

**Into Another Kind of Country:
The College
Matriculation of
Youth from Rural Areas**

by

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Dedication

This work is dedicated in memory of my mother.

Acknowledgements

One morning, over a cup of coffee, my mother asked me about the progress of my graduate school applications. At the time, I was applying for a degree in clinical psychology. I told her that I was submitting all of the applications that afternoon. She looked at me, in this way she had, and said that she didn't think I should become a clinical psychologist. Instead, she insisted, I should get a graduate degree in education. She then meticulously laid out her list of arguments against clinical psychology and for education. My mother was a lawyer, a good one, and I had trouble finding counters to her arguments. Over the course of many months, I began to agree with her, which ultimately resulted in my time at the University of Michigan. To be fair, there have been moments when I was happy about this influence, and times when, well let's just say I didn't feel so happy. Now though, I am grateful, once again, for this, one of the many gifts my mother gave to me.

My father, sister, and grandmother have all been enormous supports to me since I have been here. They have listened to me talk about this process, even though they didn't really understand it. They made me laugh when I was frustrated, and celebrated with me when I was glad. They have always been there for me. That support has allowed me to feel safe in any endeavor I take on, because I know that no matter what, I will always have them. For that, and so many other things, I thank them.

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ABSTRACT

Into Another Kind of Country: The College Matriculation of Youth from Rural Areas

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Co-Chairs: Carla O'Connor and Valerie E. Lee

Youth from rural areas are consistently under-represented in 4-year college institutions. This is particularly true for those whose parents did not go to college. Historically, a high school degree was sufficient for employment in rural communities. However, as blue-collar jobs continue to disappear, lesser educated residents are increasingly unemployed. Going to college provides youth from rural areas the opportunity to secure an occupation.

Unfortunately, many lack access to the types of social capital that are beneficial in the matriculation process, including access to: kin who have gone to college, advanced coursework, and non-kin who can advise students about college matriculation. Moreover, some of these youth come from rural communities that view the procurement of higher education as a threat to the stability of the community. In the absence of a 4-year college existing in the rural area, matriculation necessarily means that a student will

have to move away from his community. Thus, in the interest of maintaining their populations, some communities are reluctant to encourage students to matriculate.

In spite of these obstacles, some students from rural areas do go to college. The purpose of this study was to understand how these youth, particularly those with less-educated parents, were able to matriculate. Thus, I embarked on a mixed-methods analysis of the matriculation patterns of youth and schools from rural areas. I focused on a sub-sample of these students, those who attended elite colleges; because I believed their experiences were exemplary.

I arrived at several key findings, all in consideration of first-generation college-goers from rural areas. Positive relationships with teachers and positive school social organizations improved the likelihood students would matriculate. Having individuals who provided information about college was important for first-generation rural who attended an elite college. Further, extracurricular participation increased the chance of matriculation when it exposed students to 4-year college campuses and/or provided them with a chance to be successful outside of their communities. The interpretation of my analyses led me to conclude having social network members, who shared information about, or modeled behaviors consistent with college-matriculation, helped to overcome barriers in rural students' paths to higher education.

Chapter 1

Introduction

Jacob grew up in a small working-class community in northern Michigan, population 1,857. His parents, engrained with the rural work ethic, drive more than 30 miles each day to work on a factory line. They were high school sweethearts, settled in the town where they both grew up, and worked in the factory where their parents worked. According to Jacob, most of the adults in his community, or at least the ones he knows, work in the same factory as his parents. Years of working on the line has taken a physical toll on Jacob's parents. His father has developed arthritis as a result of a number of work-related injuries he has suffered throughout the years. Not wanting the same physical problems for his son, Jacob's father repeatedly advises him to "work smarter, not harder". Jacob understood this to mean that he was to get a job where he used his head rather than his brawn.

For most of his life, Jacob's parents had been able to make ends meet. Although they were not able to accumulate much in the way of savings, they had not worried about putting food on the table for Jacob and his brother. That changed when his brother was diagnosed with cancer. His mother had to quit her job to care for her son. Moving to a single income has been difficult for Jacob's family, as it would be for many. Jacob considered going to work after graduation to help his family meet their financial needs, but again, his father told him to "work smarter, not harder".

Obediently, Jacob set his sights on college. Having never been to college themselves, Jacob's parents were not able to offer him much in the way of academic assistance. His school lacked the financial resources and personnel necessary to provide more than one or two advanced courses, honors English and pre-calculus. His guidance counselor, one of his parents' former teachers, was responsible for advising all of the students in Jacob's K-12 school. When Jacob went to her for advice, she happily gave him all of the college brochures she had. He spent an afternoon sitting in her office looking through them, but she eventually advised him to do a more thorough search online. Through the internet he found examples of college essays and applications as well as information about the steps involved with applying to college.

Jacob's story is not uncommon in rural America. It is well established, that students from rural areas are underrepresented in 4-year college institutions (Adelman, 2002; Chenoweth & Galliher, 2004; Cowell & Zemsky, 2006). Only about 34% of rural 18 to 24-year olds matriculate to college, but the percentage is slowly growing (Herzog & Pittman, 1995; USCB, 2005). Some of this increase is likely caused by first-generation students from rural areas, like Jacob, who, for the first time in their family's histories, are enrolling in college. These students face unique matriculation challenges that could easily thwart their ability to enroll in any college, but Jacob managed to matriculate to an elite college, the University of Michigan. I want to understand how he did it.

To that end, I seek to contribute to the current literature on this topic through a mixed methods analysis of first-generation college students from rural areas. I do this by examining both national and local populations of students from rural areas. I use a national student sample to create a model that predicts college-going among rural youth.

