Adoption in California Districts



The dependent variable in the first part of this analysis is a dummy variable indicating that a district has at least one operating charter in a given year. Districts become at risk in 1993 the year after the charter school law was enacted, and remain at risk until their first charter is

opened. Districts without a charter before the end of the data in 2011 are considered right censored. Figure 4.3 shows the cumulative adoptions by year as well as the empirical hazard or the percent of districts without a charter adopting in each year. Districts adopted their first charter schools in a very uneven pattern over the time period with peaks in the adoptions at around 4% in the late 1990's and early 2000s and again in 2010. By the end of the time series, 40% of California school districts were operating at least one charter.

Expansion

Table 4.2: Descriptive Statistics for Counts of Operating Charters

	Mean	Std. Dev.	Min	Max	N
Overall	1.22	5.84	0	198	5669
Between	.	4.31	0.05	70.42	306
Within	.	3.89	-62.20	128.80	18.53

The dependent variable for the second part of the analysis is the count of operating charters in a given district-year. Table 4.3 shows basic descriptive statistics for this variable overall, between and within panels. This table only presents data for districts that are included in the second part of the analysis, namely district that have at least one operating charter at some point during the time series, and have more than one traditional public school at some point during the time series.

The average amongst these district-years is a little over one charter. With the standard deviation at nearly 6, the data are overdispersed. As expected, the minimum number of charters in a given district year is zero, and the maximum is nearly 200; though the data will be highly skewed. The between numbers represent statistics calculated across the panel averages. This means that the standard deviation across panels a little over 4, the between panel minimum of the average within panels, across time periods is .05 meaning there is at least one district with only one charter operating in only one year. The maximum average charter count reaches over 70 in Los Angeles Unified School District. Within figures represent measures of deviation from within panel averages. Here too we see figures driven by LAUSD's large charter sector with within panel deviations there running from -62 to 129. This suggests the presence of both within panel and between panel overdispersion.

Independent Variables

Both analyses use essentially the same set of independent variables. In each model, right hand side variables are lagged one year. Below I discuss each the independent variable measure in turn[23] and present descriptive statistics for the estimation samples[24] used in the discrete time hazard (Table 4.4) and count models (Table 4.5).[25]

[23] For descriptive statistics on independent variables I present tables of not-filled and filled independent variables for each relevant sample in Appendix A.

Table 3.4: School District Years for Hazard Models - Descriptives for Independent Variables (With Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	11.63	18.17	1.00	1219.00	11,744
Max Between School Distance	5.49	7.34	0.00	49.97	11,693
% Black Students	3.60	5.82	0.00	76.88	11,744
% Latino Students	34.08	27.38	0.00	99.65	11,744
% Teachers with MA	31.09	14.35	0.00	100.00	11,740
Public Student Teacher Ratio	21.46	3.27	0.00	37.15	11,741
Private Student Teacher Ratio	9.85	9.13	0.00	41.00	11,622
District CST Performance	0.12	0.48	-3.58	1.87	11,744
Years Since Law	8.12	5.41	0.00	18.00	11,744
Years Since Law Sq	95.16	97.46	0.00	324.00	11,744
# State/Co. Authorized Charters in Co.	0.49	1.03	0.00	9.00	11,744
State/Co. Authorized Charters in Co. Dummy	0.29	0.45	0.00	1.00	11,744
# Dist. Authorized Charters in Other Dist. in Co.	12.88	31.09	0.00	229.00	11,744
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.73	0.44	0.00	1.00	11,744
% of Non-Charter Schools in PI	5.96	17.12	0.00	100.00	11,744
Administrators Per School	1.36	0.83	0.00	6.78	11,741
Total Revenue Per Student	7.96	4.42	0.04	148.15	11,526
Ratio of Local to State Revenue	1.10	1.52	0.03	18.04	11,525
Charter - Traditional Public Performance Gap	-	-	-	-	-
% of Public Schools Alternative	1.93	5.43	0.00	100.00	11,744
% of Public Schools Special Ed	0.35	2.15	0.00	50.00	11,744
% of Public Schools At Risk	12.14	16.77	0.00	100.00	11,744
Private School Dummy	0.64	0.48	0.00	1.00	11,622
Ratio of Private to Traditional Public Schools	-0.31	0.37	-0.95	2.00	11,622
Private/Public Geographic Concentration	0.50	9.79	-0.51	517.28	11,556

Time

The passage of time is an important variable in each of the analyses in this chapter. Looking at adoption I include year dummies in order to estimate a baseline hazard and express the model as a discrete time process. Moving to expansion or counts of charters I include a continuous variable measuring the number of years since the California charter law's passage in 1992, and a squared term to capture any non-linear effects. One interpretation of this measure is exposure to the law. Neoinstitutionalists suggest that one way cognitive legitimation works is through exposure; however, this variable also captures opportunity as well. These variables are thought of as one class of controls.

[24] See Appendix A for descriptive statistics covering the whole sample and other relevant sub-sets.

[25] I also ran correlations for all independent variables, and though I don't present the results here for brevity's sake, there are appears to be minimal risk of multicolinearity in the subsequent models. These tables are available upon request.

Table 4.4: School District Years for F.E. Models - Descriptives for Independent Variables (With Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	22.84	72.78	0.00	1225.00	5,839
Max Between School Distance	8.68	10.28	0.00	50.00	5,807
% Black Students	5.26	7.37	0.00	70.70	5,839
% Latino Students	32.83	24.03	0.00	99.65	5,839
% Teachers with MA	31.44	13.91	0.00	100.00	5,835
Public Student Teacher Ratio	20.97	4.00	0.00	40.85	5,839
Private Student Teacher Ratio	11.32	8.70	0.00	40.49	5,834
District CST Performance	0.10	0.50	-3.58	1.35	5,839
Years Since Law	9.99	5.46	1.00	19.00	5,839
Years Since Law Sq	129.68	112.32	1.00	361.00	5,839
# State/Co. Authorized Charters in Co.	0.69	1.38	0.00	13.00	5,839
State/Co. Authorized Charters in Co. Dummy	0.36	0.48	0.00	1.00	5,839
# Dist. Authorized Charters in Other Dist. in Co.	16.64	32.29	0.00	245.00	5,839
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.86	0.35	0.00	1.00	5,839
% of Non-Charter Schools in PI	9.88	21.14	0.00	100.00	5,839
Administrators Per School	1.43	0.84	0.00	8.45	5,839
Total Revenue Per Student	8.39	6.01	0.23	223.21	5,728
Ratio of Local to State Revenue	0.85	0.85	0.03	7.76	5,728
Charter - Traditional Public Performance Gap	0.26	1.28	-7.81	6.88	5,839
% of Public Schools Alternative	2.19	5.34	0.00	50.00	5,839
% of Public Schools Special Ed	0.62	2.58	0.00	50.00	5,839
% of Public Schools At Risk	9.82	14.20	0.00	75.00	5,839
Private School Dummy	0.74	0.44	0.00	1.00	5,834
Ratio of Private to Traditional Public Schools	-0.39	0.35	-0.95	1.07	5,834
Private/Public Geographic Concentration	0.45	5.34	-0.51	161.75	5,816

Controls

The likelihood of charter school adoption and the size of the charter sector are both likely conditioned by the overall size of the district. Larger districts may be more likely to attract charters for a variety of factors not measured elsewhere in this analysis including more o possible charter applicants, more facilities, etc. In order to control for these factors I include measures of the size of the district in terms of the number of existing non-charter school organizations as well the maximum distance in miles between schools in the district.[26] The number of non-charter schools (the sum of non-charter public and private schools) in a district is a particularly important control. Including this variable in the model allows us to look at relative private sector size net overall district size

Market Demand

One of the key motivations for the passage of charter school laws was the failures of public school districts (real or perceived) to serve their student bodies. This includes overcrowded schools, districts with low quality teachers, poorly performing districts as well as

[26] See Appendix A for details on spatial calculations.

difficulties serving minorities and students with particular needs like special education students or those at-risk of failure, dropout, or institutionalization (Nathan 1998). I include several covariates intended to measure the pent-up demand for charters likely to exist in a given district-year due to inadequacy of schools along these quality dimensions or in terms of ability or capacity to serve historically disadvantaged groups like minorities and student groups with special needs.

In reference to minority student bodies, I include the percent of district enrollment that is black and percent that is Latino as variables in both the discrete time hazard and count models. To tap into demand stemming from low quality I include weighted averages of student teacher ratios for both public and private schools as measures of general quality. These measures are aggregated from the school level through calculating a school level student teacher ratio as the total student enrollment divided by the number of teachers at the school, and summing this number multiplied by the proportion of total district enrollment at each school across all schools in a given district-year. I also include the percent of teachers in the district with a master's degree or more to tap into the effect of un-met demand for teacher quality on charter adoption and sector expansion. Charter schools may also be in demand in places where district run public schools are performing poorly relative to other public schools on standardized tests.

In order to gauge the achievement performance of a particular district in a given year I use a weighted district mean of school level scores which I then standardize by year to create a variable measuring the district's performance relative to other districts in California at each year. Since 1998 California has tested students in grades 2 through 11 in English language arts and in mathematics as part of the Standardized Testing and Reporting program (STAR). While the testing results for individual students are not available to the public, the performance of various subgroups of students in each school is published. Because this analysis is at the district level, I must aggregate these scores up to this level. Beginning with average scores by grade for each school in a given year, I calculate the mean score for the school weighted by the proportion of tested students enrolled in each grade. For high school mathematics, students take different tests by subject. To deal with this, I first calculate a school-grade level score by calculating the average test score across test types within a grade weighted by the proportion of students in a given school-grade taking each test. With school-grade level scores for both math and English I then calculate a school-level score for each as the average across grades weighted by the proportion of total tested students at each grade.

With average scores in math and English for each school administering tests in a given school year I then compute an overall measure of district performance relative to other districts in the state in a given year. To compute this district-year level measure I take the average score in math and English across schools weighted by the proportion of total tested students in the district at each school, standardize these district-year level scores by taking the z-score of the math and English variables by year, sum the math and English scores and divide by two. This gives me the average test performance of a particular district relative to all other districts in California in each year. This measure is used to test the proposition that poorly performing

districts will be more likely to experiment with charters, and to allow for charter sector expansion.

Finally, research on charter adoption and expansion often includes some measure of the at-risk and special needs student population. These student groups are thought to be underserved by traditional district administered public schools. These measures often miss the nuance that they should only be predictive of charter growth to the extent that there are no district administered schools serving these groups. Following this logic I include the percent of a district's schools specializing in serving disabled students or students with special emotional or physical needs as well as the percent serving at risk students including community day schools, opportunity schools, and continuation schools[27].

Competition

Organizational ecology suggests that competitive landscape in terms of existing populations of schools in a district will shape the adoption and growth of charters (Glenn R. Carroll 1984). In order to measure competition between sectors I include five variables measuring existing non-charter alternative public schooling options like magnet schools, the presence, size and geographic distribution of a district's private school sector, and the performance of existing charters relative to non-charter public schools.

First, I create a measure for the disparity in achievement performance between charter schools and traditional public schools within each district in a given year. This measure is created in a few steps. I z-score the school level test scores for English and math by district-year. Then, I take these district-year level z-scored values and compute the average for charter schools and traditional public schools. Finally, I take the sum of the differences between charters and traditional public schools in English and math. This gives a measure in each district-year of the differences in the average position in the distribution of school level test scores between charter schools and traditional public schools.

Second, I include a measure of existing non-charter public schools of choice. The presence of existing non-charter public schools of choice may reduce the available resource space of charters which also rely on students with a high propensity to exercise choice. For each district year I calculate the percent of operating public schools that are alternative programs including independent study and magnet schools and include this measure in both discrete time hazard and charter school count models.

Third I include three variables measuring aspects of the balance between public and private sectors in each district year. Among these is a dummy indicating the presence or absence of private schools in a given district year, and a variable indicating the relative size of private and public sectors. I compute the variable measuring relative size by taking the ratio of

[27] Special education schools also include home and hospital schools for special needs students. At-risk schools also include adult education schools. Neither of these is included in the analysis presented as their enrollments are often not identifiable to specific sites for geographic processing or even to particular districts.

private schools to non-charter public schools and subtracting one. This variable is set to zero in district years with no private schools, has a lower limit of negative one when a district has a small private school sector, and reaches zero when there are an equal number of private and public schools. Taking these variables in concert, the coefficient on the private school dummy variable will represent the difference between a district with no private schools and one with a private sector of equal size with the public sector. The parameter associated with the ratio variable will then condition this value allowing the model to take both private school presence and relative private sector size in to account.

I also include a measure of spatial concentration of the private and public education sectors. The extent to which public and private schools are geographically mixed has implications for competitive processes. Specifically, districts in which sectors are more geographically separate will likely have more intense within-sector competition and offer less opportunity for the exploitation of resources along the boundaries of sector resource spaces. In order to examine the effect of sector spatial distribution on organizational processes I find a matrix of distances in miles for each pair of schools in a particular district-year calculating the distance between schools *r* and *c* as:

$$D_{rc} = 3963 * \cos^{-1}\left(\sin\left(\frac{Lat_r}{57.2958}\right) * \sin\left(\frac{Lat_c}{57.2958}\right) + \cos\left(\frac{Lat_r}{57.2958}\right) * \cos\left(\frac{Lat_c}{57.2958}\right) * \cos\left(\left(\frac{Lon_c}{57.2958}\right) - \left(\frac{Lon_r}{57.2958}\right)\right)\right)$$

Using the resulting symmetrical matrix of distances I find sector concentration by partitioning one half of each district-year matrix into distances between pairs of public schools, distances between pairs of private schools and distances between pairs in which one schools is public and the other is private. Using these matrices I measure sector concentration for district *i* in year *t*, SC_{it}, as:

$$SC_{it} = \left(D_{Pub_{Pri}} \Big/ \left(D_{Pub_{Pub}} + D_{Pri_{Pri}}\right)\right) * \left(\left(T_{Pub_{Pub}} + T_{Pri_{Pri}}\right) \Big/ T_{Pub_{Pri}}\right) - 1$$

where D_{Pub_Pri} is the sum of the distances between each public/private school pair, D_{Pub_Pub} and D_{Pri_Pri} are the corresponding sums for public/public and private/private pairs, and T_{Pub_Pri}, T_{Pub_Pub}, and T_{Pri_Pri} are the number of pairs of each type.[28]

Resource Dependence

Resource dependence suggests that funding availability as well as the relative power of public school districts may shape the adoption and expansion of charter schools in local districts. School districts control resource flows into traditional public schools, the creation of a new population of schools able to get funding directly from the state, and operating outside of

[28] See Appendix A for additional details on geographic calculations.

district management poses significant threat. I include three measures to assess the effect of resource availability and district dominance on charter adoption and expansion.

Districts with less funding availability may offer less opportunity for the creation of a new organizational population, but as resources decline within a particular district, there may be increased need for charters as an alternative to traditional public schools. To test this, I include the total revenue per student in thousands of US dollars in both the charter adoption model which includes between district variance as well as in the fixed effects count model which only includes within-district variation.

While overall availability of funding is important, the sources of funding are also important. Districts with higher proportions of local funding will have more control over resource flows, and may offer less opportunity for charter adoption and expansion. To test this notion I include the ratio of local revenue to state revenue.

Similarly, districts with large administrative capacity will likely be better able to control resource flows, and better able to prevent charter adoption and expansion. The size of the district's administrative staff relative to the number of schools the district is responsible for managing will condition the district's ability to control resource flows and respond to competition from charter schools, or from the private sector. I include the number of administrators per school in a given district-year as a measure of a school district's administrative capacity.

Legitimacy

Neoinstitutionalist organization theory suggests that acceptance of particular organizational forms as legitimate is key to understanding how new populations of organizations spread. In places with existing examples of these organizations, people may come to see them as more acceptable. Legitimation of new forms can also be encouraged when existing forms come under regulatory pressure. Districts experiencing a de-legitimation of traditional public schools via regulatory triggers set up with accountability legislation, and those close to other districts already authorizing charters may be more likely to adopt charters and to see sector expansion. I include four measures of the degree of charter school legitimacy in each district year and one measure of the (il)legitimacy of non-charter public schools.

In order to assess the degree to which charter school founding and operation in nearby localities affects district adoption and sector expansion, and to discern to what extent and under what circumstances charters in nearby localities provide legitimation or competition for district authorized charters I include two types of measures. First, I count the number of state and county authorized charters operating each county in each year, and assign these values to each district in the associated counties in each year. Second, for each district year I count the number of district authorized charters operating in other districts in the county. In order to test the idea that legitimation processes are better treated as a switch, I also create dummy variables indicating counts of one or more.

Finally, I include a measure of the degree to which traditional public schools in a district are subject to a crisis of legitimacy. In 2003, California began putting schools failing to meet Adequate Yearly Progress (AYP) into Program Improvement (PI) as defined by No Child Left Behind (NCLB). This process could encourage charter school expansion in at least two ways. First, as more schools enter program improvement, the quality and legitimacy of existing traditional public schools is called into question. A school falling into PI faces regulatory delegitimation as the state calls the adequacy of the organization in question and as more traditional public schools fall into PI the organizational population as a whole faces increasing cognitive delegitimation as the adequacy of the organizational model is challenged. Second, a key provision of NCLB allows students attending schools in PI to leave their school for other local public schools including charters. In order to measure the extent to which schools in a particular district-year are subject to questions regarding legitimacy, I compute the percent of traditional public schools in each year that are in PI status.

Interactions

In order to test propositions about the interactions between these various processes I include a set of five interaction terms: 1) I interact district test performance with the private school dummy, 2) I interact the presence of district authorized charters in other districts in a county with the private school dummy, 3) I interact the number of district authorized charters in other districts in a county with the private school dummy, 4) I interact the number of administrators per school with the ration of private to public schools, and 5) I interact the percent of public schools in a district that are alternative schools of choice with the spatial concentration of sectors variable.

Methods

The first piece of this analysis is concerned with modeling the initial adoption of charter schools. I model this as a discrete time hazard process through logistic regression with the constant suppressed. In this setup, year dummies serve as estimation of the baseline hazard with covariates moving the hazard function up and down. It should be noted that I estimate this hazard model using year dummies as the variables measuring exposure time rather than district-time. Some districts in the data were formed after the passage of the charter law in 1992, for these districts 1992 is not the first year that they were exposed to the law. Rather they were exposed later. The large majority of districts however were operating before the passage of the charter school law. Given that the interest in this piece of the analysis is in the spread of charter schools across districts in reference to the temporal event of the law's passage, I chose to approach this process using year dummies to estimate the baseline hazard. In order to deal with the fact that these models are estimated on panels, I use cluster-corrected standard errors.[29] This model can be represented by the general form:

[29] I also tried random effects logistic regression for this; though the parameter estimates were not appreciably different, and the test for significance of random effects showed that allowing intercepts to vary by district added nothing to the power of the model.

$$logit\ h(c_{it}) = [+\alpha_1 T_1 + \ldots + \alpha_T T_T] + \sum_{v=1}^{V} \beta_v x_{vit} + \ \varepsilon_{it}$$

where $h(c_{it})$ is the hazard of district i having at least one operating charter in year t. In this model, the terms in the brackets are dummy variables for each time period running from 1 to T, x_{vit} is a V column matrix of covariates and β_v is a vector of associate parameters. There is no constant included so that the effect of a given covariate is to shift the baseline hazard for a given period, determined by the relevant time period dummy, up or down (Singer and Willett 1993).

For the second piece of the analysis, I turn to modeling the count of operating charters in districts. I approach modeling the number of charter schools operating in a given district through Poisson regression. As is typically the case with empirical count data, the data in this case are overdispersed. Frequently, researchers turn to negative binomial modeling in cases of overdispersed counts (Renzulli and Vincent J. Roscigno 2005, 2005; Zhang and Yang 2008); however this is not the only approach to dealing with the issue. First, it's important to note that the consequences of overdispersed count data are models whose parameter estimates have incorrect standard errors, specifically artificially small standard errors. Negative binomial models solve this issue directly by modeling the overdispersion; however approaches operating directly on the model standard errors such as robust error estimates, can also be usefully applied to the problem (Hilbe 2011). Furthermore, the advantages of negative binomial models become less clear when applied to panel data.

Negative binomial models for panel data have a few peculiarities which should be noted. First, for processes that can be reasonably approximated as Poisson, the inclusion of random or fixed effects is straightforward, but this is not the case for overdispersed data. In the case of panel data, overdispersion is again approached through one of two possible avenues: directly modeling the overdispersion through a negative binomial model, or through estimation of a Poisson model treating the overdispersion as nuisance and controlling for it with gamma distributed random effects, or simply estimating the Poisson model with robust standard errors that can allow for correct inference even in the presence of overdispersion (Rabe-Hesketh and Skrondal 2005). Here too, overdispersion is most often accommodated through the use of negative binomial models that relax the distributional assumption that the variance of the dependent variable is equal to its mean.

Moving to a panel data structure raises a few more issues. Inter-dependent observations in count data can again be approached with either Poisson models or with Negative Binomial models incorporating fixed effects, random effects, or standard error adjustments for clustered data. A Poisson model incorporating fixed effects for panels with clustered standard errors has the attraction of being able to effectively deal with between and within panel overdispersion, making minimal distributional assumptions, and controlling for other unobserved heterogeneity in panels. As is typical with fixed effects estimators, the disadvantages are the difficulty of incorporating time invariant covariates and the disregard of

between panel variance. Panel (multi-level) random effects Poisson models can also deal with both within and between panel overdispersion, but have the typical disadvantage of assuming that random effects are uncorrelated with included covariates (Cameron and Trivedi 2010; Rabe-Hesketh and Skrondal 2005). Negative binomial estimators for panel data on the other hand have the advantage of directly accounting for within panel overdispersion, as well as allowing for between panel differences; however these models have peculiarities that make them less attractive than their Poisson counterparts. The random effects negative binomial model has the drawback that the panel-specific means and within panel overdispersion are determined by the same parameter meaning that overdispersion between panels is only possible in the presence of within panel overdispersion and visa-versa. The fixed effects or conditional analog for the negative binomial is particularly difficult to implement as it doesn't allow for overdispersion, and fails to control for all of its predictors among other problems. The approach here is to use a fixed effects Poisson model to deal with between panel differences in mean counts along with robust standard errors to deal with overdispersion within panels.

Results

Modeling charter adoption and the count of charters operating in a given district provides evidence that can be interpreted as supportive of each of the three theoretical perspectives discussed here. In fact, I argue not only that each of the three perspectives is important for understanding the expansion of the charter school sector, but that we should begin to think about how the processes detailed by each of these perspectives interact with one another to condition the initial adoption and growth of new organizational forms. Below I present results for a discrete time hazard model of charter school adoption in California school districts, as well as results for fixed effects Poisson regressions of the count of operating charters. I present results of the models in two tables. Table 4.6 shows the baseline hazard for the discrete time model, and Table 4.7 shows all other covariates for both models of adoption and counts. I cover modeling results for each of variable groupings in turn discussing results for both dependent variables. Where appropriate, I mention interactions, though these will be discussed at the end of the results section.

Baseline Hazard

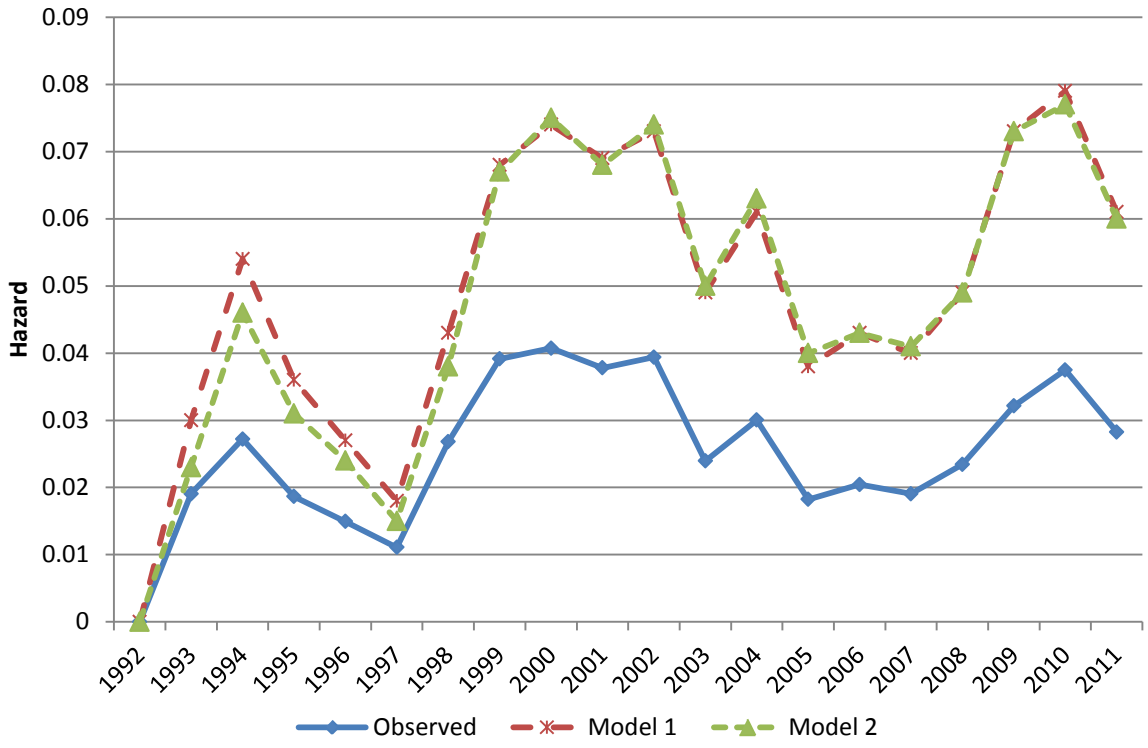
Table 4.6 shows the baseline hazard results of the discrete time model for initial charter adoption in California school districts. Model 1 includes all covariates mentioned in the section above, and model 2 adds interactions. Unsurprisingly, the results show a pattern similar to the observed hazards presented in Figure 4.3. Figure 4.4 shows the observed hazard plotted alongside the baseline hazard estimates from models 1 and 2. While there is little difference between the baseline hazard estimates in each of the models, there is a substantial difference between the discrete time hazard baseline and the observed hazard. While the pattern is the same, the baseline from the models, which control for a variety of covariates, is higher.