Next, I use a nationally representative sample of rural high schools to determine whether there are school practices that support matriculation. Then I conduct an interview analysis of first-generation college students from rural Michigan, who are enrolled in the University of Michigan, to determine what additional understandings their life stories allow me to glean about the matriculation process. By synthesizing these analyses I am able to better to understand the social and educational processes that account for why some students make it to college despite the host of challenges that work against the probability of them doing so.

Definition of Rural

Before I can do any of this though, I must first define the term ‘rural’, and provide a brief perspective on what it means to be ‘rural’ in the United States. Researchers studying rural America typically define these areas in one of two ways. The first and most widely used definition was created by the United States Census Bureau. By this designation, rural areas are those that have a population of 2,500 people or less, or those that are outside of incorporated areas. The second definition, non-metropolitan, is broader, encompassing many more communities. Non-metropolitan areas are defined as those that do not fall into the metropolitan category of having a population of 50,000 people or more, and/or having a neighboring area with as many people. The terms non-metropolitan and rural are often used interchangeably, but in actuality these terms measure locations that are quite different from each other.

I prefer to use the U.S. Census Bureau definition of rural because it allows me to more accurately distinguish between rural and suburban areas (those that neighbor large metropolitan areas) (Weber, Jensen, Miller, Mosley, & Fisher, 2005). This distinction is

important because there are substantial differences between rural and suburban areas, particularly when it comes to socio-economic status. In 2003, The U.S. Department of Agriculture found that 14.2% of rural residents, or 7.5 million people, live in poverty (USDA, 2004). Poverty rates in the United States are highest and most persistent in rural areas and lowest in suburban areas (Jeolliffe, 2002; Slovak & Carlson, 2009; Weber et al., 2005). As a result of these economic differences, I feel it would be inappropriate for me to use the non-metropolitan designation, because I would run the risk of including both rural and suburban areas within my analysis.

Even the more restricted definition of rural is not without issue. Although individual rural areas tend to be somewhat demographically homogenous, rural America is racially, ethnically, and economically diverse (Duncan, 1999, 1992; Reul, 1974). There is tension around whether, and to what degree, these different groups of rural Americans' share experiences. Do, for example, California migrant workers, Appalachian coal miners, and Southern cotton farmers have things in common that make it reasonable to group them together? As of yet, researchers have not addressed this issue. I have chosen to assess the matriculation of all rural students because there are very few large scale studies concerning the college-going of these youth. Thus, the Census definition of rural sufficiently meets my needs in this dissertation

Why the Nation Should Care About Rural Schools

Although rural communities are by definition low in population density they still constitute a sizable portion of the United States population. Nearly 10 million students, 1 in every 4 nationwide, attended schools in rural communities in 2006 (Rosigno &

Crowley, 2006). This is a substantial proportion of our nation's youth, a proportion that deserves and indeed needs our attention.

Researchers interested in rural education have long been plagued by the sheer number of, and differences between, rural schools. In total, there are 26,390 schools operating in rural communities (Blackwell & McLaughlin, 1998). Physically, rural schools range from being one room school houses, which serve a few local students, to large consolidated high schools, serving over a thousand students from neighboring communities and school districts. Rural schools in the South and West are responsible for the education of increasing populations of second language learners, many with no resources to do this effectively (Duncan, 2001). Communities whose economies are based on factories, mills, and mines are faced with increasing, and often crippling, unemployment and poverty rates (Beaulieu & Gibbs, 2005; Harris et al., 2008; McGranahan & Ghelfi, 1998). As a result of differences like these, policy makers and program developers have had a difficult time meeting the needs of rural schools. However, many rural schools and their students are in need of assistance.

Students from rural areas score lower on standardized tests than their suburban counterparts (Beaulieu & Gibbs, 2005). They are also less likely to matriculate to college than similar metropolitan students (Bureau, 2006; McGranahan & Ghelfi, 1998). The US Department of Agriculture (2010), reports that the matriculation gap between these groups is growing. In 1980, 10.6% of rural residents and 17.7% of metropolitan residents, 25 years old and older, had graduated from college. By 2000, 15.1% of rural residents and 26.6% of metropolitan residents, 25 years old and older, had completed college. Nonetheless, research around rural education is sparse, and rural schools are

rarely mentioned in national political conversations (Beeson & Strange, 2003; Kannapel & DeYoung, 1999). The under-acknowledgement of rural schools is caused in part by the geographic dispersion of rural areas. This dispersion prevents rural residents from having political power causing them to go largely unnoticed (Beeson & Strange, 2003).

Why I Care About Rural Schools

I doubt that I would have given much thought about rural schools myself had I not been born and raised in a primarily rural state, West Virginia. My experiences in school, as well as my understanding of the experiences of my friends and family led to my interest in the education of rural youth. Many of my friends and family did not go to college. Some did not graduate high school. My guidance counselor encouraged me to go to college, but he gave me a list of schools that he thought I should apply to, all were within a two hour drive from my home. When I told him I wanted to go to a school in the Northeast, he told me that students from my high school did not attend colleges that far away. He told me that I would miss my family too much, that I would hate it there. When I told my parents about what I had been told, they laughed. They had both gone to colleges in the Northeast. Ultimately I went to Harvard. Contrary to his opinion, I loved it there.

My family had pushed and encouraged me in ways that made my matriculation to college make sense. They checked my homework, took me to art museums, enrolled me in music lessons, and took me on my first college tour when I was a freshman in high school. My parents had taken deliberate steps to ensure that I would go to college, not going, never even occurred to me. I cannot say the same thing for my cousins and friends. Some of them went to college, some did not, and some dropped out soon after

matriculating. I suppose then, my interest in rural education was born out of trying to understand our experiences. To that end, I began investigating what we know about the college matriculation patterns of rural youth.

Problems Driving My Work

Researchers interested in the college matriculation of students from rural areas have identified a variety of factors associated with the probability students will go to college. These factors tend to be represented in one of the following broad categories: socio-demographic characteristics, primarily socio-economic status; student aspirations and expectations; characteristics associated with schools; characteristics associated with family networks; and characteristics of community and peer networks. Through their work, researchers have been able to determine a few key findings.

Family socio-economic status is positively correlated with children's college matriculation (Cabera & LaNasa, 2000; Entwisle, Alexander, & Olson, 2005; Hearn, 1984; Teachman, 1987; Toutkoushian & Curtis, 2005). This correlation is particularly strong when parents attended college themselves (Smith, Beaulieu, & Seraphine, 1995). When parents have not attended college, their children are less likely to matriculate (Chen, 2005; Hill & Jepsen, 2007). High student and parent aspirations and expectations appear to be able to mitigate some of the influence of socio-economic status and parental college attendance (Choy, Horn, Nunez, & Chen, 2000; McCracken & Barcinas, 1991; Yan, 2002), as are connections with community members and peers who have attended college (Blackwell & McLaughlin, 1998; Budge, 2006; Choy et al., 2000; Singh & Dika, 2003; Yan, 2002).

The Role of Social Networks in Matriculation Decisions

Using these categories, researchers have been fairly effective in predicting the matriculation of individuals who have a variety of resources at their disposal to aid them in the matriculation process. However, these studies have been less successful in predicting the matriculation of students who lack such resources (namely those whose parents have not gone to college). In this dissertation, I attempt to come to an understanding of the resources this later group of students uses to get themselves to college. In this endeavor, I am particularly interested in the role that students various social networks play in the matriculation process. Thus, I investigate whether students whose parents have not gone to college are more or less likely to go themselves based on the characteristics of, or their relationships with, their social networks.

Measuring Multiple Networks

The experiences students have with their schools, families, friends, and communities can work in complementary or counter-productive ways that affect their college matriculation (Cooper, 2002; Oakes, 2003; McDonough, 1997; Phelan, Davidson, & Yu, 1993). Yet few studies have attempted to assess the nature of these scaffolded social networks on the college-going behaviors of rural youth. It may well be that students' post-secondary choices are differentially linked to their relationships with social networks, based on some grouping characteristic. For example, students may be more influenced by their familial networks if they come from families with long-standing patterns of college-going. On the other hand, students whose parents have not gone to college may be influenced more by their peer networks. By gaining a better understanding of how these networks function, collectively, researchers could gain a

clearer picture of students' pathways to college. This could in turn, inform attempts to create programs to help improve the college matriculation of youth from rural areas.

Process of Matriculation

The ability to make recommendations to improve the education of youth is often at the forefront of education research. In order to make the most effective recommendations, researchers need to know not only what is importantly related to their educational outcome of interest, but also why it is related. For example, there is evidence that a student who has a positive relationship with a community member who attended college, is associated with the student going to college. However, we do not know the type of relationship students need to have with these community members in order to influence college matriculation or why a relationship with a community member would be influential. As a result the ability to inform policies that benefit the matriculation of youth from rural areas is limited. Studies aimed at helping to understand the process by which home, school, and community characteristics come to be important for the matriculation of youth would help to inform these policy decisions.

Four Year Higher Education Institutions

The rural college matriculation research rarely separates students attending 2- and 4-year colleges (Rojewski, 1999; Smith et al., 1995; Yan, 2002). This distinction can inform matriculation decisions, because enrollment in a 4-year college marks a distinct break between the student and the rural community, when no such institution exists within the community. Rural areas are rarely home to 4-year college institutions. The distance between rural communities and the nearest 4-year institution is frequently large

enough that students are unable to commute between their homes and colleges, which necessarily means that they have to move away from their communities in order to attend school (Hektner, 1995). For rural and first-generation students, who frequently feel a strong attachment to place and family, this move can be a substantial barrier to their decision to attend college (Donaldson, 1986; Kannapel & DeYoung, 1999; Nunez & Cuccaro-Alamin, 1998). For this reason, researchers have found that many rural and first-generation students prefer to attend 2-year community colleges, which because of their abundance, can be found near their homes more frequently than 4-year colleges (Johnson et al., 2005).

Attending a 4-year institution, though, tends to more clearly mark a “transition from the rural agricultural job market to job markets based more strongly on educational credentials” (McGrath, Swisher, Elder, & Conger, 2001). This distinction is important, as the economic prosperity of students as rural America’s economy has shifted from dependence on agriculture related occupations to non-agricultural related occupations (Whitener, 2005). Many of these non-agricultural occupations require a Bachelor’s degree. For this reason, the current study is only interested in students from rural areas who attend 4-year institutions.

Elite Institutions

When rural researchers have focused on 4-year colleges, they pool students across institutions without any explanation about the types of colleges the students attend (Chenoweth & Galliher, 2004; McGrath et al., 2001). Four year institutions can vary dramatically not only in whom they admit, whom they attract, and the types of degrees they offer. Students who attend elite universities are significantly more likely to earn a

Bachelor's degree than students attending a 4-year public institution that does not have strict admissions requirements (Education, 1991; Snyder, 1987; Velez, 1985). Earning a Bachelor's degree leads to greater earning potential and continued educational opportunities.