Table 4.5: Discrete Time Hazard Model Predicting First District Operating Charter

Variables		Model 1 expβ	Model 2 expβ
Baseline Hazard			
	1993	**0.030*** **	**0.023*** **
	1994	**0.054*** **	**0.046*** **
	1995	**0.036*** **	**0.031*** **
	1996	**0.027*** **	**0.024*** **
	1997	**0.018*** **	**0.015*** **
	1998	**0.043*** **	**0.038*** **
	1999	**0.068*** **	**0.067*** **
	2000	**0.074*** **	**0.075** **
	2001	**0.069*** **	**0.068*** **
	2002	**0.073*** **	**0.074** **
	2003	**0.049*** **	**0.050*** **
	2004	**0.061*** **	**0.063** **
	2005	**0.038*** **	**0.040*** **
	2006	**0.043*** **	**0.043*** **
	2007	**0.040*** **	**0.041*** **
	2008	**0.049*** **	**0.049*** **
	2009	**0.073** **	**0.073** **
	2010	**0.079** **	**0.077** **
	2011	**0.061*** **	**0.060** **

*Note: *p<.05 **p<.01 ***p<.001*

Figure 4.4: Observed and Estimated Hazard of Charter Adoption by Year



Market Demand

The results show little support for the ideas of functionalist driven charter sector expansion. Percent black, percent Latino, percent teachers with an MA or above, student teacher ratios at public and private schools, the district's average position on state math and language exams, percent of schools devoted to special education students, and percent devoted to at-risk students all show non-significant coefficients when predicting within-district changes in the number of operating charters. Quality indicators for existing public and private schools also seem to have little effect on charter school adoption (at least without including interactions discussed below). In fact, most of the predictors in this block are non-significant in both adoption and count models.

There are two variables that show significant effects in the adoption model. The percent of students in a district that are Latino has a significant effect on charter adoption; although the direction is reversed from what would be expect by the demand-response perspective. The effect size appears small with a one percent increase in the percent of student enrollment that is Latino associated with a reduction in the odds of adoption by about one percent. Evaluated as moving from an average Latino student population to one standard deviation above average is associated with a reduction in the odds of charter adoption of about 27%. The other significant effect among this set of variables is the parameter for the percent of district-run schools devoted to serving at-risk students. This effect is strong with a one standard deviation increase in the percent of schools devoted to at-risk students associated with a reduction in the odds of initial charter adoption of about 290%.

The reduction in the odds of adoption associated with increasing the percent of schools serving at-risk students suggests that in districts without specialized services for at-risk students, charter schools may fill this need. The negative effect of increasing percentages of Latino students on charter adoption is interesting and difficult to explain offhand. It's possible that Latino students don't present the same demands for exit from traditional public schools that other subgroups of students do. Overall these results show no support for H1, but I do find moderate support for H2.

Table 4.6: Regression Models for Initial Charter Adoption and Charter Counts

	Discrete Time Logistic Regression		Fixed Effects Poisson Regression	
	Adoption		Expansion	
	Model 1 expβ	Model 2 expβ	Model 3 expβ	Model 4 expβ
Time				
Baseline Hazard	^	^	-	-
Years Since Law	-	-	**1.319*** **	**1.319*** **
Years Since Law Squared	-	-	**0.992*** **	**0.992*** **
Controls				
Total Non-Charter Schools	**1.018*** **	**1.019*** **	**0.991*** **	**0.992** **
Max Between School Distance	1.015	1.013	**1.016*** **	**1.015*** **
Market Demand				
% Black Students	1.006	1.002	0.99	0.989
% Latino Students	**0.991** **	**0.989*** **	1.004	1.006
% Teachers with MA	0.993	0.995	0.999	0.998
Public Student Teacher Ratio	0.964	0.957	0.978	0.979
Private Student Teacher Ratio	1	0.999	0.999	0.996
District CST Performance	0.826	1.029	0.89	0.883
% of Public Schools Special Ed	1.013	1.016	0.997	0.999
% of Public Schools At Risk	**0.985** **	**0.983*** **	1.007	1.008
Competition				
Traditional / Charter CST Performance Gap	-	-	**1.050** **	**1.049** **
% of Public Schools Alternative	1.01	1.011	1.009	**1.013** *
Private Schools	1.295	**3.978** **	**0.652** *	1.605
Ratio of Private to Traditional Public Schools	0.919	**3.005** **	**0.425*** **	0.567
Private/Public Geographic Concentration	1	1.001	**0.994*** **	**0.994*** **
Resource Dependence				
Administrators Per School	1.099	0.766	**0.784*** **	**0.712*** **
Total Revenue Per Student	1.018	**1.023** *	**0.968** *	**0.968** *
Ratio of Local to State Revenue	**0.808** **	**0.813** **	0.897	0.899
Legitimacy				
State/County Authorized Charters in County	0.741	0.773	1.031	1.041
# State/County Authorized Charters in County	1.106	1.112	**1.064** *	**1.064** *
District Authorized Charters in Other Districts in County	1.319	**2.147** *	**1.302** *	**2.650*** **
# District Authorized Charters in Other Districts in County	0.997	**1.009** *	1.002	**1.005** *
% of Non-Charter Schools in PI	1.003	1.002	1.003	1.003
Interactions				
Private Schools X District CST Performance		**0.437*** **		1.055
Private Schools X District Authorized Charters in Other Districts in County		0.478		**0.443** *
Private Schools X # District Authorized Charters in Other Districts in County		**0.987** **		0.996
Administrators Per School X Ratio of Private to Traditional Public Schools		**0.481** **		**0.789** *
% of Public Schools Alternative X Private/Public Geographic Concentration		0.987		**0.985** *
N_{it}	11,418	11,418	5,664	5,664
N_i			306	306
Minimum N_i			6	6
Average N_i			18.5	18.5
Maximum N_i			19	19

*Note: *p<.05 **p<.01 ***p<.001*

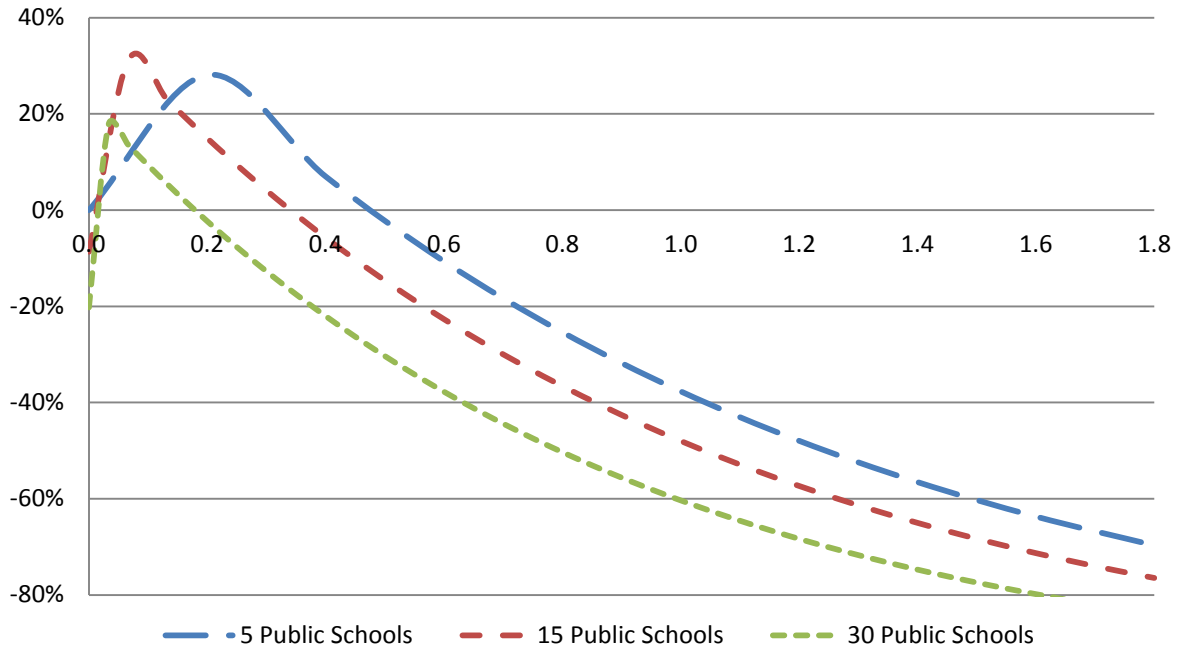
^ See Table 4.6

Competition

The variables measuring competition show interesting results. Performance of existing charters relative to traditional public schools show a significant effect on charter school counts. A combined difference in language and mathematics between traditional public schools and charters of one standard deviation is associated with a 5% increase in the count of charters. This suggests that districts in which charters are performing poorly relative to traditional public schools will see less sector expansion while those in which charters were performing well will more expansion, and lends support to H4.

On the other hand, the percent of public schools that are alternative schools of choice like magnets or independent study programs shows a non-significant positive effect on charter school adoption, and on counts; although the effect becomes significant in the count model after including the interaction term between this variable and sector concentration (more on this below). Private schools on the other hand show more complex effects.

Figure 4.5: Percent Change in Charter School Counts by Private School Sector Size - Model 3



Looking at the discrete time hazard model, the dummy variable indicating the presence of private schools in a given district year shows a positive, non-significant effect on adoptions that becomes very strong and significant once interactions are included, while the ratio of private to public schools in a district shows a non-significant negative sign that moves to a strong significant positive once interactions are included. The concentration measure shows no significant effect in the discrete time hazard model. However, moving to the count model for operating charters, both private school presence and the ratio of private schools to public show a negative effect; though these change once interaction terms are included.

Without considering interactions, the count model suggests that private schools constrict the resource space available for charter schools. Because this is a fixed effects model, it represents within district changes, so the effect of the private school dummy in this model represents the difference in charter school counts between years following those with and without private schools. Here the size of the private school sector also has a negative effect. The size of these two effects taken together suggest an interesting interpretation of private schools as both sources of legitimation for charter schools, increasing sector expansion, and as sources of competition reducing the growth of the charter school sector.

First, the private school dummy which represents the within-district difference between no private schools and an equal number of private and public schools carries a coefficient of about -35%. At the same time, the private/public ratio carries a coefficient of about -58%. The ratio variable itself takes on negative values when the number of private schools is less than the number of public schools. In order to assess the effect of private sector presence and size on charter sector expansion, we have to assess all of these effects simultaneously. Figure 4.5 above shows the percentage change in expected counts for school districts of 5, 15, and 30 public schools with private school sectors of varying sizes, relative to a district of 5 public schools with no private schools. This figure shows clearly the initial bump in expected charter counts moving from no private schools to a small private school sector suggesting legitimation of charters by private school presence. As the size of the private school sector increases, the expected percentage change in counts declines until it becomes negative. The point at which this shift happens depends upon the size of the public school sector. The legitimation bump is smaller for larger districts, and the competitive effect more acute, shifting the effect to negative at a private school sector size of 20%. This dynamic with private schools providing legitimation for charters when sector size is small and competition reducing the expectation of charter sector adoption and expansion will be explored in depth in the section below on process interactions.

Finally, the results show a statistically significant negative effect of private/public sector concentration on the number of charters operating. Increasing sector concentration from equal dispersal is associated with declining numbers of operating charters. This seems to again support the notion that private schools and charter schools are in competition with one another for students. To the extent that private schools and public schools are geographically intermixed, we observe greater counts of charters, and to the extent that they are separate we observe fewer.

Resource Dependence

Resource dependence and the administrative strength of the district also matter for charter school adoption and expansion. I've argued that districts with more administrators will exhibit less charter school growth. Administrators as a group have incentive to protect the power imbalance between themselves and the schools they oversee. If a new class of public schools not beholden to them expands in their district, the relationships of power between district and traditional public schools are called into question. This suggests that administrators

will try to slow charter school expansion in their district. The number of administrators per school has a non-significant effect on the hazard of charter adoption that shifts signs when interactions are included. This same variable has a strong, consistent negative effect in the fixed effects count model, lending support to H8. A decrease of one administrator per school is associated with an increase in the number of charters operating of about 22%. This is interesting given other tentative results suggesting that districts with more administrators per school see more charter school application submissions. These results are not incompatible. First, the political institutional critique of public education suggests that the districts in greatest need of bureaucratic dismantling through supply side intervention are those with the most top-heavy administrative structures (Chubb and Moe 1990a, 1990b). At the same time, these districts are the best positioned to restrict the expansion of charter schools (Pfeffer and Salancik 2003).

One perspective suggests that total revenue should be positively related to charter school adoption and sector expansion (Renzulli 2005). This is because new organizational populations require available resources to enter the local environment. At the same time, parents and students in districts with more per pupil funding may not see charters as necessary. This line of thoughts suggests that total revenue per student should have a positive effect on charter adoption between districts (significant in model 2) and a negative effect on charter school growth with districts. The findings here support H6 and H7.

Finally the ratio of local to state revenues shows a very consistent sign across models, though it is only significant in the models predicting charter adoption. Districts receiving more funding from sources under the control of their own administration rather than from the state or federal governments should be less likely to adopt charters and see less charter school expansion. Models 1 and 2 show increases in local revenue relative to state revenue are associated with a decrease in the likelihood of adoption lending further support to H8.

Legitimacy

There is also evidence that legitimation processes are at work in the expansion of charter schools. Looking at model 1, none of the variables measuring legitimation are significant (although adding interactions changes this). The percent of schools in Program Improvement shows a small positive coefficient in all models, though it is not significant and lends no support to H9. The presence and number of charters in other districts-in-county show no significant effect regardless of their authorization type.

Turning from adoption to expansion however, we do see some significant effects for these variables in model 3. The number of state or county authorized charters in the county has a positive effect on charter counts with each additional school increasing the count of charters by 6.4%. This suggests that state or county authorized charters provide legitimation to the sector which in turn supports districts in allowing charter sector expansion.

Evidence of legitimation processes is further supported by the effect of the presence of district authorized charters in another district in the county on the count of charters. Being in the same county as another district having a district-authorized charter has a large discrete effect. District years in which there are other district authorized charters in the county have a 30% greater expected count of operating charters than district years without nearby district authorized charters. This offers support for the idea that legitimation of charters is important for sector expansion H10. Finally, as discussed in the section above on competition, the presence of private schools seems to have a net-positive effect on charter school expansion while the growth of the private school sector restrains charter sector growth. This dynamic is in line with hypothesis H11 suggesting that private schools both legitimate charter schools, and provide competition. Adding interactions to these models makes this even clearer and shows how administrative capacity as well as can condition this dynamic.

Process Interactions

Taking the interactions between market demand, competition, resource dependence and legitimation into account is crucial to understanding their effect on the initial adoption and sector expansion of charter schools as an organizational population. The interactions between private sector presence and size, nearby charters, district administrative capacity, performance as well as alternative public schools and sector concentration will be explored through reference to four sets of figures that show their combined effects. Figure 4.6 shows discrete time hazard estimates of charter school adoption for various combinations of private school sector size, district administrative capacity and nearby charter sector size. Figure 4.7[30] shows percent changes in odds of adoption for combinations of private school sector size, district administrative capacity, district performance, and nearby sector size. Figure 4.8[31] shows expected percent change in charter school counts by district size, private sector size, district administrative capacity and nearby charter sector size. Finally, Figure 4.9[32] shows expected percent change in charter school counts by private sector size, district administrative capacity, alternative public school percentage, sector concentration and nearby charter sector size.[33]

[30] Percentage change estimates for this figure are taken from a base of an average number of administrators, no private schools, no charters, and mean achievement.

[31] Percentage change estimates for this figure are taken from a base of an average number of administrators, no private schools, no charters, and 5 traditional public schools.

[32] Percentage change estimates for this figure are taken from a base of an average number of administrators, no private schools, no charters, average % of schools alternative, and even geographic distribution of private and public schools.

[33] Figures for small/large administrative capacity, poor/high performance, small/large alternative public school sector size, and mixed/high sector concentration were calculated using values one standard deviation below/above the mean respectively. Values for small/large private school sector size were set at -.9 for small and 1 for large.

Figure 4.6: Discrete Time Hazard for Charter Adoption by Private Sector Size, Nearby Charters and Public Administrative Capacity

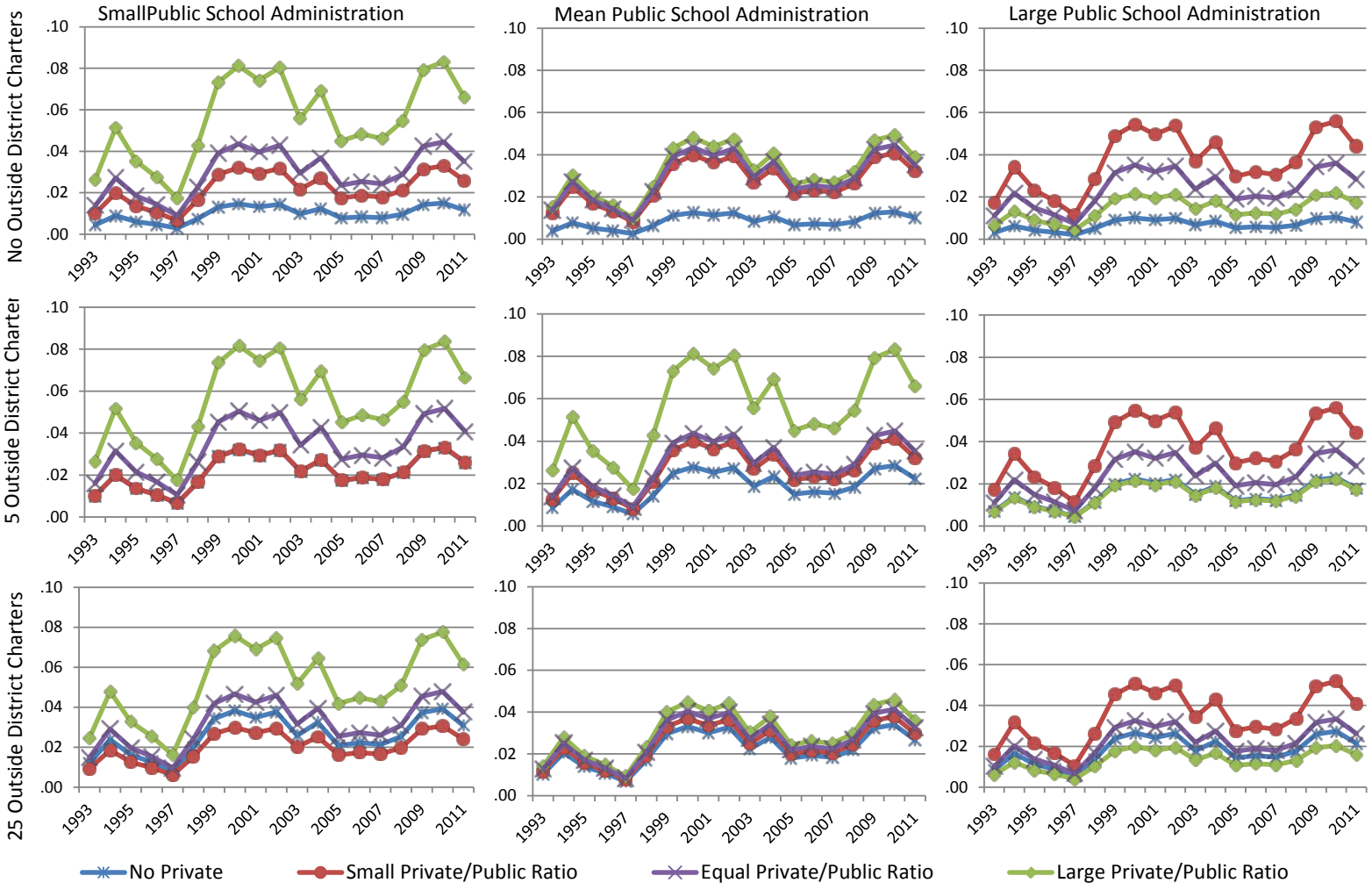


Figure 4.7: % Change in Odds of Charter Adoption by Private Sector Size, Administrative Capacity, Nearby Charters and Test Performance

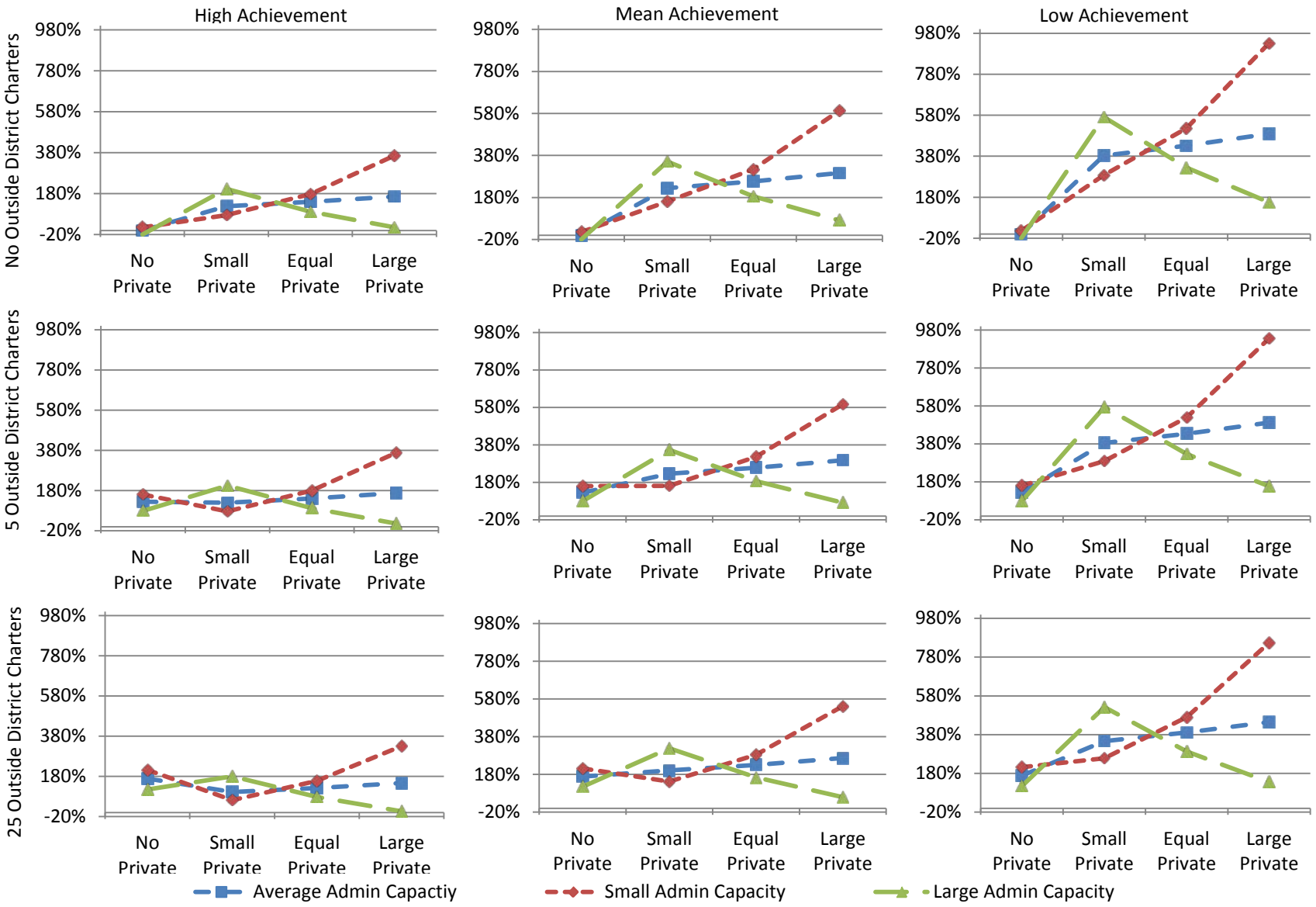


Figure 4.8: % Change in Charter School Counts by District Size, Private School Sector Size, Nearby Charters and Public Admin Capacity Model 4

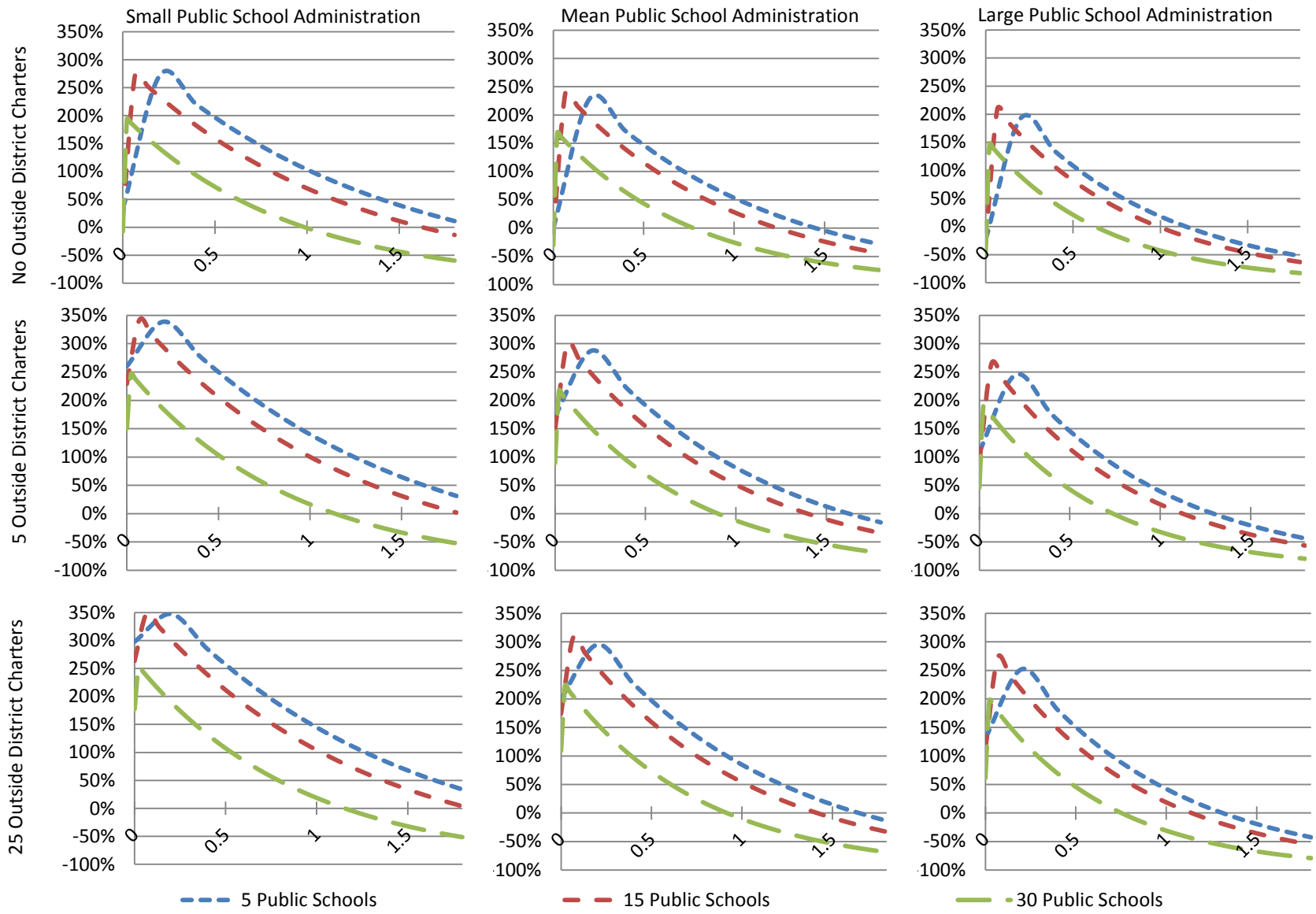
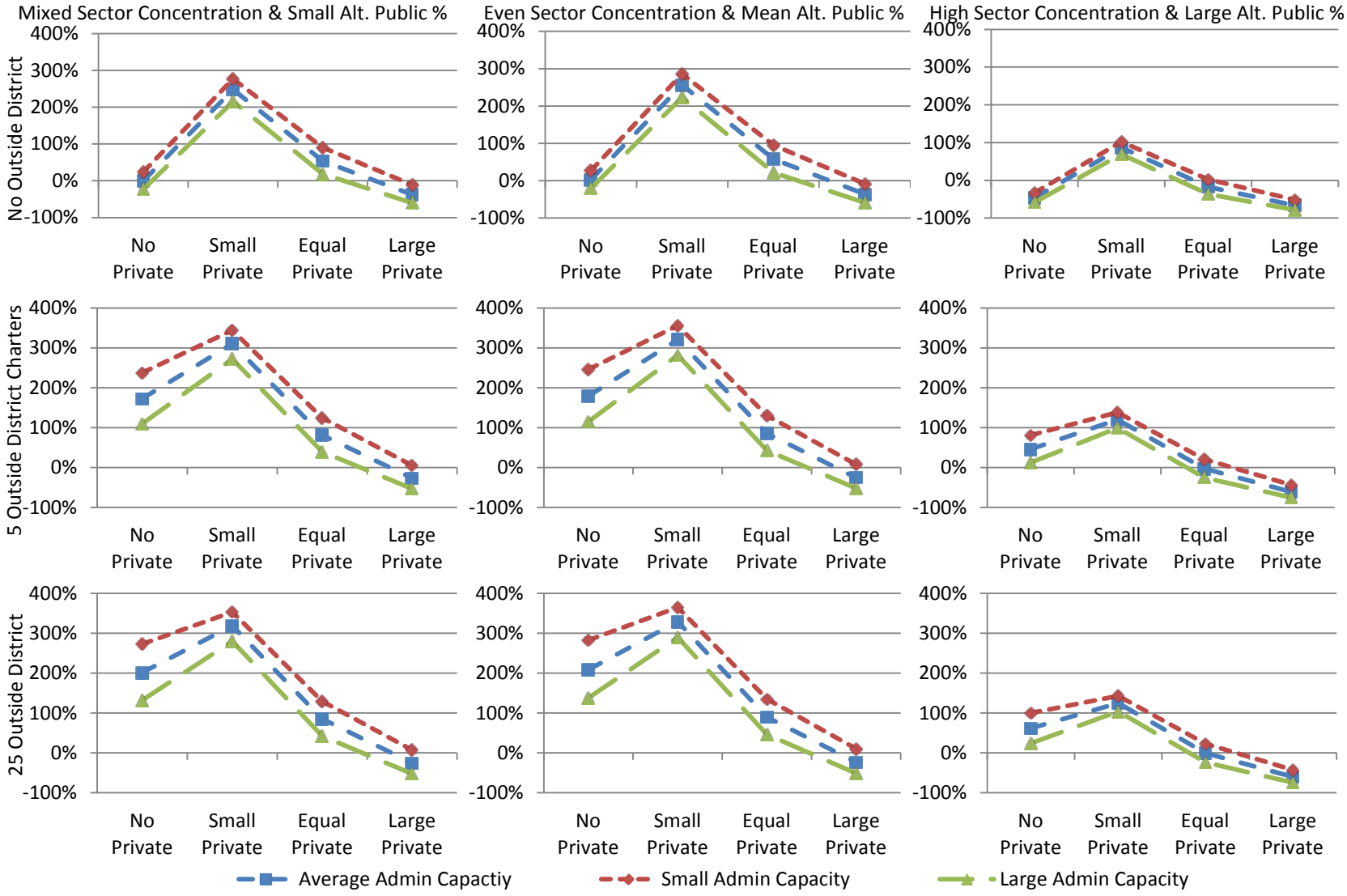


Figure 4.9: % Change in Charter School Counts by Private Sector Size, Admin Capacity, Nearby Charters and Alternative Public X Concentration



Interactions between private school presence and district authorized charters in nearby districts show evidence of legitimacy substitution. In both adoption and expansion models, the interaction between private school presence and the presence of district authorized charters in nearby districts carries a negative coefficient, though the interaction is non-significant in the adoption model. In each case, including this interaction results in a large positive and significant coefficient for the charter dummy and a large positive coefficient for the private school dummy, significant in the adoption model and non-significant in the count model. This combination suggests a positive effect on charter adoption and growth of private schools and of nearby charters, but a reduction in this effect if both are present. Nearby charters thus spur charter adoption and growth, but do so primarily in districts without existing private school sectors. The strength of this legitimation effect appears to be driven largely by charters school presence rather than marginal impact of additional charter. In the case of adoption hazard, each additional charter adds about 1% to the hazard of adoption; though this is canceled out in districts with private schools. Simple presence on the other hand increases the odds of adoption in districts without private schools by 115%. A similar dynamic is present in the coefficients for these variables in the count model.

The focus of the nearby charter legitimation effect on districts without private schools can be seen easily in the case of adoption hazard by comparing figures moving down rows in Figure 4.6 looking at the series line representing districts without private schools, and for the case of charters counts by focusing on the intercept moving down rows in Figure 4.8. Moving down rows in Figure 4.6 shows increases in adoption hazard for districts without private schools. Likewise, moving down rows in in Figure 4.8 shows large percentage increases in the expected count of operating charters at the intercept; indicating nearby charters have a legitimating effect concentrated in districts without private schools. Overall, these findings support H13.

Turning to interactions between private sector size and district power as measured by administrative capacity also shows interesting effects. Administrative capacity shows a significant and strong negative interaction with the relative size of the private school sector in both the count model and the adoption model. Including this interaction transforms the main effect of private sector size in the adoption model from a small negative to a large positive. This combination of factors suggests that in districts with small per school administrative capacity, the size of the private school sector is net-positively related to charter adoption, but as administrative capacity increases, the effect of private sector size becomes negative; though the dummy for private sector presence still puts districts with a small private school sectors at greater risk of charter adoption than those without private schools. One possibility is that if private school sectors force public schools to compete (Arum 1996), districts with large administrative capacity will have increased incentive and ability to restrict the charter school sector in the presence of large private sectors crowding the resource space. At the same time, district administrative capacity in the context of small private school sectors, offers a visible opposition for charter advocates while private schools offer legitimation in the form of existing alternatives without the size to pose competitive threat to prospective charters. In this

situation powerful districts with ample resource space may not see burgeoning charters as real competition.

Weak districts on the other hand, show a positive relationship between private sector size and adoption hazard. This suggests that in administratively weak districts the size of the private school sector increases the legitimacy offered by private schools to charters. If administratively weak districts are poor competitors, and districts with smaller administrations are unable to restrict charter growth, private schools may provide legitimation to charters while the competition charters would otherwise see from existing public schools sectors is lessened. Alternatively, administratively weak districts facing large private school sectors may see authorizing charters as putting competitive pressure on private schools.

These dynamics are apparent moving across columns in Figure 4.6., and comparing lines within sub-figures in Figure 4.7. Figure 4.6 shows that in districts with large administrative capacity, charter adoption is most likely with a small private school sector, and districts with a large private school sector show a likelihood of adoption that is about the same as those without private schools. This is also reflected in the inverse-U shape of the lines representing districts with large administrative capacity in Figure 4.7. At the same time, looking at districts with weaker administrative capacity in Figure 4.6 shows that adoption hazard is highest in districts with large private school sectors. Again, this same pattern is reflected in Figure 4.7 in the nearly-linear positive relationship that the line representing districts with small administrations shows with private sector size.

The dynamic changes a little when turning to the count of charters. Here, including the interaction between private sector size and administrative capacity results in a main effect that remains negative as well as a negative interaction effect. This produces the same dynamics in districts with larger administrative capacity as we see with regard to adoption hazard, but doesn't produce the same positive effect of private school sector size at low levels of administrative capacity. Looking at Figures 4.8 and 4.9 this is evident. Moving across columns in Figure 4.8 and comparing lines within sub-figures in Figure 4.9 shows that at every level of relative private sector size, increasing administrative capacity is associated with a reduction in the expected count of charters. The fact that the positive relationship between private sector size and initial charter adoption at low levels of administrative capacity is not replicated with counts suggests that the increased legitimacy provided by having a robust private school sector carries the price of competition into the dynamics surrounding the expansion of a new organizational population. Overall, these dynamics are supportive of H14.

Looking at the interaction between district testing performance and private sector presence, there is evidence of a significant negative effect on adoption. District performance has a strong negative effect on charter adoption, but only in the presence of private schools. For districts with private schools, being a combined one standard deviation below the mean performance on standardized tests is associated with a 56% increase in the odds of charter school adoption; although neither the interaction nor the main effect of test performance is significant in the model for charter school counts. The effect of district performance on

adoption can be easily seen by moving across columns in Figure 4.7. These results suggest that the initial birth of charter school sectors in school districts is a response to poor performance on the part of public schools, but only in districts with existing alternatives in the form of private schools, supporting H12. In the absence of such apparent alternatives, poor district performance has no effect, but in the presence of legitimate alternatives, poor performance creates demand for additional alternatives in the form of charters. This demand however doesn't extend to driving sector expansion, but instead is confined to adoption.

Finally, the coefficient for the interaction of sector concentration and the percent of public schools that are alternative schools of choice is small and negative in each model; though non-significant in the model for adoption. In terms of sector expansion as measured by counts, this effect is actually quite large. Holding all other factors constant, a one standard deviation increase in sector concentration from even private/public geographic distribution combined with a one standard deviation increase in the percent of public schools that are alternative schools of choice from the mean (2%) reduces the expected charter count by 42%. This dynamic can be readily seen by moving across columns in Figure 4.9. Increasing concentration of public and private schools within a district over time has a negative effect on the expansion of charter schools and the negative interaction between the geographic concentration of sectors and the percent of non-charter public schools that are magnets or other alternative schools of choice suggests that in districts with larger degrees of geographic sector segregation, pre-existing public alternative schools narrow the potential resource base of charter schools by limiting the number of spatially advantageous locations. This result supports H15.

Discussion & Conclusion

Charter schools are a rapidly growing organizational population both on the national stage and in the state considered here, California. In this context, charters have been the subject of a similarly rapidly growing body of research in economics, sociology, and education. While much of this work has focused on the effects of charter schools on student test scores, a small body of research, primarily in sociology, has focused on political and organizational questions surrounding charter schools including the passage of charters school legislation, the adoption of charter schools as a local policy innovation and on the spread of charter schools and growth of the sector. This chapter has contributed to this body of research by examining the adoption and expansion of charters schools in California at the district level, focusing on how market demand, as well as the inter-organizational processes of competition, resource dependence, and legitimacy have shaped their emergence and growth.

The results here suggest that market demand is not a useful explanation for the diffusion and growth of charter schools within and across California school districts. Instead, we need to turn to inter-organizational processes to understand when and where this new organizational population is growing. The competitive landscape in terms of the presence and size of the private school sector, legitimation via nearby charters, as well as resource availability and control in terms of financial resources, district control of funds, and district administrative

capacity all shape the birth and growth of this new organizational population. Furthermore, these processes (competition, legitimation, and power/control) interact with one another in important ways.

I have shown that in small numbers, private schools increase the odds of adoption as well as the expected counts of charters. This suggests that legitimation of charters through the presence of alternative forms of schooling is important from promoting charter sector growth. Furthermore, in districts without private schools nearby charters fill this role. However, a small private school sector and nearby charter sector are legitimacy substitutes in the sense that nearby charters only matter in the absence of a private school sector in-district. This finding suggests that legitimation processes most closely associated with neoinstitutional theory are at work, but need to be tempered in accounts of the emergence of new organizational forms.

Typically, researchers think of cognitive legitimation resulting in organizational expansion via mimetic isomorphism. That is, as a particular organizational form gains acceptance as a taken-for-granted or at least reasonable way to achieve a particular social goal, the form will spread with new organizations appearing mimicking this organizational form. In this explanation, the presence and abundance of the organizational form creates a legitimation momentum for the form. In the case of California charter schools however, we see that while having charters in other nearby districts does indeed promote growth of the organizational population, this effect is strongest in districts without private schools.

This casts doubt on the most elementary take on legitimacy as symbolic support lent to organizations by others of their kind (most notable in the concept of legitimacy found in work in the organizational ecology tradition). Instead it suggests a more nuanced perspective in which the very presence of alternatives lends support to the addition of yet another organizational alternative. In relatively uniform organizational fields dominated by a particular organizational form, the presence of new alternatives nearby promotes diversification, but only in the absence of exiting alternatives, in this case private schools.

Legitimation as an explanation for charter school expansion appears to have some merit, but power is also clearly at work. The size of district administration and funding control both restrict the expansion of charter schools. As districts shrink in administrative capacity, and funding shifts from dominance by districts to state sources, charter schools sectors expand and grow. Districts with strong administrations and large funding streams relative to state sources show less sector growth. This dynamic suggests that the power of the district is a key check on charter sector growth and expansion, as if charter growth was being driven by demand for more responsive schools rather than district power, we'd expect larger administrative capacity to promote charter growth.

The dynamics of both power and legitimation that structure charter expansion must be viewed in the context of the competitive organizational landscape. At small sizes, private school sectors provide legitimation, but as the sector grows relative to the public sector competitive dynamics take hold with regard to support for charter schools suggesting a switch from

symbolic support operating through cognitive processes to inter-organizational competition. This dynamic is conditioned by district administrative capacity however. Private sector size is negatively related to adoption and expansion, but particularly in districts with large administrative capacity. The interaction of district power with the competitive landscape and the switch from processes of symbolic support through cognitive legitimation to inter-sector competition structures the emergence and expansion of charters sectors. Districts with smaller administrations may be friendlier to charter schools when there is a large private sector presence. In this context, charter sector expansion may be one way districts try to compete with private schools.

Finally, demand is conditioned by local conditions, particularly the competitive landscape. These results suggest that charter schools aren't expanding in response to indicators of market demand. The exception is test scores which, in the presence of private schools, have a powerful effect on the initial adoption of charters. Poorly performing public school districts with private schools are much more likely to show charter school adoption than those without private schools, while highly performing districts with existing private sectors are much less likely to see charters emerging. In the absence of a private school presence, achievement performance has no impact on the adoption of charters.

These results suggest that each of the organization-theoretical perspectives discussed here has merit. Legitimation is important for charter school expansion in districts without an existing private sector. In these districts, the appearance of charters nearby spurs growth of new charter sectors. In districts with existing private sectors, legitimation is still important, but only as long as the private sector is small. In this context private schools provide support for charters in the form of an existing alternative to traditional public schools legitimating another alternative. In districts with larger private sectors however, the story quickly changes from symbolic support to competition. Districts with more established private school sectors offer smaller resource space for charters to grow. However, this competitive dynamic is conditioned by the power of the existing public school district. In cases of elaborated public district administration and large private sectors, competitive dynamics can squeeze charters out of the field. On the other hand, when district administrative capacity is weaker, a large private sector can encourage charter growth as districts can't compete with private sector schools and may turn to charters as an alternative education vehicle.

More broadly, these findings highlight the complexities of inter-organizational dynamics and the need to approach them by taking into account legitimacy, competition, and organizational power and control. The emergence and expansion of charter schools is one example of this, but other areas of change in contemporary public education are ripe for analysis from this perspective. Some districts are moving to portfolios of school types, of which charters and magnets or other alternatives are a part. Diversifying teacher training programs and recruitment pathways are remaking the labor markets for educational professionals in local school districts. Strategic action on the part of districts vis-à-vis unions, charter management organizations, and the restructuring of teacher flows from training programs into schools of various types are just two examples of institutional changes is that are also likely conditioned

by interactions between processes of legitimation, competition and power. Charter schools provide a great opportunity to examine the effects of inter-organizational processes on the emergence and expansion of a new organizational population; however public education offers a significant number of far-reaching institutional changes that can be usefully approached through a sociology of education informed by a focus on the interaction between inter-organizational processes described by theoretical traditions that have typically been viewed as alternatives to one another.

Chapter 6 - Student Movement in a Diversifying Organizational Field

Introduction

Until recently, the frequent movement of children from one school or neighborhood to another was viewed negatively. Research showed that student movement damaged social ties for pupils and families, and that frequent movement was driven by class position, exacerbating the stratification of educational opportunity (Kerbow 1996; National Research Council and Institute of Medicine 2010; Rumberger and Larson 1998; Rumberger 2003; Wehlage and Rutter 1985; Wehlage et al. 1989)(Kerbow 1996). However, with the rise of parental choice and the market-oriented expansion of school options over the past half century (John F. Witte and Clune 1990), attendance is often detached from neighborhoods, as policy makers count on student movement to drive competitive pressure on schools (Cookson 1994). Emphasizing that absent residential attendance boundaries student movement may be driven by differences in school quality, this view sees movement as encouraging competition, boosting quality, and aligning school behavior to family preferences (Hanushek et al. 2007; Hanushek, Kain, and Rivkin 2004).

This chapter puts forward a third account of student movement incorporating the dominant frame that mobility stems from class inequalities, and the recent reframing of movement as market necessity with an account of student movement as a locally situated event conditioned by a student's progress through a grade structure; the student's race, social class and performance relative to peers; as well as the locally varying range and qualities of alternative school options. As the local organizational fields of education become increasingly heterogeneous, particularly in large urban districts, and the traditional residential ties binding students to their local schools become easier to bypass in favor of non-traditional public schooling options, the forces driving student movement expand to include new types of local organizations. This chapter emphasizes that the likelihood of student movement stems not simply from the individual student or family characteristics or even those of the school they're leaving behind, but instead from the student's embeddedness in the social fabric of the school, their status relative to school peers, and in the face of expanding organizational diversity, the heterogeneity of alternative organizations.

This chapter proceeds in four parts. First, the dominant accounts that partially explain the propensity of students to exit one school for another are reviewed. Second, extant sociological theory is leveraged to put forth a more complete account, stressing the theoretical importance of social comparison in a student's immediate social context. Third, propositions drawn from this novel account are tested using a longitudinal data set that tracks elementary and high school students in Los Angeles from 2002 to 2008. Finally, implications of the chapter's findings for how we think about the effects of institutional change spurring organizational heterogeneity in public education on the behavior of students and families in these fields are discussed.

Dominant Accounts of Student Movement

Race, and Class as Drivers of Movement

Traditionally, the movement of students between schools prior to completing a grade cycle has been defined as a severe problem for urban communities. This line of work emphasizes that movement is associated with job loss or housing instability, disproportionately faced by low income families (Been et al. 2011; Burkam, Lee, and Dwyer 2009; Crowley 2003), poor academic performance (Rumberger and Larson 1998), low levels of parental education (Swanson and B. Schneider 1999), and ethnic minority status (Newman and Owen 1982).Attending schools with low levels of social cohesion or material resources also increases the likelihood of movement (J. Coleman 1988; Kerbow 1996; Rumberger 2003; Wehlage and Rutter 1985; Wehlage et al. 1989). Research in this vein has revealed the negative effects of movement, including behavioral and academic difficulties after switching schools, and detrimental effects on peers in schools with high concentrations of transient students (Alexander, Entwisle, and Dauber 1996; Gibbons and Telhaj 2011; Gruman et al. 2008; Hanushek et al. 2004; Pianta and Early 2001).

Underlying this theoretical tradition is the notion that student movement stems largely from reactive transfers in which the individual parent responds to forces beyond their control, or where schools push out students with problematic behavior (Rumberger 2003). In this causal representation, student movement is driven by the class status of individual families and operates the same way across highly variable local organizational contexts. Economic exigencies associated with the individual family's position in the class structure trigger student movement, and do so absent any locally situated comparison between one's child and peers, and without regard to the mix of schools nearby that may offer stronger opportunities.

Search for School Quality as the Driver of Movement

A second, positive view of movement has emerged in recent years as government and private foundations have expanded market-like mechanisms, such as liberalized parental choice policies, and have built an increasingly differentiated organizational field. This policy effort focuses on the development and expansion of new forms of organization (e.g., magnet, charter, and pilot schools), and on lowering the barriers to choice posed by residential attendance boundaries (through open enrollment, tax credits, and tuition vouchers). Through these reforms, policy makers intend to leverage strategic transfers to introduce competitive pressure on all schools, spurring quality gains and facilitating response to family preferences.

If parents can select higher quality schools or institutions that provide a better match with their child's interests, then, as dollars follow students, local educators will respond to these incentives by devising innovative ways to improve student performance (Chubb and Moe 1990a). Here, movement is driven by parents optimizing their individual interests, switching schools when their current school is staffed by low quality teachers, is overcrowded, or exhibits low test scores. These reforms have proven to be popular with over one-fourth of all students

in the U.S. who now attend a school outside their official attendance boundary (Planty et al. 2009).

A Social-Relational Account of Movement: The Role of Time, Peers, and Local Options

This chapter argues that student movement is determined by a student's relative position within their present school, as well as by nearby organizational alternatives. The idea that aspects of the student's school affect the likelihood of movement is recognized by the two prior perspectives (Hanushek et al. 2004; Wehlage et al. 1989). However, neither tradition recognizes how exit from a school is shaped by the time a student has spent in a particular school, features of the student in relation to peers, the student's current school relative to other proximal options, or the character of this choice set. We emphasize that earlier accounts have weighed the effects of student or family attributes independent of social comparison processes and the local organizational field.

A more complete account must recognize that the decision to switch schools results from the student's status or position relative to nearby peers, and is motivated by the pursuit of higher status in the local field (Bourdieu and Wacquant 1992). While status competition has long been seen as a determinant of the historical rise in demand for schooling (Fuller and Rubinson 1992) it has not been applied to accounts of micro-social unit behavior in the context of larger fields. In this case, such perspective stresses that the choices of families are made: 1) within institutionalized grade cycles that normatively structure the years a student is expected to spend in a given school, 2) within the social context of proximal peers, and 3) within the arena of the immediate organizational field.

Prior work on mobility draws heavily from theoretical accounts of dropping out of school (J. Coleman 1988; Rumberger and Larson 1998; Tinto 1994; Wehlage and Rutter 1985), and emphasizes how schools serve as institutional settings in which social ties develop among peers, between students and teachers, and between schools and neighborhoods. These ties root students in schools and temper the risk of exit. While this work draws on notions of social integration and social capital, it fails to recognize the role of time in developing these social bonds. We conceive of student movement as an event that unfolds at the intersection of two social times: time spent in school and progress through a school's grade structure.

Earlier work confirms that the degree to which any given student is potentially tied to peers and teachers at their school is structured by the time the pupil has spent there. As students spend time in at a particular school they accumulate knowledge, build skills, and form social ties with teachers and peers (Schneider and Coleman 1996; Fuller and Hannum 2002). These bonds constitute friendships, mentoring relationships, and relations of trust. The dissolution of these ties accompanying a school switch may generate significant costs in terms of lost relationships. When students exit mid-stream these peer relations are severed and the accompanying disruption may reverberate across classrooms and peer networks (Rumberger and Larson 1998).

H1: Movement hazard will be highest when a student first begins at a given school, and will decrease as more time is spent at this school.

Time spent in a particular school coincides with normatively defined grade progression. Typically for each school year spent in a school a child advances one grade until reaching the highest grade offered. Entering a school in a particular grade at a specific time defines a student's cohort and their peer set. However, not all students follow the normative track of advancing one grade per school year. Some students repeat grades if their accumulated knowledge or skills are inadequate, while others skip grades. Atypical grade progression may carry significant social costs, with students who skip grades or who are left behind suffering strained social bonds (Jacob and Lefgren 2009).

H2: Movement hazard will be higher for students who are retained or skip grades, and will increase with the number of grades ahead of or behind of their original cohort.

Both dominant theoretical frames agree on who is most likely to change schools: poorly performing students attending low quality schools. Poor and minority students are more likely to attend schools suffering from resource shortages, overcrowding, and less qualified or experienced staff (Jencks and M. Phillips 1998) . Furthermore, the movement-as-problem tradition emphasizes that low achievement is associated with higher rates of mobility and eventually dropping out (Rumberger 2011). The movement-as-choice perspective remains agnostic on the importance of student achievement in spurring mobility, but the search for higher quality schools implies that parents consider their child's achievement when deciding whether to switch schools. The same logic that students in poorly performing schools are more likely to move, searching for higher quality schools, implies that low achieving students will be more likely to switch schools, searching for a better match (C. M. Hoxby and Murarka 2009).