There is some evidence that when first-generation college students enroll in 4-year institutions, they enroll in either elite or more typical state schools (McDonough, 1997). This trend may reflect the high cost of college applications and tuition. First-generation students frequently have limited financial resources. Applying to college is an expensive proposition, as each school has application fees associated with it. Students who have limited financial resources, like many first-generation college-goers, may not be able to afford to apply to a number of colleges. They also may not be able to afford the expense of private institutions. As a result, they tend to enroll in a 4-year state school that is closer to home and more affordable. The exception to this is enrollment in an elite institution (McDonough, 1997). First-generation students seem to be willing to tolerate the cost of tuition at elite institutions because they believe that these schools will provide them with gateways to greater economic prosperity (Thomas, 2003).

I am not particularly concerned with the reasons students have for electing to go to elite institutions. Rather, I believe that the study of students who are exceptions to the rule, as are first-generation college students from rural areas, provides researchers with important understandings about how these individuals have become successful. For this reason, I focus part of my analysis on students enrolled in elite public and private 4-year institutions. It is my hope that this focus will shed light on those resources that are most effective in improving matriculation rates.

Outline

I have organized this dissertation into seven chapters. In Chapter 2, I provide a review of the current research surrounding the college matriculation of rural youth and the matriculation of first-generation college students. I also provide a conceptual model of the dissertation, and establish my research questions. I discuss the theory of mixed methodology, and describe my own research methodology in Chapter 3. In Chapters 4 thru 6, I present the results of my analyses for the national, school, and local samples, respectively. Then, in Chapter 7, I summarize the major findings of my research, and provide implications for practices that could help to increase the college matriculation rates of first-generation college-goers who come from rural areas.

Chapter 2

Literature Review

Introduction

In this chapter, I review the extant research as it relates to the college matriculation of rural and first-generation college-goers. Researchers interested in youth from rural areas have identified characteristics, resources, and desires that seem to be important predictors of college matriculation. I argue that the use of these categories has succeeded in predicting the matriculation of privileged youth, and the non-matriculation of non-privileged youth, but it has been less successful in predicting idiosyncratic matriculation behaviors, such as the matriculation of first-generation college-goers from rural America. I believe that by framing this research through a social capital lens, researchers may be better able to explain seemingly divergent behaviors.

I divide the chapter into two distinct sections. In the first, I review sociological theory, namely social capital and ruralness, and ultimately situate my own work in light of these two concepts. In the second section, I review the extant rural college matriculation literature to shed light on the contributions researchers have made to this field. I divide this final section into three sub-sections: characteristics, resources, and desires. Within each of these sub-sections I accomplish two goals-

- I describe the extant research and the knowledge gained from it.

- I explore the ways that social capital theory can help to explain the body of work and what this theory can add to the college matriculation findings.

Finally, I articulate the specific research questions guiding my work and present a conceptual model outlining the theoretical background of this study.

Theoretical Framework

In this section I briefly outline the development and guiding principles of social capital theory. Social capital is a popular sociological theory that has been used to explain phenomena in a wide variety of fields, including religion, economics, gender inequity, and importantly in this context, education (Hsung, Lin, & Breiger, 2009; Portes, 1998; Svendsen & Svendsen, 2009; Wall, Ferrazzi, & Schryer, 1998). As such, the definition and application of this theory can vary substantially. I review only those definitions and applications that relate to educational outcomes and the relationships between individuals¹ and social networks. To that end, in the following section I outline two seminal perspectives of social capital theory, their critiques, and their utility in understanding matriculation patterns (Bourdieu, 1986; Coleman, 1988).

Seminal Perspective- Bourdieu

Pierre Bourdieu first brought social capital into the modern consciousness (Portes, 1998; Svedson & Svedson, 2009). He defined social capital as “the aggregate of the actual or potential resources which are linked to possession of a durable network of more

¹ Putnam has made a substantial contribution to the theory of social capital, and hence I would be remiss not to mention his work. Putnam focuses on the social capital of a community and the ways that communities do or do not act in unison for some collective good/civic responsibility (Putnam, 1993; 1996). My work centers on individuals and the ways that individuals relate to others. As such Putnam’s work is not relevant in this context, and I will not review it here.

or less institutionalized relationships of mutual acquaintance or recognition”(Bourdieu, 1985, pg. 248). Using this definition, social capital is a resource created through social relationships. Further, because it is defined as a resource, Bourdieu viewed social capital as something positive or desirable.

Bourdieu’s inquiry into social capital was entwined with his theory of economic capital, defined loosely as those financial resources that allow an individual to achieve some desired goal (1986). As such, he tended to place economic gain at the heart of his discussion of any form of capital, meaning that for him, social relationships only become capital when they lead to the procurement of resources that could be related to financial gain/security (Portes, 1998; Wall, Ferrazzi, & Schryer, 1998). For example, a personal relationship could lead to an internship that would be beneficial for both the employer and the employee. The internship would be beneficial for the employer because she received free labor. Additionally, it could be beneficial for the employee because it would provide him with experience on his college application that could improve his chances of being accepted and later procure a higher-paying job.

Bourdieu’s iteration helped to explain how individuals maintained their social position as well as how some individuals were able to improve their social position (Baron, Field, & Schuller, 2000; Wall, Ferrazzi, & Schryer, 1998). Rarely however, did Bourdieu discuss ways in which individuals could move from one socio-economic group to another; instead he tended to focus on the reproduction of socio-economic status (Calhoun, LiPuma, & Postone, 1993; Hsung & Breiger, 2009; Patulny, 2009; Wall, Ferrazzi, & Schryer, 1998). His focus on the upper class and on economic gain limited his ability to consider the ways that social capital might be created in other communities

and in ways that were not necessarily associated with finances (Calhoun, LiPuma, & Postone, 1993; Schuller, Baron, & Field, 2000). Later iterations of the theory expanded the purposes of social capital. This led to a greater inclusion of types of social capital that exist in communities that are not necessarily upper class.