At the same time, other findings show that relatively advantaged families are more likely to exercise school choice in certain local settings (Archbald 2000; Lee et al. 1996; M. Schneider, Teske, and Marschall 2002)(Archbald 2000; M. Schneider et al. 2002). Parents are better able to work local school markets when they have discretionary time, extra resources to deal with transportation costs, and are tied to social networks rich in information about school quality or even particular teachers
(Schneider, Teske, and Marschall 2002; Fuller and Elmore 1996). These advantages become even more important as demand for alternative school organizations, especially for charter and magnet schools, has risen in low-income communities (Fuller 2000), particularly among two-parent families and those with better educated mothers (Furgeson et al. 2012; Howell et al. 2006).

Neither of the dominant perspectives on movement is well equipped to account for high mobility in schools serving poor children, along with higher rates for more advantaged students. One possibility is that this stems from inattention to the relational nature of social comparison processes in the family's local context. Below, three settings in which attention to

the student's or the family's relational context will offer a better understanding of student movement are considered: achievement, race and socioeconomic status.

Student performance, race, and socioeconomic status matter, but primarily through social comparison processes, as parents consider their child's position relative to nearby peers or salient norms. Similarly, organizational qualities shape individual action, but do so in relation to individual attributes. In order to understand how both individual and organizational variables effect movement they must to be seen as having their effects in interaction with one another. For example, we suggest that students perceive their performance in school relative to other peers, as do their teachers (Mounts and Steinberg 1995; Stanton-Salazar and Dornbusch 1995). In the same vein, the force of a school's racial or class composition in prompting exit depends upon the student's own background and homophily vis-à-vis peers (Wells 1996).

It's the student's or family's position in a local field (e.g., the school or neighborhood) and the implied relationships with other actors and institutions in the field that drives the likelihood of switching schools (Bourdieu and Wacquant 1992). For example, students in disadvantaged schools may be more likely to exit if their parents are relatively better educated, while students whose parents are less educated, but who attend more advantaged schools may be less likely to move than their peers. Under this relational formulation, more advantaged students at schools with lower status student compositions will display the highest likelihood of movement, while the least advantaged students at the most advantaged schools will be less likely to move.

H3a: Students from families with lower socioeconomic status will be more likely to move, but to the extent that their socioeconomic status is below their school's mean, they will be less likely to move.

H3b: Students from families with higher socioeconomic status will be less likely to move, but to the extent that their socioeconomic status is above their school's mean, they will be more likely to move.

This social-comparison approach can be extended to test whether students exit schools at higher rates when their own race is underrepresented in the racial mix of their particular school (Saporito and Lareau 1999; Weiher and Tedin 2002). We argue that the effect of race on the likelihood of a pupil leaving their school is conditioned by the racial composition of their school, and motivated by the pursuit of homophily. Similarly, we argue that one's status position is signified by achievement relative to proximal peers, not by some absolute level of performance. If substantiated empirically, this would help to explain why in some cases scholars have observed higher propensities of student movement among affluent families, while in other cases poor families are more likely to change schools.

H4: As the proportion of students in a school in the same race or ethnic group as a given student increases, that student's likelihood of movement will decrease.

H5: The lower a student's achievement relative to her peers, the greater the likelihood she will move from one school to another.

Finally, prior accounts of movement argue that pupils are more likely to exit lower quality schools, but neither takes local inter-organizational context into account. Families see a range of schools in their local area with varying organizational qualities and performance outcomes. As the institutional landscape of public education has changed, particularly with the advent of accountability policies generating published information on school-average testing performance, and with the fracturing of traditional institutionalized inter-organizational relationships in public education giving rise to organizational diversification, the dynamics of local organizational fields have become varied and the forces generating momentum for school switching through information and opportunity have increased in intensity. The broad changes in public education discussed in earlier chapters alter the dynamics of student movement in two ways: by creating widely accessible indicators of performance and by creating new types of schools that have diversified local organizational ecologies.

On the one hand, schools viewed as low quality are populated by disadvantaged students and may indeed receive fewer resources than effective schools. To the extent that parents have information about the quality of schools, we would expect greater movement from schools with less qualified teachers, larger class sizes, and low-achieving students. Still evidence that families use relative school quality indicators when deciding whether to switch schools is sparse. The effect of school quality on the likelihood of student movement depends upon the relative levels of quality seen among alternative schools located nearby. Just as we place the student in a relational field with peers, we suggest that the school organization's qualities are weighed relative to proximal schools within the view of parents (Bourdieu 1992; Scott et al. 2000). In turn these hierarchies of local school quality will structure pupil movement between schools by defining comparative desirability. If this is the case, we expect pupils attending schools closer to the bottom of the local quality hierarchy to exhibit greater likelihoods of movement than those toward the top.

H6: Students are more likely to move from their current school to another when nearby schools display higher quality indicators.

Putting schools in the context of a local quality hierarchy suggests that other aspects of the choice set may be related to student movement. In addition to liberalizing the ability of parents to choose schools outside of local attendance boundaries, government and private foundations have financed a variety of new school types, reshaping local organizational fields (Huerta et al. 2011; Lubienski, Gulosino, and Weitzel 2009). Urban families and students are now embedded in neighborhoods that vary in terms of the schools from which parents are able to choose. We argue that both the individual- and organization-level factors predicting movement are mediated by this local ecology of school organizations. Just as a student's school is situated within a local quality hierarchy, the extent of organizational options available locally, as well as the diversity of available organizations are local characteristics. Three key aspects of

local organizational populations will condition student mobility: proximity of schools to one another, abundance of alternative choices, and the diversity of choices.

There is virtually no literature on how organizational ecology may affect student movement, although initial evidence suggests that the proximity of options affects movement (Ledwith 2010). While the steady rise of charter schools implies an initial shift in student movement, we don't know whether the growth in the number of such options sustains greater levels of movement overall. Likewise, we know little about how the diversity of schooling options may effect movement, though evidence from the health-care sector suggests that the heterogeneity of local organizations may drive movement of clients beyond the sheer number of health-care providers in a particular area (W. Richard Scott et al. 2000).

The proximity and count of alternative school organizations has the potential to shape movement by structuring the number and feasibility of nearby options. Nearby schools are more likely to make it onto a family's menu of feasible options, and as this menu becomes longer, movement is more likely. Conversely, schools or groups of schools which are geographically isolated, or close to a small number of alternative schools should exhibit lower levels of student movement.

H7: As the distance between a student's current school and the nearest school offering the relevant grade increases, likelihood of movement will decrease.

H8: As the number of schooling options in a given area increases, the likelihood of student movement will increase.

Within a given local population of schools, the extent to which the options in a choice set are viewed as distinct alternatives may also effect movement. For example, a family in a neighborhood with a charter, magnet, private, and traditional public high school could see themselves as having more options than a family in a neighborhood with four traditional public high schools. Research on student movement has had little to say about how the diversification of school forms accompanying pro-choice policies, including private schools both religious and secular, public schools of choice such as charters and magnets, as well as traditional public schools, may alter the propensity of students to switch schools. Whether or not diversification affects movement and how depends upon the extent to which families perceive various types of schools as substitutes, rather than viewing them as fundamentally different from one another. On the one hand, having a diverse array of school organizations to choose from may spur greater student movement: offering students variety may induce switching to obtain better matches with student or family preferences. On the other hand, market segmentation may arise: increasing organizational diversity may depress student mobility if families don't view the different types of schools as substitutes for one another.

H9: Students attending schools in areas with greater organizational diversity will be more likely to move.

Student Movement in Los Angeles: A Diversifying Organizational Field

This chapter tests the efficacy of a social-relational account of movement empirically with longitudinal data from the Los Angeles Unified School District (LAUSD), the nation's second largest system. This urban district, like many others, has liberalized parents' ability to legally enroll their child in a school outside their designated attendance boundary, while encouraging the growth of a diverse array of alternative schools. The count of charter schools, for instance, climbed over the study period from 53 in 2002 to 157 in 2008, reaching one-fifth of all schools in the district. Pent-up demand among parents, disaffected with overcrowded and at times dangerous schools, has resulted in long waiting lists for spots in magnet schools and other semi-autonomous schools.

By 2009 a diverse mix of school organizations was thriving across the L.A. district including 173 magnet programs, and 161 charter schools, and over 60,000 families, opt to avoid their assigned school while staying in a traditional public school by applying for a coveted intra-district transfer seat each year. At the same time, a majority of children on the better-off west side of Los Angeles now attend private schools. Influential private actors continue to fund the expansion of school alternatives, primarily in low-income areas of the district. This includes the Broad and Gates foundations, which are major funders of CMOs (Charter Management Organizations), firms that opened-up new charter schools or simply took over management of regular public schools from the downtown district office (Russo 2011). All of this has emerged within the context of steady white-flight from the district. In 1965 almost two-thirds of the district's students were (non-Latino) Whites. By 2006 almost three-fourths of the district's 700,000-plus students were of Latino origin, spread across about 885 schools (Charles Taylor Kerchner et al. 2008).

Data, Methods & Measures

The student movement framework presented in this chapter first asserts that student movement is best understood in its temporal context; second, that the effect of individual characteristics and family backgrounds on movement are conditioned by the character of the student's peers on these dimensions; third, that the impact of school quality on movement is conditioned by the relative quality of other proximal options; and finally, that the character of the local market in terms of organizational diversity, abundance of options, and proximity to these alternatives will condition movement. Reconceiving of student movement as an event taking place within the process of a student's progression through time in school, this analytic approach places the individual-level factors emphasized in prior work within the student's local context, and then add a new and crucial layer to the analysis of movement as being structured by the relative character of the available school options. These ideas are tested by building both non-social relational and relational models of student movement, drawing on data from Los Angeles over a seven year period and comparing the results.

Viewing movement as an event occurring at a particular time within a pupil's school life suggests conceiving of student movement as a discrete-time hazard process. This process may vary based on the level of schooling, given that the geographical context from which elementary versus secondary schools draw students vary in size, demographic diversity, and simple proximity to other school alternatives. Who is "deciding" on where to attend school may vary as children age as well. These factors suggest estimating baseline hazard functions separately for elementary and secondary students, with time in school structuring the baseline hazard of movement. We then incorporate both time-invariant and time-varying covariates which can move the baseline hazard up or down.

The following four groups of predictors match the four sets of hypotheses put forward above: (1) the student's location in and progress through the grade structure, (2) individual and school demographics, including student achievement, (3) indicators of school quality, and (4) the local organizational ecology in which the student is situated. To compare our relational approach to a non-relational perspective on student movement we develop one set of models incorporating relational measures for the effects of race, class, achievement, and school quality (predictor groups 2 and 3), and a corresponding set that incorporates non-relational measures for these effects.

Data

We drew time-series data from LAUSD's student and teacher records, along with characteristics of school organizations. These records contain yearly observations on each student in each of two semesters from the 2002-03 through the 2008-09 school year, and include annual test score data for English language arts and mathematics from grades 2 through 11. Additional school-level data are available from the California Department of Education. The location of each school was geocoded using Yahoo! Placefinder, allowing us to calculate local proximity, performance ranking, and diversity measures, each a method of placing students and families in their immediate organizational context.

Data were either unavailable or excluded for certain kinds of LAUSD students. For example, data were incomplete for students enrolled in regional occupational programs and those enrolled in independent study or home-based special education programs. Pupils whose reported grade level was outside the grade structure reported by their school were excluded, as were students who were only observed for one semester.[34]

Given that LAUSD operates schools with varying grade structures, schools were sorted into primary, elementary, middle, secondary, and mixed categories based upon their lowest and highest grades.[35] To simplify presentation only models pertaining to students attending elementary or secondary schools are reported. Finally, one important caveat, particularly with regards to the variables dealing with charter school students, charter schools have been slow in

[34] See Appendix B for an accounting of dropped observations.
[35] See Appendix B for details

data to their district authorizers, so the data is missing a significant portion of charter school students, particularly from independent start-up charters.

Dependent Event - Student Movement

We define nonstructural student movement as an instance of a pupil exiting a school before they graduate or naturally leave after completing the highest grade offered at their school. A significant subset of schools added or dropped grades from their grade structures during our time series, 2002-2008. To deal with this issue in the calculation of our dependent variable, we looked forward to the grade structure of a school in the fall semester of the school year following each spring semester observation in order to determine whether or not a student could conceivably stay at their school and progress at least one grade. If a student could not stay at their school given the grade structure, we consider them to be structural movers, and they receive a missing value on our dependent variable. In addition, observations in the final semester of the last school year in our data were all coded as missing as we can't know if they change schools or not.[36] Given that a student could stay at their school, we then check to see if that student is found at the same school in the next period. If the student stays at the school, our dependent variable is coded 0, if they are not found at that school in the next period, our dependent variable is coded 1.

Predictors of Nonstructural Student Movement

Dummy variables for each period (semester) a student was observed at a school are incorporated in order to estimate the baseline hazard function. Controls or substantive predictors are then added measuring the number of grades remaining in the school to deal with schools of varying grade structures, a dummy for the fall semester to deal with the rare cases of students who are observed beginning a school mid-year, dummy variables indicating whether the observation was in a period immediately following being retained or skipping a grade level, and a continuous variable indicating the number of grades behind or ahead of their peers a student is, given their first observed grade. The non-normal grade progression, measure G_{st}, is calculated:

$$G_{st} = \left| \sum_{t_0}^{t} b_{it} - \sum_{t_0}^{t} f_{it} \right|$$

where b_{st} is the dummy variable indicating retention from last period to current period for student s, and f_{st} is the dummy variable indicating a skip from last period to current period for student s. At any point in time, G_{st}describes how far removed from their age cohort peers a student is in terms of their grade progression with a zero indicating "normal progression".

Variables measuring the socioeconomic status of individual students and their families, as well as the pupil's performance are included as well. Multi-category variables indicating the

[36] See Appendix B for these details.

race and ethnicity of students and parental education were used. Ethnicity was indicated by one of five categories, taking on possible values of Latino (the reference category), white, black, Asian/Pacific Islander, and other. In order to situate ethnicity within a school context, measures of the proportion of a school's student body made up by each of these ethnic groups in each year are included, and for the social-relational models, the interaction of each category with the proportion of pupils at the school in that category.

Parental education is categorized as less than high school (the reference category), high school, some college, college graduate, and more than college. A relative measure that captures the degree to which the parental educational of a particular student deviates from the mean parental education of the students at their school is included as well. To do this the categorical variable is transformed into an ordinal variable ranging from 5 (less than high school) to 1 (more than college) and then the school-year mean of this ordinal variable is subtracted from each student's value on this variable. The result is a measure ranging from -4 to 4 with positive values indicating a student is from a family that is less educated than the average student at their school, and negative values indicating the reverse. Dummy variables indicating whether or not the student was eligible for free or reduced price meals, whether the student was born outside of the U.S., whether or not the student reported mainly speaking English at home, and whether the student is categorized by school authorities as having a disability are also included.

Finally, variables intended to measure a student's performance relative to their peers are included. Standardized test scores of one's own child, compared with peers at their school, offer a concrete and highly situational benchmark for comparison. California Standards Test (CST) scores in math and English language arts, standardized by grade and year, and in the case of high school math by subject as well are used for this purpose. The data include records for both fall and spring semesters, but students are tested in the spring. So, data from each spring is carried forward to the next fall semester. For students in grades or times that are not tested (preschool through fall semester of grade 2), test scores were set to the mean (zero, as test score variables are standardized) and include a dummy variable to control for the effect of not being tested on movement. Predictors that measure school the quality and type of school organizations are included. Alternative schools are differentiated from those that are assigned to students based upon the family's residence within attendance boundaries with dummy indicator variables for students attending charter schools, magnet schools, magnet programs within a regular LAUSD public school, or traditional public schools other than the assigned school.

Charter schools are heterogeneous organizationally, so they are further differentiated according to how each was affiliated with the district. Charter schools authorized by the board have the option of retaining district affiliation, which retains their status within the purview of the negotiated labor agreement with the teacher's union, including employee benefit plans, or operating outside of the labor contract. Regular schools that have converted to charter status often remain affiliated with LAUSD. Many so-called start-up charters on the other hand operate independently of the district. Charters are further disaggregated by the type of operator: free-

standing, network operated, or operated by a charter management organization (CMO). Free-standing charters are those operated by an administration governing a single school. Network charters are schools that are linked to a group of schools, typically affiliated with less than five sister schools, by a common philosophy and association, but do not share centralized governance or operational decision making. In contrast, CMO-run charters are created and managed by central office, either a nonprofit or for-profit firm, much like a small school district.

School quality is captured using several measures: the ratio of students attending the school divided by the number of teachers employed, overall education level of the teachers, the proportion of teachers fully credentialed (versus being "emergency credentialed" or hold the status of "intern teachers"), as well as categorical variables identifying whether or not the school was identified by the district as an overcrowded school receiving enrollment relief in the form of new school construction, or a newly built school. Teacher education level is coded as a six category ordinal variable ranging from 0 to 5 with the categories: 0) Ph.D. 1) master's degree plus thirty hours 2) master's degree 3) bachelor's degree plus thirty hours 4) bachelor's degree 5) less than bachelor's. This variable is then transformed to vary between 0 and 1 with 1 indicating a PhD, and a school level variable E_{st} is computed by taking the mean for each school year:

$$E_{st} = \frac{\sum_{i=1}^{I} \frac{(E_{ist} - 5) \times -1}{5}}{I_{st}}$$

where $E_{ist}$is the education of teacher i at school s in year t, and I_{st} is the number of teachers at school s in year t. Each of these teacher quality variables is z-scored by the school-level (elementary, middle, secondary) and year. In addition, we include a count variable containing the number of years the school has been in Program Improvement as defined by the federal No Child Left Behind Act (failing to meet achievement growth targets).

The final measure of quality is a rank measure that captures the position of the student's current school within the system of public schools in a given radius serving that student's grade at the elementary or high school level. We first took the average test scores in English language arts and mathematics for students in each grade at a given school. This calculation is straightforward for both English language arts and mathematics in elementary school; however in secondary school, students take subject based mathematics tests. In order to create a single mathematics performance measure for students in a given grade attending a particular school, we took the mean performance across mathematics tests weighted by the proportion of tested students taking a particular test. Using these school-grade-year level test scores, we calculate school *s*'s rank R_{sgt}^{r} as the difference between its score for students in grade *g* at time *t*, s_{sgt}, and the minimum school score within an *r* mile radius divided by the difference between the highest and lowest school scores within an *r* mile radius:

$$R_{sgt}^{r} = \frac{s_{sgt} - \min(s_{sgt}^{r})}{\max(s_{sgt}^{r}) - \min(s_{sgt}^{r})}$$

where *g* is defined as a student's current grade for the fall semester and as their current grade plus one for the spring semester. This measure is undefined for students in the spring semester of their school's highest grade. As these students are considered right censored, due to being forced to change schools, this does not pose a problem. By looking forward to the next grade in each spring semester, the ranking measure is time-grade appropriate with students in the spring semester of a given grade coded with their school's rank for the subsequent grade's tests. The exceptions to this were students in Preschool, Kindergarten, in the fall semester of 1st grade, in the spring semester of 11th grade or in the fall semester of 12th grade. These students are at positions in the grade structure which have no group of tested students to provide the basis for ranking calculations. In order to solve this problem, students in grades lower than 1st or in the fall semester of 1st grade were coded with the relevant rankings for students in the Spring semester of 1st grade, and students in Spring of 11th grade were coded with the relevant rankings from Fall of 11th grade.

This measure represents the difference between a given school and the highest performing school in the area as a percentage of the difference between the highest performing school and the worst performing school. It holds several appealing qualities. First, it has the essential property of a rank measure: two schools with the same performance will receive the same rank. Second, it ranges from 0 to 1, effectively dealing with differences in the number of schools in each focal school's reference set. Finally, unlike a simple hierarchical ranking, differences between schools are scaled by the actual differences in their quality as measured by test scores. Conventional (non-relational) models are estimated with this measure using a radius including all of LAUSD; the social-spatial-relational models are estimated using a radius of two miles for elementary school students, and four miles for secondary school students.

To move beyond individual-level factors, each pupil's school is situated within a local set of nearby alternatives, which may further contribute to the likelihood of student movement. That is, the local ecology of proximal school organizations conditions the range of options available to parents and students. Three sets of predictors, measuring proximity of schools to one another, the relative abundance of organizational options, and the diversity of school types within the local area are constructed. Drawing on geocoded school locations, the proximity of the student's current school to each other school, public and private within the borders of LAUSD is calculated. This matrix formed the foundation for calculations of organizational proximity, abundance, and diversity, as well as the rankings detailed above.

For proximity, the distance from the student's current school to the nearest public, charter, and private school to which the student could possibly move given their grade position is calculated. Using this same process count variables measuring abundance for the number of traditional public schools, magnet schools or programs, charter schools, pilot schools, secular private and religious private schools are computed. These measures are calculated at a radius of two miles for elementary schools and four miles for secondary schools.

To measure the diversity of school organizations available to families and students, the exponentiated Shannon Entropy or equally weighted diversity (Jost 2006) is computed for each public school at a specific radius (two miles for elementary schools and four miles for secondary schools) using a four category typology including traditional public schools, charter and magnet schools, secular and religious private schools as follows:

$$\mathrm{D}_{sgt}^{r} = \exp\left(-\sum_{c=1}^{C} p_c \ln p_c\right) - 1$$

where p_c represents the percent of schools in category *c*. D_{sgt}^{r} gives us the diversity of options in the radius *r* presented to a student in school *s*, grade *g* at time *t.* Subtracting one from the exponentiated Shannon entropy gives a measure of diversity ranging from zero in the case of a school with no schools of other types within radius *r*, to the number of measured categories minus one, in this case three when there are an equal number of schools of each type (including the focal school) within the radius.

Control variables.

Control variables are included that may constrain school selection processes but were not part of this chapter's theoretical account. These include gender, school year dummies to control for calendar-time variation in mobility rates, whether the student was being voluntarily or involuntarily bussed out of their neighborhood as a part of LAUSD's effort to relieve overcrowding, and dummies indicating whether the student attended a specialized school for at-risk students or students with disabilities. After identifying the complete set of predictors for the hazard models, missing values required dropping some cases.[37]

Discrete Time Hazard Estimation

We estimate the likelihood of student movement within a discrete-time hazard framework. Hazard time is counted from the initial observation of a student at a given school until exit, structural or nonstructural. Multiple spells are counted if the student experiences more than one nonstructural exit between periods of structural exit (at the end of a school's grade cycle). Since we postulate that the factors impacting movement may differ at each grade level (elementary, middle, or secondary) once a student undergoes a structural exit, the spell counter is reset. This approach also minimizes the risk of bias associated with the left-censoring of student enrollment and possible moves.

Two models each for elementary and secondary school students are specified. The first includes what non-relative (conventional individual-level) measures for the pupil's race, socioeconomic status, academic performance, along with measures of school quality. Then, these conventional models are altered to include social-relational measures, placing the student in relation to his peers and one's school relative to the surrounding organizational

[37] See Appendix Table 1 for the number of observations dropped due to missing covariate values.

ecology. Each model is estimated via logistic regression with cluster corrected standard errors in Stata 12.

First descriptive statistics are presented for all predictors and movement likelihoods at the student-semester level, reported separately for elementary and secondary school pupils. Second, results of the regression models estimated for the elementary and secondary school levels are presented. Then the implications of these results for how we conceive of student movement, as well as for how sociologist think about how individual level processes are altered with differentiating organizational fields.

Results

Tables 5.1 and 5.2 present descriptive statistics for all variables utilized in the analysis, split between dichotomous and continuous variables. Table 1 displays various attributes of pupils and families, along with the variation in types of schools spread across LAUSD[38]. Variables with significant counts of missing values include gender, language spoken at home, and parent's education level. Latino students make up about 75% of elementary and about 72% of secondary school students. About 10% of elementary students are foreign born, and this rises to 21% for secondary students. Nearly 32% of elementary and 29% of secondary school students do not speak English at home. About 81% of elementary and 70% of secondary students receive free or reduced price meals. Almost 55% of elementary and just over 58% of secondary school students report that their parents did not finish high school. Only 4% of elementary students are served by magnet schools, while nearly 12% of secondary students attend magnet schools. Over the time-series about 3% of elementary and less than 2% of secondary school students are served by a charter school, but fully 21% of elementary and 25% of secondary students are served by a traditional public school located outside their attendance area.

Table 5.2 reports descriptive statistics on school-level demographic composition, student performance, school quality, and local organizational ecology including proximity, abundance, and diversity. Table 5.2 reports descriptive statistics for unstandardized versions of percent black, percent white, percent Asian, percent other, language test scores, math test scores, student teacher ratio, mean teacher education, and percent of teachers full credentialed. We report unstandardized versions in the descriptive tables; though each of these variables was standardized before being entered in our models. The average elementary student attends a school that is 74% Latino, 11% black, 8% white, 6% Asian and 1% other ethnicity, quite similar to the pattern for secondary students. Student-teacher ratios average nearly 18 for elementary students and 20 for secondary students. On average elementary students attend schools with 92% of teachers that are fully credentialed, while for secondary students the number is slightly lower at 85%. Both elementary and secondary students attend

[38] Means marked with a ^ are based on N's less than what's reported in the column headers. These N's can be found in Appendix B.

schools where teachers on average hold a bachelor's degree plus 30 credit hours of graduate training.

Table 5.1: Descriptive Statistics - Means for Dichotomous Variables

	Variable	Elem	Sec		Variable	Elem	Sec
Dep. Var.	Non Structural Move	.0903	.1279	*Grades*	Retained	.0115	.0685
					Skipped	.0005	.019
Time	Fall Semester	.537	.5903	*Demographics & Performance*	Foreign Born	.1023	.2148
	1st Semester at School	.2436	.288		English at Home	.3169 ^	.2891 ^
	2nd Semester at School	.1947	.2146		Meal Plan	.8118	.695
	3rd Semester at School	.1505	.1676		Special Ed	.0981	.1077
	4th Semester at School	.1164	.1173		Latino	.749	.7138
	5th Semester at School	.0907	.0963		Black	.1044	.1236
	6th Semester at School	.0671	.0599		White	.0855	.0906
	7th Semester at School	.0509	.0506		Asian	.0359	.0413
	8th Semester at School	.0357	.0035		Other	.0252	.0308
	9th Semester at School	.0251	.0018		Parent's Ed - Less Than High School	.5439 ^	.5833 ^
	10th Semester at School	.0152	.0002		Parent's Ed - High School	.1986 ^	.1709 ^
	11th Semester at School	.0081	.0002		Parent's Ed - Some College	.1267 ^	.1061 ^
	12th Semester at School	.0021	~		Parent's Ed - Bachelor's	.0873 ^	.1064 ^
	13th Semester at School	~	~		Parent's Ed - More than Bachelor's	.0435 ^	.0333 ^
					Pretest	.3838	~
Controls	2002-2003 School Year	.0816	.1481	*School Type & Quality*	Magnet	.0382	.117
	2003-2004 School Year	.182	.153		Independent Start-Up Charter	.0012	.0026
	2004-2005 School Year	.175	.1571		Affiliated Start-Up Charter	.0015	~
	2005-2006 School Year	.1661	.1564		Independent Conversion Charter	.0153	.0122
	2006-2007 School Year	.1586	.1521		Affiliated Conversion Charter	.0115	.0023
	2007-2008 School Year	.1544	.1504		Network Charter	.0046	~
	2008-2009 School Year	.0822	.083		CMO Charter	.0006	.0016
	Female Student	.4879 ^	.4896 ^		Unassigned TPS	.2105	.2518
	Forced Bussing	.0035	.0184		New TPS	.025	.0494
	Voluntary Bussing	.0016	.0049		Previously Overcrowded TPS	.1871	.3648
	At-Risk School	~	.0213		Overcrowded TPS	.0809	.1251
	Special Ed School	.0001	~				

Elementary N = 3,544,965 Secondary N = 2,022,399

^: N's differ from those listed above. See Appendix C

Table 5.2: Descriptive Statistics - Continuous & Count Variables

		Elementary					Secondary				
	Variable	Mean	SD	Min	Max	N	Mean	SD	Min	Max	N
Grade Progress	Grades Left	2.84	1.72	0.00	7.00	3,544,965	1.93	1.01	0.00	5.00	2,022,399
	Abnormal Grade Progression	0.06	0.24	0.00	4.00	3,544,965	0.16	0.40	0.00	5.00	2,022,399
Demographics & Performance	% Black	0.11	0.17	0.00	0.99	3,544,954	0.12	0.16	0.00	0.96	2,021,531
	% White	0.08	0.17	0.00	0.88	3,544,954	0.09	0.12	0.00	0.78	2,021,531
	% Asian	0.06	0.09	0.00	0.76	3,544,954	0.07	0.07	0.00	0.60	2,021,531
	% Other	0.01	0.01	0.00	0.16	3,544,954	0.01	0.01	0.00	0.07	2,021,531
	Parent's Ed - Dev From Mean	0.00	1.01	-3.93	3.36	3,121,891	0.01	1.09	-3.80	3.18	1,968,347
	Lang Performance - Scale Score	328.12	44.63	150.00	600.00	3,477,925	313.26	53.97	150.00	600.00	1,815,361
	Math Performance - Scale Score	354.13	62.33	150.00	600.00	3,474,969	284.78	50.87	150.00	600.00	1,665,085
School Type / Quality	Program Improvement Year	0.72	1.34	0.00	5.00	3,544,965	2.20	2.03	0.00	5.00	2,022,399
	Student Teacher Ratio	17.73	1.30	0.00	26.98	3,544,965	20.80	2.20	0.00	69.00	2,021,295
	Mean Teacher Education	0.44	0.05	0.29	0.70	3,544,965	0.46	0.04	0.25	0.78	2,021,295
	% of Teachers Fully Credentialled	0.92	0.09	0.15	1.00	3,544,965	0.85	0.08	0.14	1.00	2,021,295
	School Quality - Math	0.44	0.29	0.00	1.00	3,535,694	0.43	0.33	0.00	1.00	1,992,786
	School Quality - Lang	0.42	0.29	0.00	1.00	3,535,694	0.55	0.26	0.00	1.00	2,013,873
	School Quality - Math (District Wide)	0.37	0.17	0.00	1.00	3,535,694	0.36	0.21	0.00	1.00	1,992,786
	School Quality - Lang (District Wide)	0.34	0.17	0.00	1.00	3,535,694	0.48	0.15	0.00	1.00	2,013,873
Local Organizational Ecology	Distance to Nearest TPS	0.58	0.32	0.00	3.18	3,544,965	0.15	0.34	0.00	2.29	2,022,399
	Distance to Nearest Charter	2.93	3.14	0.00	36.47	3,544,965	3.46	3.09	0.00	20.71	2,022,399
	Distance to nearest Priv School	0.55	0.35	0.01	2.76	3,447,685	1.02	0.73	0.03	3.89	2,022,399
	Count of TPS	14.22	6.81	0.00	34.00	3,544,965	12.47	6.22	0.00	28.00	2,022,399
	Count of Magnets	1.39	1.54	0.00	8.00	3,544,965	5.50	3.17	0.00	13.00	2,022,399
	Count of Charters	1.26	1.68	0.00	11.00	3,544,965	2.63	3.68	0.00	24.00	2,022,399
	Count of Pilots	0.00	0.00	0.00	0.00	3,544,965	0.14	0.64	0.00	5.00	2,022,399
	Count of Religious Priv Schools	6.59	3.51	0.00	19.00	3,544,965	6.91	3.45	0.00	27.00	2,022,399
	Count of Secular Priv Schools	2.65	3.16	0.00	22.00	3,544,965	5.98	4.75	0.00	21.00	2,022,399
	Diversity	1.83	0.55	0.00	3.00	3,544,964	2.46	0.45	0.76	3.00	2,022,399

Turning to the organizational ecology variables, we see that the average elementary student attends a school about a one-half mile from nearest grade-appropriate public school, while this distance is lower for secondary students at just over one seventh of a mile. On average an elementary school student attends a school with about 14 traditional public schools, 1 magnet, 1 charter, 7 religious private, and 3 secular private schools that offer suitable grades within a 2 mile radius. The average secondary school student attends a school with 12 traditional public, 6 magnet, 3 charter, 7 religious private and 6 secular private schools within a 4 mile radius. These averages along with the sizeable ranges on these count variables show the highly variable organizational topography of LAUSD, with some areas having higher organizational density and greater concentrations of small charter and magnet school programs. The organizational diversity in which secondary students are situated is even greater than the density that's proximal to the average elementary student.

Hazard Model Results

Results of the discrete-time hazard models are presented in five tables. In each case separate results for elementary and secondary students and schools are reported. When relevant both the conventional individual-level and corresponding social-relational predictors are reported in tandem estimation models. Table 5.3 presents results for the baseline hazard parameters, as well as the grade progression measures, and controls. Table 5.4 presents results for individual and school demographics and academic performance. Table 5.5 shows detailed predicted results for various levels of parental education. Table 5.6 presents results for school type and quality variables, and Table 5.7 for effects stems from the organizational ecology factors.

Table 5.3 reports odds ratios and standard errors for time in school and grade progression variables, as well as for the control covariates. For this baseline model we only report results with social-relational measures included, since no significant differences were observed when modeling effects from the conventional individual-level factors, and these specifications do not differ with regard to any of the measures presented.

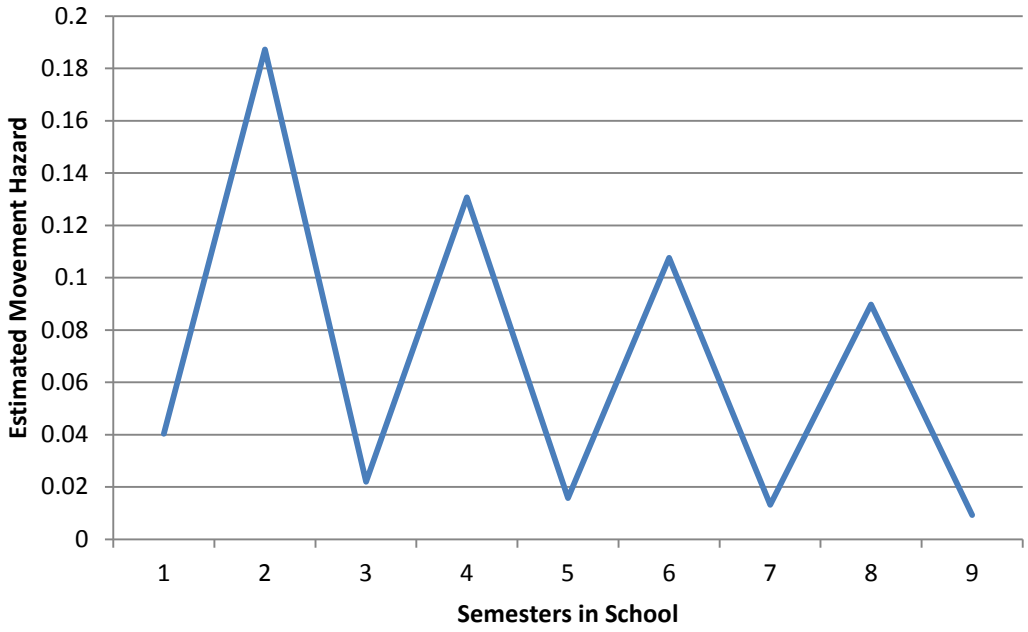
Table 5.3: Discrete Time Hazard Models - Time, Grade Progression and Controls

	Elementary		Secondary	
	OR	SE	OR	SE
Fall Semester	0.126***	(0.000871)	0.195***	(0.00243)
1st Semester at School	0.133***	(0.00357)	0.0933***	(0.00473)
2nd Semester at School	0.0918***	(0.00262)	0.0656***	(0.00324)
3rd Semester at School	0.0751***	(0.00217)	0.0637***	(0.00322)
4th Semester at School	0.0634***	(0.00182)	0.0380***	(0.00188)
5th Semester at School	0.0566***	(0.00165)	0.0512***	(0.00263)
6th Semester at School	0.0538***	(0.00158)	0.0245***	(0.00123)
7th Semester at School	0.0501***	(0.00150)	0.0548***	(0.00290)
8th Semester at School	0.0465***	(0.00143)	0.0979***	(0.00646)
9th Semester at School	0.0371***	(0.00123)	0.115***	(0.0111)
10th Semester at School	0.0351***	(0.00128)	0.0336***	(0.00722)
11th Semester at School	0.0289***	(0.00140)	0.0186***	(0.00890)
12th Semester at School	0.0331***	(0.00427)		
Grades Left	1.058***	(0.00294)	0.973***	(0.00469)
Retained	1.423***	(0.0445)	1.306***	(0.0186)
Skipped	0.767**	(0.0672)	1.084***	(0.0229)
Abnormal Grade Progression	1.249***	(0.0128)	2.403***	(0.0213)
2003-2004 School Year	1.717***	(0.0205)	1.375***	(0.0165)
2004-2005 School Year	2.426***	(0.0280)	1.738***	(0.0215)
2005-2006 School Year	2.356***	(0.0278)	1.564***	(0.0206)
2006-2007 School Year	2.031***	(0.0251)	1.277***	(0.0186)
2007-2008 School Year	2.074***	(0.0274)	1.435***	(0.0214)
2008-2009 School Year	1.826***	(0.0417)	1.337***	(0.0253)
Female Student	0.976***	(0.00453)	0.988*	(0.00572)
Forced Bussing	1.838***	(0.0553)	1.881***	(0.0349)
Voluntary Bussing	1.868***	(0.0894)	1.898***	(0.0710)
At-Risk School			2.831***	(0.0650)
Special Ed School	1.324	(0.231)		
N	3,036,587		1,628,693	

* p<0.05 ** p<0.01 *** p<0.001

Overall, we see a monotonically decreasing hazard rate as the student's time in school progresses. The large negative effect on movement for fall semesters generates a saw-tooth pattern when looking at hazard semester-to-semester, indicating most movement occurs between school years. These results provide support for our first hypothesis. The hazard of movement drops with time spent in a given school. Figures 5.1 and 5.2 show the estimated baseline semester-by-semester hazard of movement for elementary and secondary students respectively.

Figure 5.1: Baseline Estimated Hazard for Elementary Movement



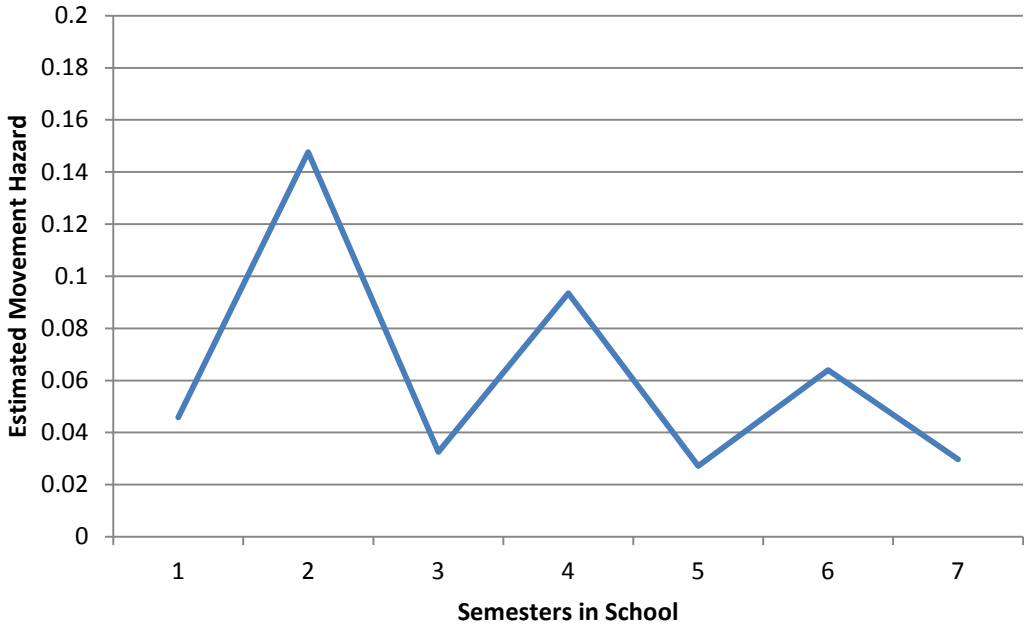
The measures of grade progression show support for our second hypothesis as well. Students retained in a grade are more likely to move in the semester after their retention (43% greater odds for elementary students and 30% greater for secondary students), and pupils who have been retained or skipped grades at any point are more likely to move (24% greater odds per grade ahead/behind for elementary and 140% for secondary students). The dummy variable indicating the semester following a student skipping a grade shows the expected positive effect on mobility among secondary students (8% greater odds), but shows a negative effect among elementary students (23% less likely to move). This effect is largely negated by the abnormal grade progression variable, suggesting that skipping a grade has no impact on movement in the semester immediately following a skip for elementary students, but subsequently increases their likelihood of movement. The only situation in which a student is less likely to move after a grade skip is an elementary student who was retained yet has caught up to their peers. Overall these results provide strong support for hypothesis two.

Table 5.4 shows the odds ratios for the demographic and performance variables in both the conventional individual-level and our social-relational models. Direct effects of the race variables are stable across model specifications and grade levels. When compared with Latino students, black students and white students are more likely to move at both the elementary and secondary school levels. Asian students and students of "other" ethnicities are more likely to move in elementary school and less likely than Latino students to move at the secondary level.

Where the individual and relational models begin to show differing patterns is with the ethnic composition of a student's school. The individual-level models show negative effects for

percent black, percent white, and, for secondary students, percent Asian. Including interactions between an individual student's ethnicity and the relative proportion of their school made up by their ethnicity indicates levels of homophily. In each case, increasing proportions of a student's own ethnic group dampens the likelihood of movement, except for Asian secondary students.[39] Finally, these results show that percent black increases the likelihood of movement for non-black students. These results support hypothesis four, and show that considering the school's ethnic composition in relation to a given pupil's ethnicity offers a more complete picture of how race and ethnicity contribute to student movement.

Figure 5.2: Baseline Estimated Hazard for Secondary Movement



The same can be said for the effects of family socioeconomic status, although the results are more complex. First, the individual-level model shows that for elementary students, higher levels of parental education are directly related to the likelihood of movement, while the opposite is true for secondary school students. In each case, including the relative measure reverses the signs on these variables, although they become non-significant for secondary students. Table 5.5 shows the percentage change in the odds of movement for each combination of parental education and mean parental education at the student's school.

[39] The Asian category is most likely hiding considerable variation by lumping together Chinese, Japanese, Vietnamese, Korean, Thai, Filipino, Pacific Island, Indian and Middle Eastern students.

Table 5.4: Non Relative Vs. Relative Discrete Time Hazard Models - Individual Level Factors

	Elementary				Secondary			
	Non Relative		Relative		Non Relative		Relative	
	OR	SE	OR	SE	OR	SE	OR	SE
Foreign Born	1.310***	(0.00953)	1.307***	(0.00951)	1.078***	(0.00798)	1.088***	(0.00802)
English at Home	1.313***	(0.00896)	1.307***	(0.00891)	1.424***	(0.0133)	1.410***	(0.0132)
Meal Plan	1.003	(0.00747)	1.002	(0.00741)	0.831***	(0.00566)	0.839***	(0.00571)
Special Ed	1.125***	(0.00882)	1.110***	(0.00878)	0.746***	(0.00763)	0.751***	(0.00770)
Black	1.294***	(0.0127)	1.382***	(0.0141)	1.089***	(0.0134)	1.186***	(0.0160)
White	1.183***	(0.0136)	1.355***	(0.0183)	1.089***	(0.0146)	1.107***	(0.0185)
Asian	1.342***	(0.0181)	1.312***	(0.0212)	0.918***	(0.0157)	0.731***	(0.0201)
Other	1.109***	(0.0168)	1.125***	(0.0174)	0.850***	(0.0168)	0.866***	(0.0183)
% Black	0.993*	(0.00302)	1.062***	(0.00434)	0.977***	(0.00459)	1.051***	(0.00577)
% White	0.920***	(0.00419)	0.945***	(0.00475)	0.977**	(0.00763)	0.986	(0.00853)
% Asian	0.954***	(0.00289)	0.947***	(0.00331)	1.005	(0.00518)	1.008	(0.00563)
% Other	1.004	(0.00231)	1.002	(0.00237)	1.065***	(0.00660)	1.061***	(0.00666)
Black X % Black			0.904***	(0.00466)			0.913***	(0.00628)
While X % White			0.902***	(0.00570)			0.954***	(0.0111)
Asian X % Asian			0.999	(0.00633)			1.259***	(0.0329)
Other X % Other			0.970**	(0.0102)			0.875***	(0.0237)
Parent's Ed - High School	1.054***	(0.00634)	0.916***	(0.00882)	0.956***	(0.00763)	1.002	(0.0186)
Parent's Ed - Some College	1.098***	(0.00799)	0.823***	(0.0142)	0.939***	(0.00958)	1.026	(0.0361)
Parent's Ed - Bachelor's	1.108***	(0.0102)	0.716***	(0.0182)	0.913***	(0.00995)	1.047	(0.0538)
Parent's Ed - More than Bachelor's	1.154***	(0.0141)	0.645***	(0.0221)	0.895***	(0.0169)	1.061	(0.0727)
Parent's Ed - Dev From Mean			0.858***	(0.00739)			1.051**	(0.0179)
Pretest	0.689***	(0.00652)	0.674***	(0.00611)				
Math Performance	0.929***	(0.00433)	0.936***	(0.00403)	0.908***	(0.00337)	0.931***	(0.00303)
Math Squared	1.027***	(0.00455)	1.024***	(0.00401)	1.015***	(0.00231)	1.014***	(0.00210)
Language Performance	0.993	(0.00469)	0.981***	(0.00420)	0.742***	(0.00293)	0.776***	(0.00265)
Language Squared	1.020***	(0.00436)	1.026***	(0.00394)	1.035***	(0.00312)	1.052***	(0.00261)
Math X Language	0.984	(0.00787)	0.993	(0.00686)	0.995	(0.00417)	1.017***	(0.00364)
N	3,036,587		3,036,587		1,628,693		1,628,693	

* p<0.05 ** p<0.01 *** p<0.001

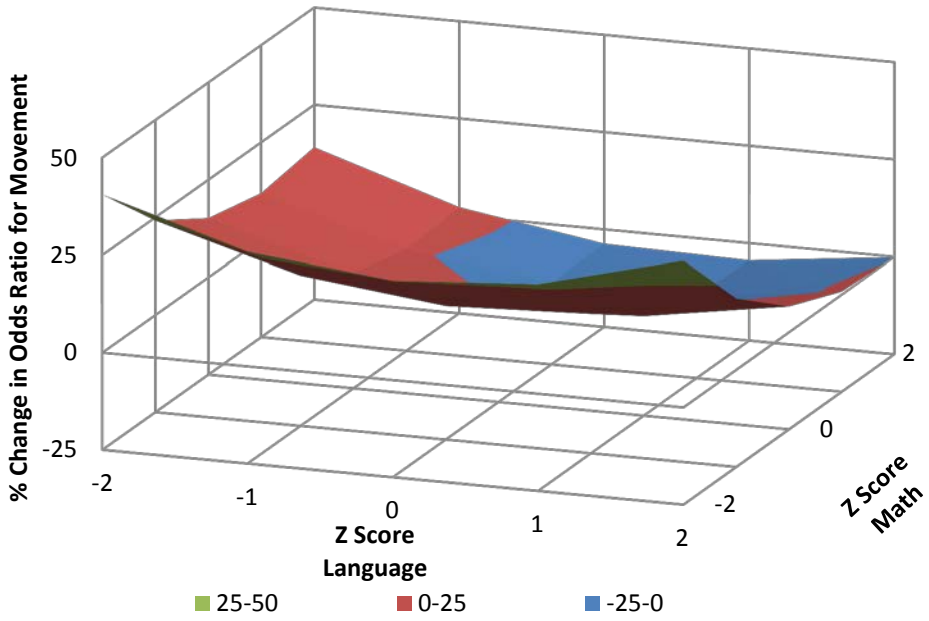
Table 5.5: Heat Plots for Odds of Movement by Parent's Ed and Mean Parent's Ed at School

			Mean Parent's Education at School				
			Less Than High School	High School	Some College	Bachelor's	More than Bachelor's
Elementary Students	Parent's Education	More than Bachelor's	19.02	2.12	-12.38	-24.83	-35.50
		Bachelor's	13.36	-2.74	-16.55	-28.40	-38.57
		Some College	11.80	-4.08	-17.70	-29.39	-39.41
		High School	6.76	-8.40	-21.41	-32.57	-42.14
		Less Than High School	0.00	-14.20	-26.38	-36.84	-45.81
Secondary Students		More than Bachelor's	-13.04	-8.61	-3.95	0.95	6.10
		Bachelor's	-9.81	-5.21	-0.38	4.70	10.04
		Some College	-7.12	-2.38	2.60	7.83	13.33
		High School	-4.66	0.20	5.31	10.68	16.33
		Less Than High School	0.00	5.10	10.46	16.09	22.01

These results first show that for elementary students, those with better educated parents are more likely to move. Second, the magnitude of this relationship is conditional on the mean parental education level at the student' school. That is, a given student with a less well educated parent, relative to the school average, is less likely to move; conversely, a student with a parent who is better educated than the average is more likely to move. For secondary students the pattern flips: students with less well educated parents, relative to the school mean, are more likely to move, while those whose parents are more educated than their school's mean are less likely to move. The elementary school results support hypotheses 3a and 3b, but the results from our secondary student model show the opposite relationship. Even so, these results support our theoretical position: the relationship between the SES of the individual student and the mean SES of students at their school offers a more complete social-relational account.

Looking at academic performance, the advantages of the social-relational perspective are less clear. Overall, these results support the idea that movement is negatively related to achievement, although the relationship appears to be curvilinear. Figures 5.3 and 5.4 provide surface plots showing the percent change in the odds of movement by standardized math and language test scores for the social-relational models of elementary and secondary students, respectively.

Figure 5.3: % Change in Odds of Exit by District Referenced ELA and Math Achievement - Elementary Students



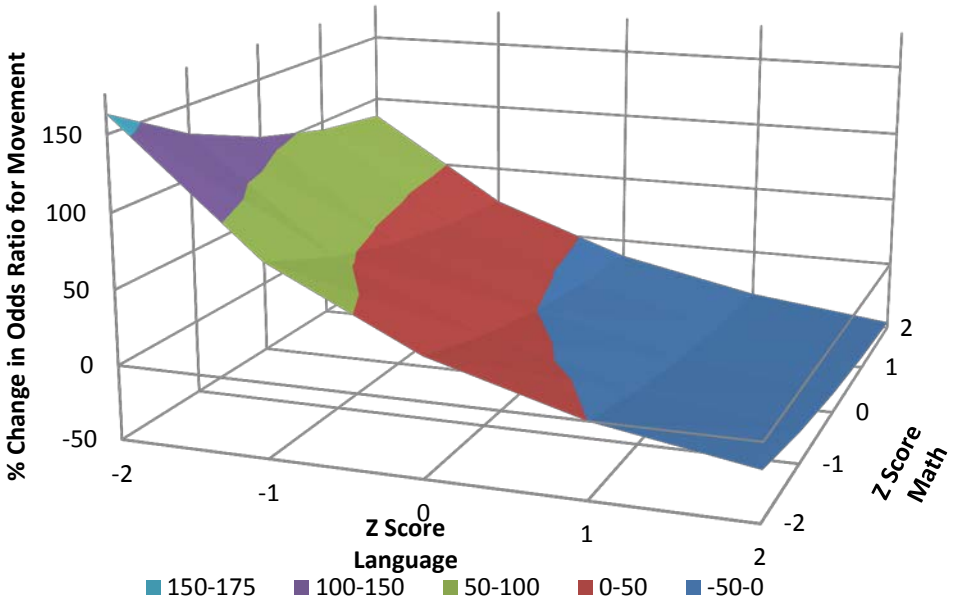
Whether individual academic performance is measured as school referenced or district referenced it has a weaker effect on the likelihood of movement among elementary students than among secondary students. Furthermore, there is a large difference in the effect of math performance relative to language performance when comparing results for elementary and secondary students. While the size of the effect that math performance exerts on movement odds remains steady, the effect of language performance on movement is far larger in secondary school than in elementary school, with a one standard deviation increase in test scores reflecting a 32% reduction in the odds of movement. Looking at the model with school-relative performance measures versus the model with district-relative performance measure shows no meaningful differences, suggesting that individual performance is not a locally contextualized factor, at least considered alone.