Seminal Perspective- Coleman

The second social capital perspective of interest in this dissertation was identified by Coleman (1988). He defined social capital as “a variety of entities with two elements in common: They all consist of some aspect of social structures, and they facilitate certain action of actors – whether persons or corporate actors – within the structure” (Coleman, 1988; p.S98). In defining social capital as facilitating action, Coleman’s iteration called for social capital to be functional. That is, unlike Bourdieu’s definition in which social capital was the ultimate resource, in Coleman’s definition social capital was a resource that caused individuals to perform some action. As in Bourdieu’s iteration of social capital, though, Coleman also believed that social capital was always beneficial for the recipient because it allowed her to achieve a desired goal (Coleman, 1987; Coleman, 1988; Portes, 1998). Thus, given its functionality and beneficial nature, social capital to Coleman was the ability of social relationships to help individuals achieve their desired goals.

Coleman’s forms of social capital. Coleman outlined various forms that social capital could take. Two are of interest here: norms and sanctions, and information channeling (1988). With regard to the sanctioning of norms and behaviors, Coleman defined norms as acceptable behaviors agreed upon by social network members, and sanctions as penalties given to individuals for not adhering to those behaviors. An

effective system of norms and sanctions helps to ensure that network members behave in a way that is best for the network (Coleman, 1988; Zhou & Bankston, 1996). Further, Coleman argued that this form of social capital operates more smoothly in closed social networks, allowing for a greater transfer of norms among and between like people, because individuals in closed networks tend to hold similar values and beliefs. He defines closed social networks as those where kin and non-kin members are: known to each other, see each other frequently, hold expectations for each other, and share similar values (Coleman, 1988). Open social networks, on the other hand, are those where network members do not know each other and do not need to rely upon one another.

To understand this form of social capital in practice, I provide the following example of norms and sanctions in rural communities. Network closure in rural areas is often strong because residents are often related in a variety of ways (Coleman, 1988; Flora, 1998; Richling, 1985; Wall, Ferrazzi, & Schryer, 1998). They can for example, be “simultaneously kin, neighbors, and co-workers” (Portes, 1998, p.16). This network closure, paired with a system of norms and sanctions, can go a long way to ensuring the appropriate behavior of residents. I use the example of Katy, a teenaged girl, who attends a private high school with a college matriculation rate of 100%. Katy’s parents have both gone to graduate school and expect their daughter to do the same. Many of their friends have children who go to the same school Katy attends. Katy, like her parents, peers, and teachers, expects that she will go to college. She typically earns straight A’s on her assignments, but one day she earns a C on a major test. That evening her teacher calls her parents to express concern over her grade. After a lengthy conversation, Katy is sent to her room to start on the extra credit assignment her parents and teacher agreed upon to

make up for her poor grade. Although this example is of a slight infraction of acceptable norms, it is a good example of how swiftly closed communities can act to ensure that network members adhere to norms.

The second form of social capital identified by Coleman was “information channeling” where social relationships lead to information sharing that facilitated action by an individual (Coleman, 1988). Again, Coleman talked about the importance of closed social networks in promoting information sharing. In the case of college matriculation, for example, a group of students interested in the same colleges could decide to each investigate the admissions requirements for a single school. Having done so, they could then come together to share that information so that they do not need to individually research all of the schools’ requirements. In this example, it is important for the students to be members of the same closed social network so that they can trust the other students’ information. However, some researchers argue that the generation of social capital through information sharing is more effective between members of different social networks (Burt, 1997; Granovetter, 1974). I explore this critique next.

Critique of Coleman’s Social Capital. Burt (1997) complicated the notion that social capital in the form of information sharing arises in the context of closely knit communities. He defines social capital in terms of information and advantages. He posits that social capital arises when there are ‘structural holes’ in social relationships, such that individuals come in contact with people who provide them with information that their dominant social structure is unable to provide. Structural holes are frequently considered by researchers interested in closing education gaps between groups of students because these holes provide a plausible pathway for information sharing

between more- and less-privileged individuals (Barron, Field, & Schuller, 2000). These structural holes provide first-generation students, for example, a great amount of social capital, because they provide an opportunity for students to interact with college-educated individuals who can provide them with information about the matriculation process.

This is similar to Granovetter's (1974) term 'the strength of weak ties', meaning that in some instances individuals who are not within one's social network become important influences in one's life choices. Some researchers have theorized that these weak ties may be particularly important to youth from rural areas who are interested in achieving a goal outside of those defined by the norms of the community (Hofferth & Iceland, 1998; Israel, Beaulieu, & Hartless, 2001). Researchers postulate that rural youth, who typically are members of closed social structures, are unlikely to receive information that is contrary to the norms of their communities. Therefore, a relationship with someone who does not hold those norms may provide rural youth with their only access to divergent views.

The value of open social structures is not the only critique of Coleman's work. An additional limitation is particularly important in light of my dissertation work. Coleman only discussed the positive consequences of social capital, but there can also be negative consequences to this phenomenon (Boissevain, 1974; Portes, 1998; Graeff, 2009). Coleman acknowledged that "a given form of social capital that is valuable in facilitating certain actions may be useless or even harmful for others", however, he did not thoroughly investigate the ramifications of his statement. The negative consequences are clearest when it comes to Coleman's (1988) distinction of norms and sanctions as forms of social capital. This arises because norms and sanctions require individuals to

forego some of their own desires for the best interest of the community. In so doing, individuals lose some of their personal freedoms. A common example of this is the criminal justice system, where citizens adhere to a set of laws or suffer the penalties associated with them. By adhering to the laws, individuals forego any personal desires they may have to break them. A less common example of the negative consequences of norms and sanctions exists in rural areas (Portes, 1996; Graeff, 2009).

Closed social networks can be powerful sources of positive social capital when an individual agrees with the norms valued by the community. When an individual's desires differ from the norms valued by the community, but the individual still adheres to the community norms, his social capital functions negatively in his life because it restricts his individual aspirations. A practical example of this would be a high school student who wanted to go away to college but did not do so. Instead, he chose to adhere to the norms of his community, which valued remaining in the community. The student's decision to stay constitutes a negative result of social capital because the student's ambitions were constrained by his adherence to community norms (Portes, 1998).

Graeff states "the dilemma [rural] communities face is one of the most fundamental problems that social sciences have ever tackled" (2009, pg. 158). This is so because *what is good for the rural community may not be good for the individual*. To adhere to the collective good of the community, an individual may remain there and attempt to contribute to the community's social structure and tax base. However, to benefit the individual may mean that he or she leave the community, go to college, and obtain a desired occupation. The dilemma lies in determining which of these two entities' needs, the community or the individual, ought to be privileged and who should

make that decision. Although community needs may be preeminent when considering crime, the choice is less clear when considering the relationship between an individual's educational attainment and the community's social norms. I consider this later dilemma in the following section.

Ruralness

Researchers often use social capital theory to understand social betterment, but they use it less frequently to understand social constraint (Portes, 1998; Portes, 1996; Graeff, 2009). Many rural researchers have found that there can be unique consequences of being embedded in rich social networks in rural areas. Namely there is a body of work that supports the notion that having close social ties within a rural community can lead rural residents to want to remain in the community and not further their education. Even though these arguments are typically not framed using social capital theory, they help illuminate how social capital functions. In the following section I consider this body of work and how it relates to social capital.

Residents of rural areas often feel a strong sense of attachment to place, referred to as 'ruralness', that stems in part from being deeply embedded in family and community social networks (Bauch, 2001; Budge, 2006; Haas & Nachtigal, 1998). Students who feel this sense of attachment are less likely to attend and persist in college than are those who do not, regardless of their socio-economic background (Donaldson, 1986; Johnson, Elder, & Stern, 2005). They also tend to become employed full-time, get married, and have children sooner than those students who feel no such attachment (Donaldson, 1986; Johnson, Elder, & Stern, 2005). Social capital here, then, functions as a constraint when it comes to educational attainment. This contradicts traditional notions

of social capital that suppose that embeddedness in social networks facilitates college-going. In rural areas, where the social structure is closed (i.e. where community members hold shared values and norms) (Coleman, 1988), not going to college may actually be a result of having social capital.

Ruralness functions as an educational constraint because some rural residents perceive college matriculation as a threat to the stability of their communities (Budge, 2006; Coleman, 1987; DeYoung & Lawrence, 1995; Farmer et al., 2006). There is a long standing pattern of outmigration in rural areas (Cadwallader, 1992; Carr & Kefalas, 2009; Elder & Conger, 2000; Ritchey, 1976). Rural residents who want their communities to remain intact may pressure youth to forgo college and instead gain employment within the community and begin a family (Cobb, McIntire, & Pratt, 1989; Cooper, 2002; Elder & Conger, 2000; Rodriguez, 1981). Residents use sanctions like pressure to procure employment, pressure to start a family, and ultimately social isolation to reinforce the norm of remaining in the community (Elder & Conger, 2000; Farmer, et al., 2006; Rodriguez, 1981). Students who comply with these norms choose to remain in the community rather than leave it to pursue a higher education. This is consistent with the notion that the consequences of having social capital can be both positive and negative (Portes, 1998). In the rural context, enacting one's social capital by adhering to community norms could be both useful for an individual's success within the community and harmful for that same individual's educational and career attainment. When students' social capital functions in these competing ways, students report feeling conflicted about their life's goals.

Students from rural areas report feelings of anger and emptiness about their futures when their educational and career goals are at odds with their social goals (Crockett, Shanahan, & Jackson-Newsom, 2000; Donaldson, 1986; Elder, King, & Conger, 1996; Hektner, 1995). Although students may adhere to the norms of their community by preferring to live in their rural areas, they also may not see a way to pursue their career goals there. Unfortunately for these students, rural areas do not presently have the variety of occupational opportunities metropolitan areas have. If students want to actively pursue their career dreams, they may necessarily have to go against the norms and move out of their communities (Farmer et al., 2006; Johnson, Elder, & Stern, 2005). For some students, moving out is simply not an option; their preference for the community outweighs their occupational aspiration (DeYoung and Lawrence, 1995; Donaldson, 1986; Kannapel & DeYoung, 1999; Nunez & Cuccaro-Alamin, 1998). Many of these students go on to report negative feelings toward their community because they perceive that the community has constrained their life choices (Hektner, 1995; Elder & Conger, 2000). For others, career goals are of more import, so they leave their community. However, many of these students report feelings of sadness that they felt the need to move out of their community in order to have their desired occupation (Hektner, 1995; Rudkin, Elder, & Conger, 1994).