Table 5.6 reports effects stemming from school type and quality predictors. First, students attending magnet schools are less likely to move, as are elementary students attending charter schools. Yet these effects are attenuated if attending a non-freestanding charter (i.e., one that is managed by a charter management organization [CMO] or is part of a multi-campus network). Students attending traditional public schools to which they were not assigned, based upon their family residence, were more likely to move (about 62% more likely for elementary and between 73% and 78% more likely for secondary students).

School quality measures generally show effects in expected directions. Students attending newly built schools were less likely to move (18% to 19% less likely for elementary, and 33% to 35% for secondary students). Program improvement status also had a discernible

effect. Each additional year in this status (in which schools remain unable to hit achievement-growth targets) increases the likelihood of movement by about 3% in elementary school and between 6 and 8 % in secondary school. Students in schools with higher levels of mean teacher education are less likely to move, though the effect is not significant for secondary students. The percent of teachers who are fully credentialed also has a negative effect on movement for secondary students, but the effect is not significant for elementary students. Elementary students in schools with higher student to teacher ratios are more likely to move, as one might expect; however the relationship is reversed for secondary students. These counter-intuitive findings raise the question of whether conventional indicators of quality affect parent or student decision-making in expected ways across levels of schooling.

Figure 5.4: % Change in Odds of Exit by District Referenced ELA and Math Achievement - Secondary Students



Additionally, these results show that school-level performance affects movement beyond individual performance. Students in schools ranking higher in math and language have lower odds of movement; although the interaction between math rank and language rank attenuates the direct effects of each on movement. Still, interpreting the differences in these effects between the models is difficult. Figures 5.5 through 5.8 show the percent change in odds of movement by school rank in math and language for odds ratios from each of the tandem model specifications.

Table 5.6: Non Relative Vs. Relative Discrete Time Hazard Models - School Level Factors

	Elementary				Secondary			
	Non Relative		Relative		Non Relative		Relative	
	OR	SE	OR	SE	OR	SE	OR	SE
Magnet	0.338***	(0.00555)	0.332***	(0.00546)	0.421***	(0.00612)	0.329***	(0.00582)
Independent Start-Up Charter	0.272***	(0.0398)	0.256***	(0.0379)	1.690***	(0.113)	1.990***	(0.137)
Affiliated Start-Up Charter	0.585***	(0.0414)	0.572***	(0.0406)				
Independent Conversion Charter	0.663***	(0.0167)	0.684***	(0.0173)	0.673***	(0.0266)	0.626***	(0.0260)
Affiliated Conversion Charter	0.705***	(0.0184)	0.725***	(0.0190)	0.711**	(0.0819)	0.718**	(0.0825)
Network Charter	4.301***	(0.318)	4.156***	(0.312)				
CMO Charter	2.330**	(0.666)	2.754***	(0.787)	1.018	(0.0922)	0.547***	(0.0500)
Unassigned TPS	1.626***	(0.00953)	1.614***	(0.00949)	1.778***	(0.0153)	1.733***	(0.0150)
New TPS	0.805***	(0.0136)	0.825***	(0.0139)	0.645***	(0.0138)	0.665***	(0.0144)
Previously Overcrowded TPS	1.175***	(0.00740)	1.202***	(0.00768)	0.971**	(0.0106)	1.026*	(0.0116)
Overcrowded TPS	1.108***	(0.00963)	1.123***	(0.00977)	0.979*	(0.0103)	1.009	(0.0105)
Program Improvement Year	1.027***	(0.00221)	1.028***	(0.00220)	1.063***	(0.00271)	1.078***	(0.00267)
Student Teacher Ratio	1.019***	(0.00261)	1.021***	(0.00260)	0.944***	(0.00404)	0.936***	(0.00412)
Mean Teacher Education	0.981***	(0.00247)	0.983***	(0.00249)	0.996	(0.00408)	0.998	(0.00407)
% of Teachers Fully Credentialled	0.995	(0.00270)	1.001	(0.00275)	0.974***	(0.00433)	0.950***	(0.00413)
School Quality - Math	1.189***	(0.0515)	0.854***	(0.0149)	0.260***	(0.0171)	0.656***	(0.0187)
School Quality - Lang	0.705***	(0.0344)	0.938***	(0.0180)	0.431***	(0.0253)	0.752***	(0.0169)
SQ Math X SQ Lang	0.621***	(0.0460)	1.139***	(0.0311)	13.08***	(1.395)	1.856***	(0.0711)
N	3,036,587		3,036,587		1,628,693		1,628,693	

* p<0.05 ** p<0.01 *** p<0.001

Figure 5.6: % Change in Odds of Exit by District Referenced ELA and Math Rank - Elementary Students

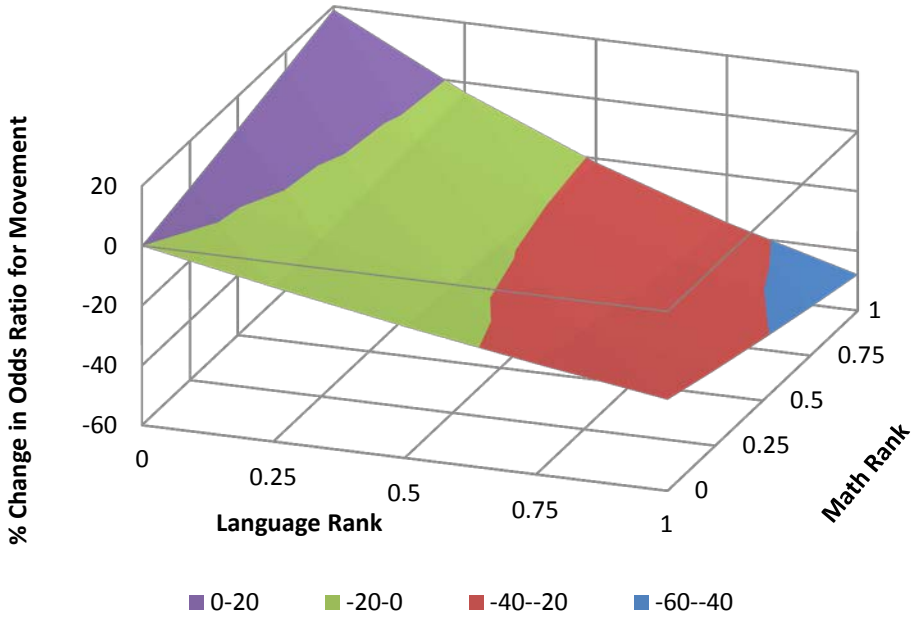


Figure 5.5: % Change in Odds of Exit by Locally Referenced ELA and Math Rank - Elementary Students

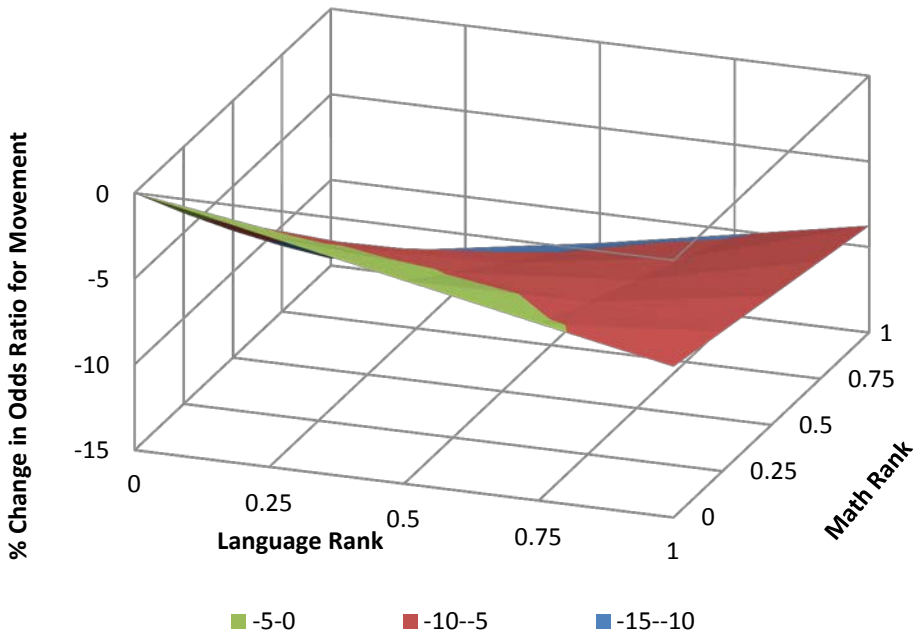


Figure 5.8: % Change in Odds of Exit by Locally Referenced ELA and Math Rank - Secondary Students

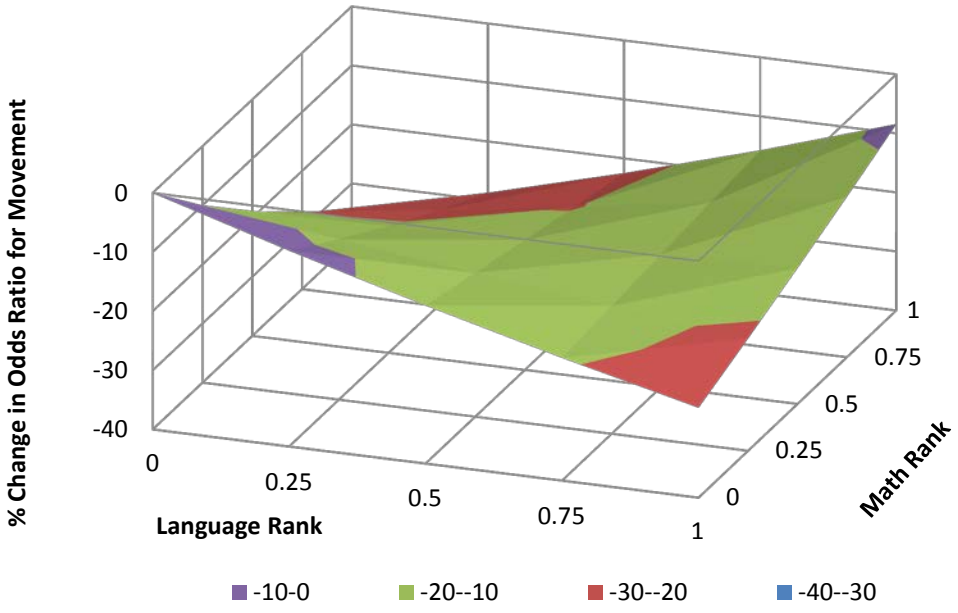
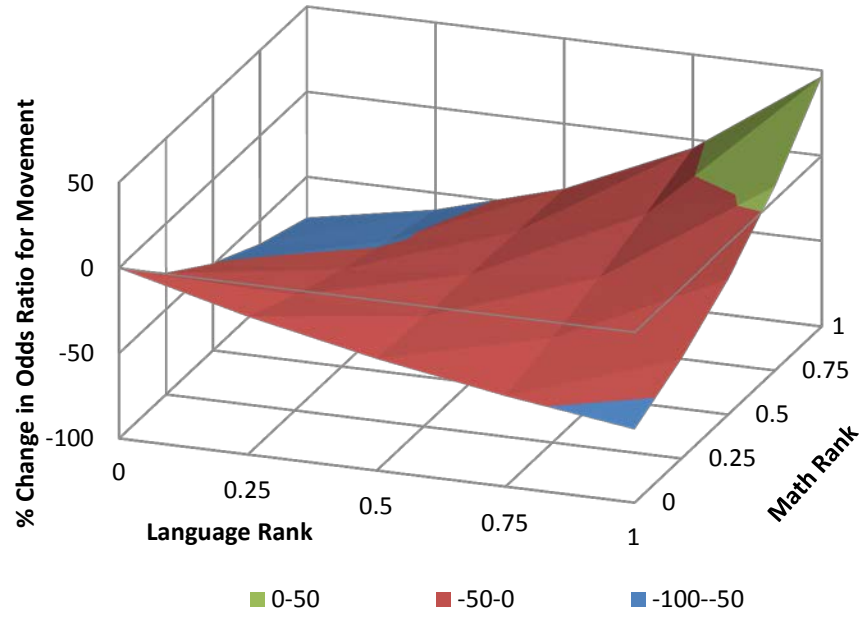


Figure 5.7: % Change in Odds of Exit by District Referenced ELA and Math Rank - Secondary Students



Considering the non-relative measures among elementary schools, language performance at the school level has a strong effect. The odds of a student moving from a school near the top of the district in terms of mean performance on language exams are between 30% and 48% less than that of a student at a school in the bottom of the district rankings, depending on the school's math rank. Math rank shows a positive main effect on movement, but the interaction between math and language is negative, suggesting an inflection point. For students at a school near the bottom of the district in terms of language performance, increasing math performance increases the odds of movement; however, the interaction between language and math rank overtakes the direct effect of math on movement at around 0.36. This suggests that when a school falls in the bottom 36% of schools in the district in terms of language scores, increasing math scores positively effects movement, but when the school is in the top 64% of schools in the district in language, increasing math scores reduces the odds of movement.

In the case of secondary students, the district-referenced quality indicators show much stronger effects on movement and display a saddle shape. The direct effects of both language performance and math performance on movement are negative as we might expect; however, the interaction is positive and quite strong overtaking the negative effect for schools that are in the middle of pack in terms of both language and math.

Table 5.7: Discrete Time Hazard Models - Ecological Figures

	Elementary		Secondary	
	OR	SE	OR	SE
Distance to Nearest TPS	0.842***	(0.00762)	0.918***	(0.00904)
Distance to Nearest Charter	0.994***	(0.00110)	1.006***	(0.00148)
Distance to nearest Priv School	0.960***	(0.00709)	1.026***	(0.00500)
Count of TPS	1.003***	(0.000709)	1.024***	(0.000963)
Count of Magnets	0.990***	(0.00189)	0.984***	(0.00163)
Count of Charters	0.978***	(0.00190)	0.999	(0.00133)
Count of Pilots			1.063***	(0.00568)
Count of Religious Priv Schools	0.991***	(0.00101)	0.992***	(0.00119)
Count of Secular Priv Schools	1.009***	(0.00111)	1.016***	(0.00123)
Diversity	1.099***	(0.00937)	1.201***	(0.0168)
N	3,036,587		1,628,693	

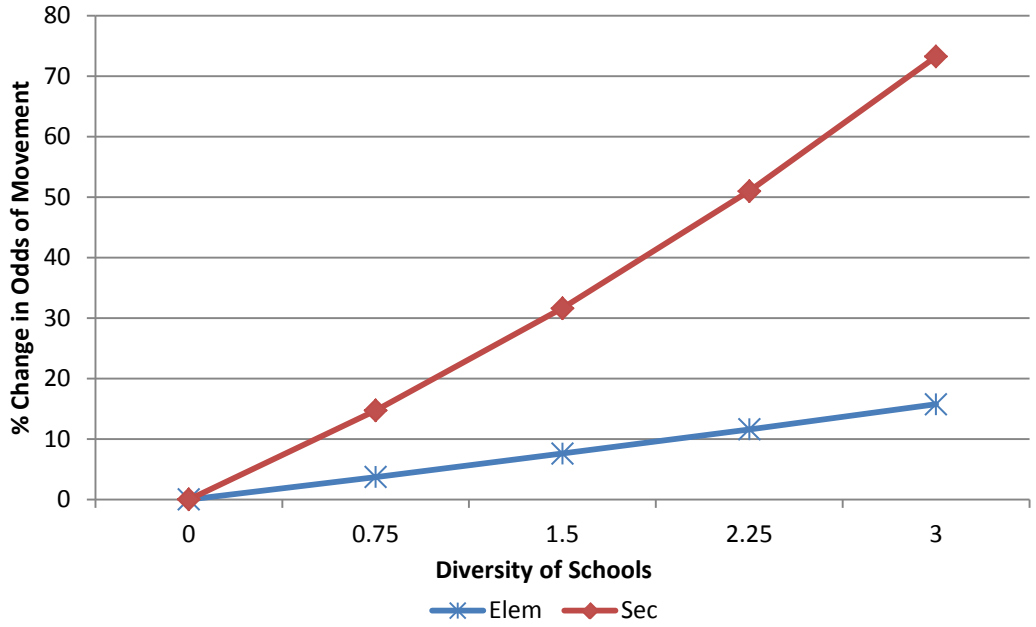
* p<0.05 ** p<0.01 *** p<0.001

Moving to the locally referenced rank, results are similar across levels with the relationship between math performance, language performance and movement odds showing the familiar saddle shape. Again, results at the secondary level are much stronger than at the elementary level. In each case, the locally referenced rankings show a weaker relationship to movement than district-referenced ones. Given these results, it seems likely that school performance rankings may be more salient for parents at the district level. Still, including both the locally referenced and district referenced rankings in the same model produced no notable

substitution effects and maintains the same direction and approximate magnitudes for all coefficients suggesting that multiple frames of reference or nested hierarchies may be salient.

Table 5.7 reports odds ratios pertaining to the organizational ecology factors. As expected, the distance from a student's current school to the nearest traditional public school is negatively related to movement odds for both elementary and secondary students. This is also the case for distance to the nearest charter and private school for elementary students. Distance to the nearest charter and the nearest private school is positively related to movement odds for secondary students. This suggests that decision-making related to alternatives may differ between elementary and second school selection. It may also be that some segment of students in organizationally isolated areas of L.A. are more likely to travel farther to a charter or private high school, compared with pupils in more densely populated communities (although prior student demographics should control for part of this dynamic).

Figure 5.9: % Change in Odds of Movement by Local Organizational Diversity



After taking into account proximity, the mere count of public schools near a student's current school is positively related to the odds of movement, as is the number of secular private schools. However; the number of magnets, charter, and religious private schools all showed a negative relationship with the odds of movement. Proximal availability of the latter set of schools may be less important than the salience of other public schools within a family's community. At the elementary school level there are no substitution effects that might shed light on these patterns. At the secondary level, both distance to nearest charter and distance to nearest private school showed substitution effects when counts of these types of schools were entered into the model. Before including counts and diversity, each of these variables showed significant effects in the expected direction meaning that greater distances resulted in a

decrease in the odds of movement. Once counts for these types of schools were included, the distance variables show a positive relationship meaning increasing distance increases the odds of movement. Additional research is certainly required to better understand these differing patterns.

The organizational diversity surrounding a student's school is positively related to the odds of movement, including a particularly strong effect for secondary students. Figure 9 shows the relationship between the percent change in odds of movement and diversity in the organizational population around a student's school. Overall, we see that students are more likely to move when they are situated in a community with a more proximal and diverse set of school alternatives, even after taking into account all covariates. These results show that a diverse ecology of schools is associated with greater odds of movement, controlling for the abundance of various organizational types in the population. This also suggests that these schools are seen as distinct alternatives rather than similar versions of conventional schools, especially at the secondary level.

Discussion

Overall, effects from individual-level factors, including measures of social-class position, were similar to those found in prior work. Simple market-like postulates, such as higher rates of movement out of lower-quality schools, after controlling for individual level attributes, received support as well. In several instances, however, our findings show that the individual student or family's position in relation to proximal peers, and the ecology of nearby organizational alternatives, yield significant effects on movement. First, consistent findings are reviewed as they relate to the presented hypotheses and second, implications for how we think about the effects of institutional and organizational field-level change on the social behavior of individuals and families within these fields are discussed.

Conceiving of student movement as a discrete time process shows that time in school and grade progress relative to a student's surrounding cohort are consistent predictors of movement. As students move through grades at their school, they form social bonds. Moving through school with one's age cohort at a particular pace maintains the steady development of these bonds and meets normative expectations. Instances in which a student moves out of their cohort through a grade-skip or retention strains these bonds, reduces the social costs to a prospective school change and increases the odds of movement. We did find that when children are retained in a grade level, or they skip a grade, they are more likely to subsequently exit their school. This raises questions about how "abnormal" grade progression might affect existing social bonds as well as the creation of new bonds at different points along the timeline of a student's life in a particular school.

Individual-level race and ethnicity effects are noteworthy in a heavily Latino setting such as Los Angeles. Black, white, and Asian elementary students are more likely to move from their school, compared with Latinos. The dynamic for black families may relate to overall migration from South Central L.A. out to eastern parts of southern California. We also know that many

blacks moved from regular public to charter schools during the time-series (L. Dauter and B. Fuller 2011). Otherwise, the heightened odds of movement for white and Asian students raise equity concerns.

Introducing the social-relational predictors yields additional insights. For students of every ethnic group, attending a school with a larger proportion of one's own ethnicity decreases the odds of movement out of that school, with the one exception of Asians in high school. The interaction between student ethnicity and school ethnic composition is particularly interesting for black students. The effect of percent black on the odds of movement is negative for black students but positive for students of other ethnic groups. This effect is strong enough that a one standard deviation increase in the proportion of a school's enrollment made up by black students reduces the odds of movement for black students by about 4% but raises the odds of movement for non-black students by about 6%. Here too, it's the individual pupil in relation to peers that drives movement, not the student independent of their proximal social context.

The prior work, as earlier reviewed, finds that students from lower SES backgrounds are more likely to exit their school. We found that this individual-level effect is conditioned by school-level characteristics and differs by grade level. At the elementary level, the risk of movement decreases as mean parental education at the school level increases, but this effect is stronger for kids whose parents have low levels of education than for students whose parents graduated from college. Among secondary students, the risk of movement is higher for students at schools with higher mean levels of parental education, and this effect is heightened for students whose parents have less education.

These differing effects by grade level suggest that distinct social-comparison processes may operate at elementary and secondary levels. One possibility, consistent with our social-relational framework, is that during the elementary-school period lower-SES parents move their kids into higher SES schools in line with a status attainment process, but that by secondary school the "frog pond" effect takes hold, as students from relatively higher SES backgrounds opt to stick in schools where mean SES levels are comparatively low. It's possible that this switch may stem from the shift of decision-making from parents to the adolescent. Overall, we see how an individual student's SES relative to the SES composition of their school, again locally situated, contributes further to our understanding of how class and status attainment operate on student movement.

The results also show that students performing below their peers were more likely to exit than higher-achieving students. For both math and English language arts, and for each level of schooling examined, higher achievement is associated with lower odds of movement, but the squared term reduces this effect at higher levels of achievement. Math achievement has a similar effect at the elementary level as it does at the secondary level, but the magnitude of the effect for English language arts is much higher at the secondary level than at the elementary level. Furthermore, social-referencing to school or district-level achievement means yields

effects of similar magnitude, suggesting that parents are aware of their child's achievement position relative to local and district-wide test scores.

Organization-level variables also show effects, with multiple indicators of quality generally shaping the odds of movement in expected ways. A school's "program improvement" status increases the odds of movement, while higher mean levels of teacher education and higher proportions of fully credentialed teachers reduce the odds of movement. The student-teacher ratio shows the expected direction of effect at the elementary level, but the opposite direction at the secondary levels. At the secondary level, the possibility of threshold effects with this indicator, or a "frog pond" like situation, in which smaller classes provide little room for underachieving students to slip by and thus raise mobility rates, deserves additional research.

Moving to school performance in math and English language arts, our results show that it's the school's relative position that drives the odds of exit, not overall quality levels absent any nearby reference set. At the secondary level, increasing school rank for math and English language arts shows negative effects on the odds of movement. Secondary students in schools that rank high or low in both math and English language arts are more likely to move than students at schools in the middle of the performance hierarchy in both subjects. This curvilinear pattern could also stem from a frog pond effect taking hold at high performing high schools. If this is the case, the high odds of movement from the best performing schools should be concentrated among the lowest performing students at those schools, although this possibility was not test for this in the current study. School-level performance at the elementary level in general held a much smaller effect on the odds of movement than at the secondary level, and the patterns of effects show no evidence of the frog pond effect. Strikingly, at both the elementary and secondary levels the effects for district-wide reference measures show stronger results, suggesting that parents hold some perception of overall school quality district-wide. Here too, future work should dig into how parents in contrasting settings read signals of educational quality.

Students situated in locales that host a higher count and more diverse variety of schools display higher odds of movement. Our findings highlight how these organizational fields are quite local, at least in terms of the varying array of schools that parents or pupils consider within their neighborhood. In addition to diversity and abundance, proximity to alternative forms of schooling also plays a role. The distance between one's current and the nearest traditional public school is negatively related to movement odds for both elementary and secondary students. This is also the case for the nearest charter and private school among elementary students. In contrast, distance to the nearest charter or private school is positively related to movement odds for secondary students. Again, decision-making and contextual effects appear to differ between elementary and secondary students.

Conclusion

Families and students in Los Angeles make schooling decisions in a more decentralized and organizationally diverse educational field than in years past. With many school alternatives available close-by, parents can find multiple charter or magnet schools, as well as multiple regular public schools and private schools from which to choose. Almost 30% of elementary-level students and 40% of high school students in LAUSD now attend a school outside their assigned attendance area. Putting this in the broader context of institutional change in public education, both competition and organizational diversity are growing in public education, as resource relationships formerly governed by administrative fiat give way to overlapping organizational ecologies, institutional demands shift from structural evaluation to output oriented evaluation, and direct control over school organizations is decentralized.