In both instances students' social capital functions in both negative and positive ways, depending on the outcome researchers are interested in understanding. Consideration of the outcome is essential when talking about ruralness, as there are many applications for being embedded in dense social networks that could lead to a positive action on the part of individuals. In the case of educational attainment, however, it would

seem that ruralness functions mostly in a negative way. In effect, researchers of ‘ruralness’ argue that the effect of social capital on educational attainment in rural areas is the opposite of that in non-rural areas (Coleman, 1987; Hektner, 1995). Rather than leading to college matriculation, social capital can lead to not matriculating to college. In this way ‘ruralness’ is a type of prescriptive norm, where an individual “forgoes self-interest and acts in the interest of the collectivity” (Coleman, 1988, p. S104). Although prescriptive norms may be beneficial to the proliferation of rural communities, they sometimes have serious consequences for the educational and occupational attainment of rural youth.

Throughout this dissertation I consider the notion and utility of social capital as it relates to educational outcomes for youth from rural areas, paying particular attention to two forms of social capital: information channels and norms. Here information channels represent any social network or individual that provides students with knowledge about post-secondary options. Norms, on the other hand, dictate behaviors that social networks expect of their members. I believe that delineating among these forms of social capital may assist our understanding of rural college matriculation patterns, particularly those of first-generation college-goers. Specifically, I attempt to determine: whether social capital functions both positively and negatively in the matriculation of rural youth, and whether different forms of social capital differentially influence college-going.

Situating My Dissertation Work

In light of the social capital and ruralness literatures, I situate my dissertation work within two forms of social capital. 1) Coleman’s (1988) norms and sanctions form of social capital, but with Portes’ (1998) acknowledgement that this form of social capital

may be negative when it comes to the college matriculation of youth from rural areas, because these norms may limit individual students' autonomy in making decisions about their education. 2) Coleman's (1988) notion that information sharing can lead to greater knowledge gained about college matriculation, but with Burt's (1997) addendum that for students who otherwise lack social capital related to matriculation, this capital will likely not come from the students' immediate social networks but will instead come from individuals who are outside of their immediate networks. I explain my reasoning for both points in the following paragraphs.

With regard to the *norms and sanctions* form of social capital, I believe that the ruralness literature has effectively established that college matriculation may not be a normative behavior in some rural communities. Further, there may be sanctions against students who are interested in college matriculation. Whereas there are many positive aspects of being embedded in rich rural social networks, an increased ability to procure a higher education may not be one of them. As a result, I argue that the adherence to social norms in rural areas may impede college matriculation rather than encourage it. This means that in its norms and sanctions form, social capital can function negatively in rural areas with respect to college-going. However, in a different form, social capital can promote college matriculation.

The second form of social capital I assess is information channeling. The social and occupational structures of rural areas are largely homogeneous (Coleman, 1987; Portes, 1998). As a result youth are likely to be exposed to individuals who hold similar values and experiences. Although the aggregate influence of the interactions youth have with these individuals may be important to their decision-making, individual interactions

will be less important because individual interactions will be less distinguishable from each other. Interactions with individuals who hold values and experiences different from the youth and the youth's social network, though, will be more likely to stand out and thus more important because they have the opportunity to provide the youth with information he would not otherwise receive (Burt, 1997; Granovetter, 1974). Thus, I posit that for first-generation students, who likely do not receive information about college-going from their social networks, interactions with non-network members have a substantial influence on matriculation decisions.

These two forms allow me to analyze both the possibility that social capital promotes educational attainment and that it promotes educational constraint in rural areas. In the remainder of this chapter I review the extant research on rural college matriculation. While doing so, I outline how these two forms of social capital might help to explain findings from this research. Further, I consider the ways that social capital theory can help to explain the college matriculation of youth who, based on demographic characteristics, are unlikely to have done so.

Brief Introduction to the College Matriculation Literature Review

For decades researchers have been interested in identifying those characteristics, resources, and personal desires that are correlated with college matriculation. Here I define characteristics as those qualities that make someone recognizable or distinguishable - - notably demographic indicators. I define resources as sources of support students can draw upon, both tangible and intangible. Finally, I define personal desires as the aspirations and expectations students hold for their futures and the choices they make about their education. In the subsequent sections I review the extant research

in each of these categories. Within each category, I discuss the role social capital plays in helping to understand the research findings.

Characteristics

Researchers originally used status attainment models to explain the college matriculation of youth (Blau & Duncan, 1967; Bowles, 1972; Duncan, Featherman, & Duncan, 1972; Jencks, 1977; Teachman, 1987; Wilson & Portes, 1975). These models used social origins to predict students' matriculation patterns. One such social origin - - parental socio-economic status, a composite measure including income and education - - is consistently one of the strongest explanatory factors of college-going (Cabeza & LaNasa, 2000; Entwisle, Alexander, & Olson, 2005; Hearn, 1984; Teachman, 1987; Toutkoushian & Curtis, 2005). This relationship is particularly salient in rural areas (Bickel, Banks, & Spatig, 1991; Blackwell & McLaughlin, 1998; Smith, Beaulieu, & Seraphine, 1995; Wenk & Hardesty, 1991). Some researchers have even found that rural students from economically disadvantaged backgrounds are even less likely than similar students in urban and suburban areas to matriculate (Blackwell & McLaughlin, 1998; Yan, 2002).

Another commonly used demographic indicator in status attainment models is race/ethnicity. Whereas studies in urban and suburban areas often focus on associations between race and educational attainment, researchers in rural America typically speak only of White children. I was only able to find one recent study that explored differences between White and minority students from rural areas when it came to educational attainment. Rojewski (1999) found that White and Asian-American students in rural contexts were significantly more likely to attend college than African-American,

Hispanic or Native American students from rural areas (Rojewski, 1999). Rojewski also found that African American, Hispanic and Native American students in non-rural areas were significantly more likely to attend college than they were in rural areas, even after controlling for SES. The results suggest that minority students in rural areas may be in double jeopardy of not attending college.