This chapter examines the added effect of the organizational diversity associated with an increasingly complex organizational field on a salient social behavior in the field after taking in to account other key factors. Considerable research has described the process of individuals negotiating this shifting landscape as driven by choice with rational actors reasoning about how to maximize their utility. Sociological work on the other hand has emphasized the actor's social class position, cultural embeddedness, or the opportunity structures that constrain feasible options. This chapter demonstrates that student movement, and the family's propensity to move within the diversifying ecology of school forms, is better understood when the relative aspects of the student vis-à-vis their school and peers, and their school vis-à-vis other schools nearby and in the district as a whole are taken into account.

The time that a pupil has spent in their school building ties, and moving through a normatively defined grade sequence shapes movement odds. Parents and pupils also appear to be sensitive to their relational position in terms of the racial attributes of their schools, as well as one's achievement relative to school- or district-wide means. Finally, the local ecology of school organizations in which the family is situated further structures the odds of exiting one school for another. This is particularly important given the economic, ideological and political shifts that have opened up urban American public schooling to a diversifying array of school organizations with varying resource relationships creating increasingly heterogeneous local organizational ecologies. While the boundaries of the broader organizational field of public education are wide, distinctly local organizational topographies create contexts across which the relationships between variables and outcomes of interest for students and families may vary.

These local dynamics are often overlooked by scholars that study organizational fields like education. For example, both economists and sociologists tend to assume that charter schools universally sort students in similar fashion across states or school districts, or that low-income students typically display greater odds of exit (Hanushek et al. 2007; Rumberger 2003). On the one hand, the models in this chapter generally follow earlier findings tied to individual-level attributes of children or parents. However, the results of these models further suggest that parents and students engage in social comparisons and weigh alternatives in relation to

their local positions. The idea that students movement is a function of individual student and family characteristics or a response to failing schools as defined by performance on tests glosses over a few key aspects of the ways that individuals navigate local organizational ecologies.

First, movement takes place within the context of time spent in school. These results suggest that even as a school falls behind in terms of academic performance, exit will be dampened or accelerated depending upon the distribution of student-time spent in the school, or, for schools that have been in operation for at least a few years, across grades. As bonds between peers develop over time, costs to exit increase meaning that as school achievement declines, exit will be more costly for students in higher grades and schools may be able to sustain worse achievement in later grades with fewer consequences than if achievement is declining in early grades.

Second, aggregate achievement at the school level shows little effect on movement among elementary schools, but moving to the secondary level we find unexpected results showing higher odds of movement in at the low and high ends of the school performance continuum than in the middle. Improving performance in both math and English beyond a particular point, we begin to see evidence that could suggest an achievement spiral in which struggling students are forced out of the best performing schools while on the other end of the spectrum, better performing students at worse schools exit for greener pastures. This dynamic could reinforce existing school performance making it easier for higher ranked schools to improve and more difficult for lower ranked school to get ahead.

Finally, diverse organizational ecologies encourage student movement controlling for the abundance of alternative options, and school achievement. This implies that as the landscape of schooling becomes more diverse in terms of the types of schools proximal to families, student movement will become more common even for schools performing well according to achievement metrics. This may have real consequences for schools as their ability to hold on to a key resource, students, will vary according to the relative diversity of school forms that crop up in their vicinity. As organizational diversification continues, student movement may become more common regardless of a school's aggregate academic performance.

Chapter 7 - Conclusion

American public education has undergone significant institutional change over the course of the last fifty years. The accountability legislation that swept across states centralized evaluative control and shifted the bases for evaluation from structural and process oriented means to output oriented means. Charter school laws created a new organizational population with decentralized instrumental decision making and autonomies from traditional district management. The creation of alternative routes of teacher recruitment and certification has changed the settled relationships between universities, unions, and districts governing the flow of teachers into public schools. The institutions regulating the streams of teachers, students and funding into schools and districts has fragmented and federalized, as policy makers have cultivated competition and injected uncertainty into once secure resource flows.

These forces have reshaped the organizational landscape of public schooling, and have generated increasing heterogeneity in key institutional relationships. This heterogeneity presents difficulties for the dominant theoretical approach to organizational behavior in the sociology of education. Neoinstitutionalist focus on structural conformity and response to concerns of legitimacy are unable to deal effectively with district, school, and student/family behavior in a world of increasing technical demands, competition, heterogeneous autonomies, and varying degrees of organizational diversity. Explaining organizational diversity, the differential growth of new organizations, and how diversifying organizational fields shape individual behavior requires moving beyond a focus on legitimation processes toward the inclusion of power and control as well as competition and the interactions between these processes.

For the last decade, public thought about the failings of education in the United States has been focused on school choice. Though the meaning of "choice" has changed over the years, from a euphemism for voluntary segregation (Clotfelter 2004) to a policy panacea for ineffectiveness and inefficiency (Chubb and Moe 1990a). In the most recent context, school choice has been closely linked with the efforts to introduce market-like mechanisms into the public school system. The essence of the current critique of public schools is that schools perform poorly because they are beholden to stodgy bureaucracies, and insulated from competitive pressures (Chubb and Moe 1990b). The common conceptual thread in virtually all contemporary education reform is that schools must be held accountable for the performance of their students, and parents must be free to move their children out of poorly performing schools and into better ones. With a working accountability system and expanded school choice, schools will be forced to compete with one another for public money and thus will be encouraged to innovate and improve organizational response to poor student performance (Belfield and Levin 2002).

As market mechanisms become increasingly important in reorganizing public education, a field previously dominated by bureaucratic and political structures, research conducted by sociologists and economists has focused largely on individual level outcomes, and to a much

lesser extent on organization level outcomes. The field of public education is a prime example of a domain characterized by strong normative and coercive isomorphic pressures (DiMaggio and Powell 1983; J. W. Meyer and Rowan 1983). In fact, this is the general critique that economic and political institutionalist perspectives have leveled at traditional public schooling when asserting that market style interventions could reduce these pressures and make schools more responsive to families and students than they are to politicians and bureaucrats (Chubb and Moe 1990b). Advocates of this perspective seek to inject uncertainty into the resource ties that schools depend upon by creating the possibility for schools to take vital inputs from one another. While the rationale for introducing competition is built upon the notion that these processes will improve schools and lift individual student achievement, the primary mechanism for inducing this improvement is located in the relations between schools vis-á-vis the students they serve and the teachers they employ.

Even as these changes rework the relationships between existing and newly formed organizations in this diversifying field, existing accounts of education organizations as responding primarily to uniform institutional demands fall short. How districts make decisions about management strategies, negotiate accountability regimes and freely authorize or restrict the expansion of charters will depend not only upon interactions with state agencies demanding structural congruence with enacted categories (W. Richard Scott and J. W. Meyer 1991) and mimicry of nearby alters (DiMaggio and Powell 1983), but also upon the prevailing organizational ecology (Hannan and Freeman 1993), and the power of local districts(Pfeffer and Salancik 2003). Likewise, the factors shaping student and family choices have changed not only due to the structural changes opening up traditional residentially assigned systems, but also to the introduction of increasing organizational diversity shifting the variety of accessible schooling alternatives, including public schools, district managed alternatives like magnets, and pilot schools, private schools and a wide variety of hybridizations authorized via charter. This organizational diversification is highly uneven in its development creating increasing differences between states, within states across districts, and within districts across local neighborhoods.

The differential changes in organizational diversity, resource relationships, and governance of schools across districts and states is being mirrored in the reversion to heterogeneity in accountability systems across states. Over the course of the late 1980's and 1990's states put their own standards and accountability systems in place. When NCLB was passed, a federal system was put in place which, in some states, operated alongside existing state systems. Even now, there are deep changes occurring to the national accountability system put in place with NCLB that have the potential to further increase heterogeneity of institutional inter-organizational forces across states and localities.

In many ways NCLB was the culmination of the reform efforts taking place over the twenty years prior to its passage. The expansion, at the state level, of standards and accountability based reforms over the course of the 1980's, the Federal funding of state standards development and the fight over national standards, the dramatic changes in the institutions regulating teacher certification, as well as the expansion of choice over the course of the 1990's all found places within the new law. The ideas behind the standards based

assessment at the front end of the accountability system set up by NCLB were rooted firmly in the effectiveness frame of education reform that had dominated public debate and legislation during the 1980's and 1990's. Furthermore, with the law's focus on breaking out performance by subgroup, it attempts to blend the equality frame orienting reform during the desegregation efforts of the 1960's and 1970's with the effectiveness frame by focusing not only on school performance overall, but also on the achievement gap between groups, particularly between race and ethnic groups, within schools, while the law's penalties along with the direct support of charter schools and legitimation of alternative teacher certification routes support the autonomy critique of public schools that dominates current discourse.

While current Federal policy continues these areas of emphasis, political horse trading between the Federal and state governments has begun the process of dismantling the national accountability system in favor of spreading alternative teacher compensation and national content standards while retaining punitive measures for the poorest performing schools. Since NCLB's passage, Federal education policy in the United States has continued to focus on attempting to improve school performance through using data to hold schools and teachers accountable, by inducing competition between schools for students, and by fostering alternative certification programs for prospective teachers. While support for vouchers has waned, advocates for charter schools have found political support from all across the spectrum, and Federal policy has increasingly tended towards support for introducing competition into public education through the promotion of charters. At the same time, political backlash to NCLB has created opportunity for states to escape AYP and some of the mandated sanctions, however the menu of sanctions set up by NCLB remain intact in many states across the country, and the Federal government has continued to support alternative credentialing, and has taken the jurisdictional battle over the teaching profession one step further pushing states to leverage data to hold teachers directly accountable for their student's performance.

The Obama Administration's major education reform effort Race to the Top (RTT) continued themes introduced by NCLB of standard setting, accountability systems engineering and competition. RTT continued the extension of Federal power over local education institutionalized by NCLB by setting up a competition between states for Federal dollars in which states showing commitment to a series of goals laid out by the administration would receive a piece of the $4.35 billion in funding, while states which were unable or unwilling to commit to the Administration's goals and to convince local education agencies (LEAs) to follow their lead, received nothing. RTT was funded a part of the American Recovery and Reinvestment Act (ARRA) of 2009 which was passed following the financial collapse and economic downturn of 2008. Most state and local governments were deep in the red and education agencies badly underfunded. In this context, states were highly incentivized to adopt the administration's goals with states changing laws to gain position in the competition for funding. Emphasis was placed on the creation of longitudinal data systems capable of tracking school, teacher and individual student performance over time, the use of value added measures to evaluate teachers, the adoption of common national standards as laid out by the Common Core State Standards Initiative of the NGA, and the lifting of charter school caps and

anti-charter policies. What's more, ARRA added $3.5 billion to the funds provided to states under the School Improvement Grant (SIG) provisions of NCLB targeting persistently low achieving schools, offering states significant funding for use in the reconstitution, conversion to charter, privatization of management, or transformation of schools through teacher professional development, pay for performance, and an evaluation system linking teachers to student achievement.

The education policy of the Obama administration has now culminated in a dramatic shift in the relative balance of power and the roles of federal, state and local authorities that is exemplified by the way it has handled NCLB. The Department of Education began granting states flexibility from some of the most onerous provisions of NCLB in 2011. States were allowed to submit applications which upon approval would mean they are no longer subject to key provisions of NCLB including those concerning AYP and the timeline for 100% proficiency, the provisions regarding PI and for both school and local education agencies and their associated penalties including PSC and supplemental services. Instead, states opting for waivers would need to comply with a list of requirements laid out by the administration. These include: adopting "college and career ready" standards including either the Common Core Standards or another set of standards approved by a "network" of State colleges and universities, maintaining a testing system aligned to these standards administered annually capable of measuring student growth, an accountability system that "differentially recognizes" schools based upon performance on these tests and changes in performance over time, and the inclusion of performance measures that incorporate student achievement growth into personnel decisions of public schools. The onerous penalties proscribed under NCLB have resulted in nearly every state seeking waivers[40], despite resistance to one or more of the requirements.

Since almost every state had accountability systems in place prior to NCLB the administration's testing and accountability requirements have been the least controversial aspect of the waiver quid pro quo. Many states had also begun to adopt Common Core Standards prior to the possibility of NCLB waivers as part of RTT applications or otherwise; though this requirement was politically contentious for some states, most notably Texas (McNeil 2012). Without question, the most politically difficult requirements the administration put on the granting of waivers are those surrounding teacher evaluation, compensation, and promotion. Unwillingness to comply with the administration's requirements for using test scores in teacher evaluation systems has resulted in the rejection of two applications including Iowa (Klein 2012b), and California (Klein 2012a) and the withdrawal of one more in Vermont (Klein 2012c). In California, the process has been contentious enough that a group of nine California school districts have created their own application for an NCLB waiver (Maxwell 2013).

[40] As of 2013, only Montana and Nebraska have not applied for NCLB waivers: http://www.edweek.org/ew/section/infographics/nclbwaivers.html

For those states that do receive waivers, the primary benefit that they won't be held to the requirement for 100% proficiency by 2014, a goal that many found unrealistic (Ravitch 2010). With waivers, even though local districts and schools will be exempt from NCLB's cascading penalties for schools failing to meet AYP, states are still required to identify "priority" schools equal to at least 5% of the state's Title I schools in which implementation of a turnaround model including those written into NCLB such as restructuring, conversion, or state takeover is required. Beyond this, states will need to create tiered intervention systems which will vary in their interventions. Some states like Ohio will continue to maintain a list of turnaround options including closure, conversion to charter, turnover to private management and closure. Others like Tennessee and Massachusetts will turn these schools over to a state run district. In Tennessee's case, management of some schools taken over by the state will in turn be contracted out to charter operators.

The NCLB waiver process is emblematic of the ongoing fracturing of the institutional field of American public education. As instrumental roles and control over educational discourse continue to shift between federal, state, and local governmental bodies and the institutional structures of accountability diversify across state lines, as stable structures of teacher recruitment, training, and employment give way to diversifying pathways into teaching and evaluation based upon output measures rather than credentialing, as the types of administrative organizations governing schools diversify along with the autonomies allowed to schools in terms of curricular and pedagogical approaches, the organizational field of public education and K-12 education as a whole becomes increasingly complex, and the theoretical tools based upon stable and resilient institutional structures unified through a centralized, though fragmented educational system (J. W. Meyer and Rowan 1977; J. W. Meyer 1983; J. W. Meyer et al. 1988, 1987; W. Richard Scott and J. W. Meyer 1988) become less useful without qualification and attention to local situations of power, and organizational ecologies.

In the chapters above, I've taken steps to move beyond this dominant framework outlining a basic theoretical approach integrating insights from key organizational perspectives with the hope of advancing current capacity for understanding these changes as they shift the organizational landscape. I have offered an institutional history of the key shifts in the system of public education and tried to show how they have changed the environments faced by schools and districts. I examined the inter-organizational processes shaping the adoption and growth of a charter schools, a new organizational population and one of the key institutional changes driving the need for new integrated theory. Finally, I moved to the individual level to examine how the organizational diversification spurred by the growth of charter schools impacts the movement of students between schools in a large urban school district. This only scratches the surface of the far-reaching institutional changes that continue to sweep across the field of American public education.

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Appendix A

This appendix contains information on processes governing data cleaning and construction as well as exclusions and other decisions made during the analysis presented in Chapter 4. First I discuss processes dealing with geographic and address processing. Second, I present detailed data on counts in various sub-samples used in chapter 4 models, and present correlation tables for independent variables used in the models.

Geography and Distances

Some schools were excluded from the calculation of the spatial measures used in this chapter. First, schools whose listed addresses were unable to be geocoded, or that have a P.O. Box listed instead of a facility address, were excluded. The numbers of schools with bad addresses, defined in this way, was minimal, and are listed by year in Table A.1.

Table A.1: Bad Addresses

Year	Good Address	Bad Address	Total
1992	7,511	67	7,578
1993	7,591	64	7,655
1994	7,678	62	7,740
1995	7,733	62	7,795
1996	7,856	62	7,918
1997	8,050	50	8,100
1998	8,202	44	8,246
1999	12,519	40	12,559
2000	12,850	21	12,871
2001	12,833	14	12,847
2002	12,796	14	12,810
2003	12,769	12	12,781
2004	12,829	8	12,837
2005	13,023	9	13,032
2006	12,923	9	12,932
2007	13,044	10	13,054
2008	13,030	8	13,038
2009	12,970	9	12,979
2010	12,971	9	12,980
2011	12,828	9	12,837

Second, there are instances in which geocoding incorrectly specifies a location for a school. In order to account for school locations that are outside of reasonable district distances, I construct the distance measures and the concentration measure after excluding pairs of

schools that are beyond specific distance parameters from one another. I decide which pairs of schools, by first finding the 90th percentile of distances for each district year. For district years in which the 90th percentile of distances is over 50 miles, I exclude distance pairs further than the 90th percentile. I present the number of distance pairs excluded in Table A.2.

Table A.2: Data for Distance Calculations

	Pairs Excluded		Pairs Included		Total Pairs	
Year	N	%	N	%	N	%
1992	57	0.02	289,515	99.98	289,572	100.00
1993	36	0.01	292,631	99.99	292,667	100.00
1994	37	0.02	296,027	99.98	296,064	100.00
1995	38	0.01	296,372	99.99	296,410	100.00
1996	43	0.01	299,084	99.99	299,127	100.00
1997	56	0.02	304,183	99.98	304,239	100.00
1998	73	0.02	310,117	99.98	310,190	100.00
1999	722	0.07	1,014,440	99.93	1,015,162	100.00
2000	686	0.06	1,059,679	99.94	1,060,365	100.00
2001	381	0.04	1,021,206	99.96	1,021,587	100.00
2002	487	0.05	1,020,807	99.95	1,021,294	100.00
2003	458	0.04	1,021,017	99.96	1,021,475	100.00
2004	622	0.06	1,034,645	99.94	1,035,267	100.00
2005	639	0.06	1,073,144	99.94	1,073,783	100.00
2006	426	0.04	1,077,244	99.96	1,077,670	100.00
2007	709	0.07	1,089,863	99.93	1,090,572	100.00
2008	486	0.04	1,121,015	99.96	1,121,501	100.00
2009	631	0.06	1,128,335	99.94	1,128,966	100.00
2010	306	0.03	1,174,328	99.97	1,174,634	100.00
2011	1,711	0.14	1,184,751	99.86	1,186,462	100.00

Data and Subsamples

Individual districts vary in the number of times they are observed in the data due to district dissolution and unification. As described in chapter 4, the data set used for estimation was further restricted to districts having at least two operating public schools at some point between 1992 and 2011. In addition, some covariates, particularly those from the NCES school district finances survey had missing data for some years. Finally, as described in the methods section of chapter 4, this chapter employs fixed effects models which cannot use data from panels with no variation in the dependent variable. Accordingly, the sample is restricted to districts that have at least one operating charter during the time period. Counts of districts and district years for these sub-sets of the data are presented in table A.3 below.

Table A.3: Counts of Districts and Observations For Sub-Samples

	Non-Single School Districts				Single School Districts			
	it		*i*		*it*		*i*	
	N	Δ	N	Δ	N	Δ	N	Δ
All Districts	14,671		811		3,594		199	
Obs. for Hazard	11,744		808		3,519		198	
Districts with Charter	5,839		311		133		8	
All Districts 1999-2008	7,705	(6,966)	779	(32)	1,891	(1,703)	193	(6)
Obs. for Hazard 1999-2008	5,682	(6,062)	662	(146)	1,826	(1,693)	189	(9)
Districts with Charter 1999-2008	3,091	(2,748)	310	(1)	73	(60)	8	-

I also present descriptive statistics for sub-samples not reported in the chapter and for non-backfilled versions of independent variables including: 1) Table A.4 shows all non-single-school districts for non-filled variables, 2) Table A.5 shows all non-single-school districts for non-filled variables 1999-2008, 3) Table A.6 shows all non-single-school district observations prior to charter adoption for non-filled variables, 4) Table A.7 shows all non-single-school district observations on districts with at least one operating charter over the time series for non-filled variables, 5) Table A.8 shows all single-school districts for non-filled variables, 6) Table A.9 shows all single-school districts for non-filled variables 1999-2008, 7) Table A.10 shows all single-school district observations prior to charter adoption for non-filled variables, 8) Table A.11 shows all single-school district observations on districts with at least one operating charter over the time series for non-filled variables, 9) Table A.12 shows all non-single-school districts for filled variables, 10) Table A.13 shows all non-single-school districts for filled variables 1999-2008, 11) Table A.14 shows all single-school districts for filled variables, 12) Table A.15 shows all single-school districts for filled variables 1999-2008, 13) Table A.16 shows all single-school district observations prior to charter adoption for filled variables, 14) Table A.17 shows all single-school district observations on districts with at least one operating charter over the time series for filled variables.

Table A.4: Non-Single-School District Years Descriptives for Independent Variables (Without Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	13.70	41.42	0.00	1225.00	14,671
Max Between School Distance	6.66	8.69	0.00	50.00	14,596
% Black Students	4.02	6.26	0.00	76.88	14,671
% Latino Students	34.58	26.66	0.00	99.65	14,671
% Teachers with MA	30.91	13.93	0.00	100.00	11,624
Public Student Teacher Ratio	21.02	3.41	0.00	40.85	11,626
Private Student Teacher Ratio	9.79	8.69	0.00	41.00	9,963
District CST Performance	0.18	0.56	-3.58	1.87	10,740
Years Since Law	9.92	5.47	1.00	19.00	14,671
Years Since Law Sq	128.32	112.27	1.00	361.00	14,671
# State/Co. Authorized Charters in Co.	0.69	1.37	0.00	13.00	14,671
State/Co. Authorized Charters in Co. Dummy	0.36	0.48	0.00	1.00	14,671
# Dist. Authorized Charters in Other Dist. in Co.	16.76	36.46	0.00	245.00	14,671
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.82	0.39	0.00	1.00	14,671
% of Non-Charter Schools in PI	9.18	20.73	0.00	100.00	14,671
Administrators Per School	1.09	0.93	0.00	8.45	14,671
Total Revenue Per Student	8.20	4.83	0.04	223.21	12,920
Ratio of Local to State Revenue	1.06	1.39	0.03	18.04	12,919
Charter - Traditional Public Performance Gap	0.14	0.95	-7.81	6.88	10,740
% of Public Schools Alternative	2.04	5.37	0.00	50.00	14,671
% of Public Schools Special Ed	0.46	2.37	0.00	50.00	14,671
% of Public Schools At Risk	12.14	16.51	0.00	100.00	14,671
Private School Dummy	0.65	0.48	0.00	1.00	9,963
Ratio of Private to Traditional Public Schools	-0.35	0.37	-0.95	2.00	9,963
Private/Public Geographic Concentration	0.52	10.50	-0.51	517.28	9,930

Table A.5: Non-Single-School District Years 1999-2008 Descriptives for Independent Variables (Without Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	15.65	47.08	0.00	1225.00	7,705
Max Between School Distance	7.14	8.98	0.00	50.00	7,670
% Black Students	4.13	6.31	0.00	73.91	7,705
% Latino Students	35.46	26.99	0.00	99.65	7,705
% Teachers with MA	31.56	14.17	0.00	100.00	7,704
Public Student Teacher Ratio	20.40	3.18	0.00	40.85	7,705
Private Student Teacher Ratio	10.05	8.82	0.00	41.00	7,705
District CST Performance	0.19	0.55	-3.58	1.85	7,705
Years Since Law	11.48	2.87	7.00	16.00	7,705
Years Since Law Sq	140.00	66.36	49.00	256.00	7,705
# State/Co. Authorized Charters in Co.	0.71	1.01	0.00	7.00	7,705
State/Co. Authorized Charters in Co. Dummy	0.47	0.50	0.00	1.00	7,705
# Dist. Authorized Charters in Other Dist. in Co.	18.68	31.69	0.00	185.00	7,705
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.91	0.29	0.00	1.00	7,705
% of Non-Charter Schools in PI	9.04	19.51	0.00	100.00	7,705
Administrators Per School	1.39	0.86	0.00	8.45	7,705
Total Revenue Per Student	9.25	3.86	0.45	79.00	7,645
Ratio of Local to State Revenue	1.05	1.42	0.03	18.04	7,645
Charter - Traditional Public Performance Gap	0.14	0.95	-7.81	6.88	7,705
% of Public Schools Alternative	2.15	5.44	0.00	50.00	7,705
% of Public Schools Special Ed	0.38	1.98	0.00	33.33	7,705
% of Public Schools At Risk	13.43	17.20	0.00	100.00	7,705
Private School Dummy	0.66	0.47	0.00	1.00	7,705
Ratio of Private to Traditional Public Schools	-0.35	0.37	-0.94	2.00	7,705
Private/Public Geographic Concentration	0.58	11.60	-0.51	517.28	7,677

Table A.6: Non-Single-School District Years for Hazard Models - Descriptives for Independent Variables (Without Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	9.84	12.85	1.00	641.00	11,744
Max Between School Distance	5.49	7.34	0.00	49.97	11,693
% Black Students	3.58	5.79	0.00	76.88	10,982
% Latino Students	34.52	27.55	0.00	99.65	10,982
% Teachers with MA	30.68	14.08	0.00	100.00	9,271
Public Student Teacher Ratio	21.17	3.18	0.00	34.42	9,272
Private Student Teacher Ratio	9.24	8.88	0.00	41.00	6,623
District CST Performance	0.19	0.60	-3.58	1.87	7,313
Years Since Law	8.12	5.41	0.00	18.00	11,744
Years Since Law Sq	95.16	97.46	0.00	324.00	11,744
# State/Co. Authorized Charters in Co.	0.49	1.03	0.00	9.00	11,744
State/Co. Authorized Charters in Co. Dummy	0.29	0.45	0.00	1.00	11,744
# Dist. Authorized Charters in Other Dist. in Co.	12.88	31.09	0.00	229.00	11,744
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.73	0.44	0.00	1.00	11,744
% of Non-Charter Schools in PI	5.96	17.12	0.00	100.00	11,744
Administrators Per School	1.07	0.92	0.00	6.78	11,744
Total Revenue Per Student	7.99	4.36	0.04	148.15	10,350
Ratio of Local to State Revenue	1.09	1.48	0.03	18.04	11,068
Charter - Traditional Public Performance Gap	0.00	0.00	0.00	0.00	7,313
% of Public Schools Alternative	1.93	5.43	0.00	100.00	11,744
% of Public Schools Special Ed	0.35	2.15	0.00	50.00	11,744
% of Public Schools At Risk	12.14	16.77	0.00	100.00	11,744
Private School Dummy	0.61	0.49	0.00	1.00	6,623
Ratio of Private to Traditional Public Schools	-0.32	0.38	-0.95	2.00	6,623
Private/Public Geographic Concentration	0.54	12.07	-0.50	517.28	6,599

Table A.7: Non-Single-School District Years for F.E. Models- Descriptives for Independent Variables (Without Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	20.19	63.85	0.00	1225.00	5,839
Max Between School Distance	8.68	10.28	0.00	50.00	5,807
% Black Students	5.26	7.37	0.00	70.70	5,839
% Latino Students	32.83	24.03	0.00	99.65	5,839
% Teachers with MA	30.83	13.57	0.00	100.00	4,623
Public Student Teacher Ratio	20.96	3.89	0.00	40.85	4,624
Private Student Teacher Ratio	10.98	8.50	0.00	40.49	4,002
District CST Performance	0.14	0.57	-3.58	1.35	4,311
Years Since Law	9.99	5.46	1.00	19.00	5,839
Years Since Law Sq	129.68	112.32	1.00	361.00	5,839
# State/Co. Authorized Charters in Co.	0.69	1.38	0.00	13.00	5,839
State/Co. Authorized Charters in Co. Dummy	0.36	0.48	0.00	1.00	5,839
# Dist. Authorized Charters in Other Dist. in Co.	16.64	32.29	0.00	245.00	5,839
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.86	0.35	0.00	1.00	5,839
% of Non-Charter Schools in PI	9.88	21.14	0.00	100.00	5,839
Administrators Per School	1.14	0.94	0.00	8.45	5,839
Total Revenue Per Student	8.06	5.39	0.23	223.21	5,138
Ratio of Local to State Revenue	0.85	0.83	0.03	7.76	5,138
Charter - Traditional Public Performance Gap	0.35	1.48	-7.81	6.88	4,311
% of Public Schools Alternative	2.19	5.34	0.00	50.00	5,839
% of Public Schools Special Ed	0.62	2.58	0.00	50.00	5,839
% of Public Schools At Risk	9.82	14.20	0.00	75.00	5,839
Private School Dummy	0.73	0.44	0.00	1.00	4,002
Ratio of Private to Traditional Public Schools	-0.41	0.35	-0.95	1.07	4,002
Private/Public Geographic Concentration	0.47	5.99	-0.51	161.75	3,990

Table A.8: Single-School District Years Descriptives for Independent Variables (Without Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	1.04	0.31	0.00	4.00	3,594
Max Between School Distance	0.17	1.75	0.00	48.72	3,594
% Black Students	1.22	2.74	0.00	70.70	3,594
% Latino Students	28.55	28.20	0.00	100.00	3,594
% Teachers with MA	22.83	19.57	0.00	100.00	2,853
Public Student Teacher Ratio	17.78	5.11	0.00	39.00	2,853
Private Student Teacher Ratio	0.87	4.02	0.00	47.00	2,437
District CST Performance	-0.70	1.72	-3.58	1.83	2,627
Years Since Law	9.90	5.47	1.00	19.00	3,594
Years Since Law Sq	127.82	111.96	1.00	361.00	3,594
# State/Co. Authorized Charters in Co.	0.56	1.06	0.00	13.00	3,594
State/Co. Authorized Charters in Co. Dummy	0.33	0.47	0.00	1.00	3,594
# Dist. Authorized Charters in Other Dist. in Co.	5.74	11.41	0.00	245.00	3,594
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.72	0.45	0.00	1.00	3,594
% of Non-Charter Schools in PI	4.09	19.81	0.00	100.00	3,594
Administrators Per School	0.57	0.71	0.00	6.05	3,594
Total Revenue Per Student	9.82	6.51	0.89	116.27	3,221
Ratio of Local to State Revenue	1.23	1.84	0.03	18.51	3,221
Charter - Traditional Public Performance Gap	0.00	0.00	0.00	0.00	2,627
% of Public Schools Alternative	0.00	0.00	0.00	0.00	3,594
% of Public Schools Special Ed	0.00	0.00	0.00	0.00	3,594
% of Public Schools At Risk	0.00	0.00	0.00	0.00	3,594
Private School Dummy	0.07	0.26	0.00	1.00	2,437
Ratio of Private to Traditional Public Schools	0.02	0.16	0.00	2.00	2,437
Private/Public Geographic Concentration	0.00	0.04	-0.50	0.73	2,437

Table A.9: Single-School District Years 1999-2008 Descriptives for Independent Variables (Without Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	1.07	0.39	0.00	4.00	1,891
Max Between School Distance	0.28	2.37	0.00	48.72	1,891
% Black Students	1.33	3.20	0.00	70.70	1,891
% Latino Students	28.78	28.37	0.00	100.00	1,891
% Teachers with MA	24.32	20.39	0.00	100.00	1,891
Public Student Teacher Ratio	16.81	4.94	0.00	39.00	1,891
Private Student Teacher Ratio	0.93	4.25	0.00	47.00	1,891
District CST Performance	-0.71	1.72	-3.58	1.78	1,891
Years Since Law	11.48	2.87	7.00	16.00	1,891
Years Since Law Sq	140.02	66.25	49.00	256.00	1,891
# State/Co. Authorized Charters in Co.	0.60	0.87	0.00	7.00	1,891
State/Co. Authorized Charters in Co. Dummy	0.41	0.49	0.00	1.00	1,891
# Dist. Authorized Charters in Other Dist. in Co.	6.82	10.44	0.00	185.00	1,891
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.84	0.36	0.00	1.00	1,891
% of Non-Charter Schools in PI	3.97	19.52	0.00	100.00	1,891
Administrators Per School	0.75	0.73	0.00	6.00	1,891
Total Revenue Per Student	11.33	6.74	3.69	116.27	1,888
Ratio of Local to State Revenue	1.23	1.84	0.03	18.51	1,888
Charter - Traditional Public Performance Gap	0.00	0.00	0.00	0.00	1,891
% of Public Schools Alternative	0.00	0.00	0.00	0.00	1,891
% of Public Schools Special Ed	0.00	0.00	0.00	0.00	1,891
% of Public Schools At Risk	0.00	0.00	0.00	0.00	1,891
Private School Dummy	0.08	0.26	0.00	1.00	1,891
Ratio of Private to Traditional Public Schools	0.02	0.18	0.00	2.00	1,891
Private/Public Geographic Concentration	0.00	0.04	-0.45	0.73	1,891

Table A.10: Single-School District Years for Hazard Models - Descriptives for Independent Variables (Without Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	1.05	0.27	1.00	4.00	3,519
Max Between School Distance	0.16	1.76	0.00	48.72	3,519
% Black Students	1.17	2.19	0.00	28.57	3,330
% Latino Students	27.94	28.12	0.00	100.00	3,330
% Teachers with MA	22.77	19.56	0.00	100.00	2,781
Public Student Teacher Ratio	18.13	4.53	0.00	39.00	2,781
Private Student Teacher Ratio	0.74	3.82	0.00	47.00	2,181
District CST Performance	-0.71	1.73	-3.58	1.83	2,370
Years Since Law	8.85	5.47	0.00	18.00	3,519
Years Since Law Sq	108.25	101.47	0.00	324.00	3,519
# State/Co. Authorized Charters in Co.	0.47	0.90	0.00	9.00	3,519
State/Co. Authorized Charters in Co. Dummy	0.30	0.46	0.00	1.00	3,519
# Dist. Authorized Charters in Other Dist. in Co.	5.00	10.34	0.00	229.00	3,519
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.67	0.47	0.00	1.00	3,519
% of Non-Charter Schools in PI	3.15	17.48	0.00	100.00	3,519
Administrators Per School	0.56	0.71	0.00	6.05	3,519
Total Revenue Per Student	9.80	6.50	0.89	116.27	3,149
Ratio of Local to State Revenue	1.23	1.87	0.03	18.51	3,335
Charter - Traditional Public Performance Gap	0.00	0.00	0.00	0.00	2,370
% of Public Schools Alternative	0.00	0.00	0.00	0.00	3,519
% of Public Schools Special Ed	0.00	0.00	0.00	0.00	3,519
% of Public Schools At Risk	0.00	0.00	0.00	0.00	3,519
Private School Dummy	0.06	0.25	0.00	1.00	2,181
Ratio of Private to Traditional Public Schools	0.01	0.15	0.00	2.00	2,181
Private/Public Geographic Concentration	0.00	0.04	-0.50	0.14	2,181

Table A.11: Single-School District Years for F.E. Models- Descriptives for Independent Variables (Without Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	0.83	0.80	0.00	3.00	133
Max Between School Distance	0.24	0.50	0.00	1.31	133
% Black Students	2.91	8.72	0.00	70.70	133
% Latino Students	34.80	19.79	1.82	86.14	133
% Teachers with MA	23.21	14.60	0.00	70.00	108
Public Student Teacher Ratio	10.29	10.13	0.00	27.88	108
Private Student Teacher Ratio	4.90	7.84	0.00	21.00	91
District CST Performance	0.26	0.69	-3.50	1.51	98
Years Since Law	9.82	5.36	1.00	19.00	133
Years Since Law Sq	124.95	109.22	1.00	361.00	133
# State/Co. Authorized Charters in Co.	0.20	0.59	0.00	3.00	133
State/Co. Authorized Charters in Co. Dummy	0.14	0.34	0.00	1.00	133
# Dist. Authorized Charters in Other Dist. in Co.	8.56	8.20	0.00	38.00	133
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.92	0.28	0.00	1.00	133
% of Non-Charter Schools in PI	0.00	0.00	0.00	0.00	133
Administrators Per School	0.61	0.56	0.00	3.00	133
Total Revenue Per Student	7.82	3.49	3.79	24.29	118
Ratio of Local to State Revenue	1.03	1.45	0.12	5.98	118
Charter - Traditional Public Performance Gap	0.00	0.00	0.00	0.00	98
% of Public Schools Alternative	0.00	0.00	0.00	0.00	133
% of Public Schools Special Ed	0.00	0.00	0.00	0.00	133
% of Public Schools At Risk	0.00	0.00	0.00	0.00	133
Private School Dummy	0.29	0.45	0.00	1.00	91
Ratio of Private to Traditional Public Schools	0.16	0.40	0.00	2.00	91
Private/Public Geographic Concentration	-0.02	0.11	-0.30	0.73	91

Table A.12: Non-Single-School District Years Descriptives for Independent Variables (With Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	15.35	47.15	0.00	1225.00	14,671
Max Between School Distance	6.66	8.69	0.00	50.00	14,596
% Black Students	4.02	6.26	0.00	76.88	14,671
% Latino Students	34.58	26.66	0.00	99.65	14,671
% Teachers with MA	31.54	14.37	0.00	100.00	14,663
Public Student Teacher Ratio	21.06	3.48	0.00	40.85	14,668
Private Student Teacher Ratio	10.13	8.91	0.00	41.00	14,548
District CST Performance	0.13	0.49	-3.58	1.87	14,671
Years Since Law	9.92	5.47	1.00	19.00	14,671
Years Since Law Sq	128.32	112.27	1.00	361.00	14,671
# State/Co. Authorized Charters in Co.	0.69	1.37	0.00	13.00	14,671
State/Co. Authorized Charters in Co. Dummy	0.36	0.48	0.00	1.00	14,671
# Dist. Authorized Charters in Other Dist. in Co.	16.76	36.46	0.00	245.00	14,671
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.82	0.39	0.00	1.00	14,671
% of Non-Charter Schools in PI	9.18	20.73	0.00	100.00	14,671
Administrators Per School	1.38	0.84	0.00	8.45	14,668
Total Revenue Per Student	8.56	5.18	0.04	223.21	14,400
Ratio of Local to State Revenue	1.08	1.46	0.03	18.04	14,399
Charter - Traditional Public Performance Gap	0.10	0.82	-7.81	6.88	14,671
% of Public Schools Alternative	2.04	5.37	0.00	50.00	14,671
% of Public Schools Special Ed	0.46	2.37	0.00	50.00	14,671
% of Public Schools At Risk	12.14	16.51	0.00	100.00	14,671
Private School Dummy	0.66	0.47	0.00	1.00	14,548
Ratio of Private to Traditional Public Schools	-0.34	0.37	-0.95	2.00	14,548
Private/Public Geographic Concentration	0.49	9.18	-0.51	517.28	14,479

Table A.13: Non-Single-School District Years 1999-2008 Descriptives for Independent Variables (With Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	15.65	47.08	0.00	1225.00	7,705
Max Between School Distance	7.14	8.98	0.00	50.00	7,670
% Black Students	4.13	6.31	0.00	73.91	7,705
% Latino Students	35.46	26.99	0.00	99.65	7,705
% Teachers with MA	31.56	14.17	0.00	100.00	7,704
Public Student Teacher Ratio	20.40	3.18	0.00	40.85	7,705
Private Student Teacher Ratio	10.05	8.82	0.00	41.00	7,705
District CST Performance	0.19	0.55	-3.58	1.85	7,705
Years Since Law	11.48	2.87	7.00	16.00	7,705
Years Since Law Sq	140.00	66.36	49.00	256.00	7,705
# State/Co. Authorized Charters in Co.	0.71	1.01	0.00	7.00	7,705
State/Co. Authorized Charters in Co. Dummy	0.47	0.50	0.00	1.00	7,705
# Dist. Authorized Charters in Other Dist. in Co.	18.68	31.69	0.00	185.00	7,705
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.91	0.29	0.00	1.00	7,705
% of Non-Charter Schools in PI	9.04	19.51	0.00	100.00	7,705
Administrators Per School	1.39	0.86	0.00	8.45	7,705
Total Revenue Per Student	9.25	3.86	0.45	79.00	7,645
Ratio of Local to State Revenue	1.05	1.42	0.03	18.04	7,645
Charter - Traditional Public Performance Gap	0.14	0.95	-7.81	6.88	7,705
% of Public Schools Alternative	2.15	5.44	0.00	50.00	7,705
% of Public Schools Special Ed	0.38	1.98	0.00	33.33	7,705
% of Public Schools At Risk	13.43	17.20	0.00	100.00	7,705
Private School Dummy	0.66	0.47	0.00	1.00	7,705
Ratio of Private to Traditional Public Schools	-0.35	0.37	-0.94	2.00	7,705
Private/Public Geographic Concentration	0.58	11.60	-0.51	517.28	7,677

Table A.14: Single-School District Years Descriptives for Independent Variables (With Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	1.08	0.38	0.00	4.00	3,594
Max Between School Distance	0.17	1.75	0.00	48.72	3,594
% Black Students	1.22	2.74	0.00	70.70	3,594
% Latino Students	28.55	28.20	0.00	100.00	3,594
% Teachers with MA	23.37	19.91	0.00	100.00	3,590
Public Student Teacher Ratio	17.79	5.17	0.00	39.00	3,590
Private Student Teacher Ratio	0.83	3.85	0.00	47.00	3,577
District CST Performance	-0.51	1.50	-3.58	1.83	3,594
Years Since Law	9.90	5.47	1.00	19.00	3,594
Years Since Law Sq	127.82	111.96	1.00	361.00	3,594
# State/Co. Authorized Charters in Co.	0.56	1.06	0.00	13.00	3,594
State/Co. Authorized Charters in Co. Dummy	0.33	0.47	0.00	1.00	3,594
# Dist. Authorized Charters in Other Dist. in Co.	5.74	11.41	0.00	245.00	3,594
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.72	0.45	0.00	1.00	3,594
% of Non-Charter Schools in PI	4.09	19.81	0.00	100.00	3,594
Administrators Per School	0.72	0.75	0.00	6.05	3,590
Total Revenue Per Student	10.39	7.00	0.89	116.27	3,584
Ratio of Local to State Revenue	1.26	1.91	0.03	18.51	3,584
Charter - Traditional Public Performance Gap	0.00	0.00	0.00	0.00	3,594
% of Public Schools Alternative	0.00	0.00	0.00	0.00	3,594
% of Public Schools Special Ed	0.00	0.00	0.00	0.00	3,594
% of Public Schools At Risk	0.00	0.00	0.00	0.00	3,594
Private School Dummy	0.07	0.26	0.00	1.00	3,577
Ratio of Private to Traditional Public Schools	0.02	0.18	0.00	2.00	3,577
Private/Public Geographic Concentration	0.00	0.05	-0.50	0.73	3,577

Table A.15: Single-School District Years 1999-2008 Descriptives for Independent Variables (With Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	1.07	0.39	0.00	4.00	1,891
Max Between School Distance	0.28	2.37	0.00	48.72	1,891
% Black Students	1.33	3.20	0.00	70.70	1,891
% Latino Students	28.78	28.37	0.00	100.00	1,891
% Teachers with MA	24.32	20.39	0.00	100.00	1,891
Public Student Teacher Ratio	16.81	4.94	0.00	39.00	1,891
Private Student Teacher Ratio	0.93	4.25	0.00	47.00	1,891
District CST Performance	-0.71	1.72	-3.58	1.78	1,891
Years Since Law	11.48	2.87	7.00	16.00	1,891
Years Since Law Sq	140.02	66.25	49.00	256.00	1,891
# State/Co. Authorized Charters in Co.	0.60	0.87	0.00	7.00	1,891
State/Co. Authorized Charters in Co. Dummy	0.41	0.49	0.00	1.00	1,891
# Dist. Authorized Charters in Other Dist. in Co.	6.82	10.44	0.00	185.00	1,891
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.84	0.36	0.00	1.00	1,891
% of Non-Charter Schools in PI	3.97	19.52	0.00	100.00	1,891
Administrators Per School	0.75	0.73	0.00	6.00	1,891
Total Revenue Per Student	11.33	6.74	3.69	116.27	1,888
Ratio of Local to State Revenue	1.23	1.84	0.03	18.51	1,888
Charter - Traditional Public Performance Gap	0.00	0.00	0.00	0.00	1,891
% of Public Schools Alternative	0.00	0.00	0.00	0.00	1,891
% of Public Schools Special Ed	0.00	0.00	0.00	0.00	1,891
% of Public Schools At Risk	0.00	0.00	0.00	0.00	1,891
Private School Dummy	0.08	0.26	0.00	1.00	1,891
Ratio of Private to Traditional Public Schools	0.02	0.18	0.00	2.00	1,891
Private/Public Geographic Concentration	0.00	0.04	-0.45	0.73	1,891

Table A.16: Single-School District Years for Hazard Models - Descriptives for Independent Variables (With Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	1.09	0.36	1.00	4.00	3,519
Max Between School Distance	0.16	1.76	0.00	48.72	3,519
% Black Students	1.17	2.17	0.00	28.57	3,519
% Latino Students	27.77	28.01	0.00	100.00	3,519
% Teachers with MA	23.09	19.69	0.00	100.00	3,516
Public Student Teacher Ratio	18.36	4.70	0.00	39.00	3,516
Private Student Teacher Ratio	0.72	3.65	0.00	47.00	3,502
District CST Performance	-0.48	1.46	-3.58	1.83	3,519
Years Since Law	8.85	5.47	0.00	18.00	3,519
Years Since Law Sq	108.25	101.47	0.00	324.00	3,519
# State/Co. Authorized Charters in Co.	0.47	0.90	0.00	9.00	3,519
State/Co. Authorized Charters in Co. Dummy	0.30	0.46	0.00	1.00	3,519
# Dist. Authorized Charters in Other Dist. in Co.	5.00	10.34	0.00	229.00	3,519
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.67	0.47	0.00	1.00	3,519
% of Non-Charter Schools in PI	3.15	17.48	0.00	100.00	3,519
Administrators Per School	0.71	0.74	0.00	6.05	3,516
Total Revenue Per Student	9.88	7.01	0.81	133.16	3,512
Ratio of Local to State Revenue	1.24	1.90	0.03	18.51	3,512
Charter - Traditional Public Performance Gap	0.00	0.00	0.00	0.00	3,519
% of Public Schools Alternative	0.00	0.00	0.00	0.00	3,519
% of Public Schools Special Ed	0.00	0.00	0.00	0.00	3,519
% of Public Schools At Risk	0.00	0.00	0.00	0.00	3,519
Private School Dummy	0.07	0.25	0.00	1.00	3,502
Ratio of Private to Traditional Public Schools	0.02	0.17	0.00	2.00	3,502
Private/Public Geographic Concentration	0.00	0.05	-0.50	0.73	3,502

Table A.17: Single-School District Years for F.E. Models- Descriptives for Independent Variables (With Fills)

	Mean	Std. Dev.	Min	Max	N
Total Non-Charter Schools	1.01	0.97	0.00	3.00	133
Max Between School Distance	0.24	0.50	0.00	1.31	133
% Black Students	2.91	8.72	0.00	70.70	133
% Latino Students	34.80	19.79	1.82	86.14	133
% Teachers with MA	24.37	14.32	0.00	70.00	133
Public Student Teacher Ratio	10.36	10.24	0.00	27.88	133
Private Student Teacher Ratio	5.01	7.99	0.00	21.00	133
District CST Performance	0.19	0.60	-3.50	1.51	133
Years Since Law	9.82	5.36	1.00	19.00	133
Years Since Law Sq	124.95	109.22	1.00	361.00	133
# State/Co. Authorized Charters in Co.	0.20	0.59	0.00	3.00	133
State/Co. Authorized Charters in Co. Dummy	0.14	0.34	0.00	1.00	133
# Dist. Authorized Charters in Other Dist. in Co.	8.56	8.20	0.00	38.00	133
Dist. Authorized Charters in Other Dist. in Co. Dummy	0.92	0.28	0.00	1.00	133
% of Non-Charter Schools in PI	0.00	0.00	0.00	0.00	133
Administrators Per School	0.78	0.55	0.00	3.00	133
Total Revenue Per Student	8.15	3.65	3.79	24.29	130
Ratio of Local to State Revenue	1.05	1.52	0.12	5.98	130
Charter - Traditional Public Performance Gap	0.00	0.00	0.00	0.00	133
% of Public Schools Alternative	0.00	0.00	0.00	0.00	133
% of Public Schools Special Ed	0.00	0.00	0.00	0.00	133
% of Public Schools At Risk	0.00	0.00	0.00	0.00	133
Private School Dummy	0.29	0.45	0.00	1.00	133
Ratio of Private to Traditional Public Schools	0.20	0.42	0.00	2.00	133
Private/Public Geographic Concentration	0.01	0.18	-0.30	0.73	133

Appendix B

This appendix presents additional tables for the analysis in chapter 5. I include Table B.1 which shows the division of schools into levels based upon the minimum and maximum grades. Table B.2 shows the number of student semester dropped for various reasons. Finally, Table B.3 shows the observation counts for variables noted in Table 5.1.

Table B.1: Grade Levels Used in Chapter 5 Analysis

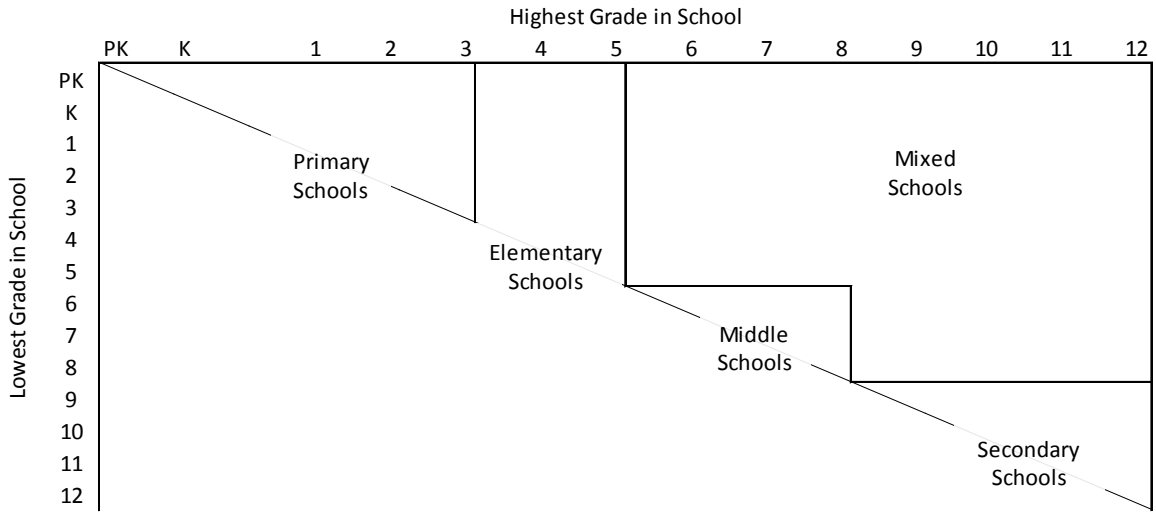

Table B.2: Number of Student Semesters Dropped

	N	% of Original N Dropped	% of Original N Remaining
All	9,404,405	0.0%	100%
Grade Mismatch	13,470	0.1%	99.9%
Observed Once	81,815	0.9%	99.0%
Right Censored	1,481,500	15.8%	83.2%
Missing Covariates			
Primary	29,497	0.3%	
Elementary	539,842	5.7%	
Middle	81,297	0.9%	
Secondary	416,780	4.4%	
Mixed	123,409	1.3%	
Total	1,190,825	12.7%	70.6%

Table B.3: N's for Marked Variables in Table 5.1

	Elementary	Secondary
	N	N
Female Student	3,121,628	1,967,913
English at Home	3,535,807	2,010,525
Parent's Ed - Less Than High School	3,121,891	1,968,347
Parent's Ed - High School	3,121,891	1,968,347
Parent's Ed - Some College	3,121,891	1,968,347
Parent's Ed - Bachelor's	3,121,891	1,968,347
Parent's Ed - More than Bachelor's	3,121,891	1,968,347