The role of social capital. Social capital theory has less to offer the ‘characteristic’ literature in terms of explaining the college matriculation of youth than it does the subsequent two sections, so my description here will be brief. Membership in a certain socio-economic or racial group does not in and of itself determine whether someone will go to college. For example, not all White men with wealthy parents go to college. It is instead the affordances that one is given or denied by virtue of his membership in these groups that helps to determine whether he will go to college. Social capital theorists attempt to measure the affordances network members are given through their social relationships (Bourdieu, 1985; Coleman, 1988). In this way, social capital theorists are better able to explain variance in behaviors among individuals who share social origins, such as the college matriculation of individuals embedded in family and community networks where college-going is not a normative behavior (Burt, 1997; Granovetter, 1974). In the following section, I describe the ways social capital researchers accomplish this goal.

Resources

Ideally, students will have a variety of resources available to them to make decisions about their post-secondary plans. These resources can take both tangible, (available college financing) and intangible (social relationships that facilitate action)

forms. I spend the majority of this section discussing intangible forms of resources available to students. Specifically, I review the literature related to the three primary social networks of a high school student: family, community, and academic (Oakes, 2003; Phelan, Davidson, & Yu, 1993). In so doing, I illuminate the ways social capital theory can help explain the role of resources in the college matriculation process.

Family Networks

Perhaps the strongest social network in which an individual is embedded is that of her family. Students who are members of families with strong personal relationships are often recipients of a great deal of social capital from their parents and siblings, especially with regard to information sharing and behavioral norms (Coleman, 1988; Hao, 1994; Portes, 1998). I explore both forms of social capital in this section.

Information sharing. The strength of information sharing is repeatedly seen by the strong, positive relationship between parents' level of education and students' level of education (Blackwell & McLaughlin, 1998; Smith et al., 1995). Parents who have first-hand knowledge about the college process are able to pass on invaluable information to their children, which the children can then use to guide themselves through the admissions process (Vargas, 2004). In this respect, first-generation college students are obviously at a disadvantage from a social capital perspective because their parents lack the intimate knowledge about college-going that parents who have gone to college are able to provide (Thayer, 2000).

However, parents who have not gone to college may be able to provide their children with some of this information by seeking out social relationships with others in the pursuit of providing their children information about higher education (McGrath,

Swisher, Elder, & Conger, 2001; Onyx & Bullen, 2000). In communities where all individuals interact with each other, students and families are able to increase their social capital by sharing information between individuals with different life experiences. This information-sharing helps to mitigate some of the relationship between socio-economic status and college matriculation (Brooks-Gunn, Duncan, & Aber, 1997; Entwisle et al., 2005; Israel, Beaulieu, & Hartless, 2001; Mayer & Jencks, 1989).

Other rural communities, particularly those with economies like mining and share cropping, historically tied to power disparities, have closed and economically stratified social structures (Duncan, 1999). In these communities members of different economic groups do not interact with one another and do not share information with each other (Bauch, 2001; Budge, 2006; McGrath et al., 2001; Nadel & Sagawa, 2002; Singh & Dika, 2003; Smith et al., 1995). Here, disadvantaged families are often unable to enact the information channeling form of social capital in a way that promotes college-going for students, but they may be able to utilize another form of social capital.

Norms. Luckily, information sharing is not the only way parents increase their children's potential social capital. They can also adopt behavioral norms that support college-going. As I have already outlined, behavioral norms can serve to promote or constrain educational attainment in rural areas. One way parents can promote their children's college-going is by communicating to them that college matriculation is a behavioral expectation. Researchers have found that students' decisions to go to college are highly linked to their parents' expectations for them (Conklin & Dailey, 1981; Israel, Beaulieu, & Hartless, 2001; Smith, Beaulieu, & Seraphine, 1995). This means that when

students are aware that their parents expect them to go to college, they are more likely to do so.

However, behavioral norms, expressed through parental expectations, can also lead students to not to go to college. Rural parents appear to have particularly low educational expectations for their children. Rural students' parents are less likely than urban parents to expect that their children will attain more than a high school education, 61% and 74% respectively; this also means they are less likely to convey college matriculation as a norm to their children (McCracken & Barcinas, 1991). Other studies have reported similar findings, adding that rural parents are more likely to want their children to secure full-time jobs immediately after high school than their urban counterparts, thereby reinforcing the norm that college matriculation is not important (Cobb, McIntire, & Pratt, 1989; Cooper, 2002). These findings support the notion of ruralness.

Intergenerational closure causes family ties to be particularly strong in rural areas (Coleman, 1988; Flora, 1998; Hofferth & Iceland, 1998). Generations of the same family will have grown up in the same community, producing the expectation that future generations will also remain in the community. Parents in these areas are often conflicted about their desires for their children. Albeit parents want their children to follow their own dreams, parents also want their children to stay at home in order to avoid the moral corruption of the world outside of their closed community (DeYoung & Lawrence, 1995; Fricke, in press; Johnson et al., 2005). It is possible that for many parents, their fears for their children's morality and safety cause them to favor behavioral norms that do not

support college matriculation; in rural areas, moving on to college also implies moving out of the community (Hektner, 1995).

The studies reviewed here conclude that an individual's educational attainment is highly associated with family norms and ability to share information pertinent to college-going. When families are less privileged, their ability to increase social capital for their children may be intricately linked to the power dynamics of the community in which they are embedded. To better understand the role communities play in the life of students, I review the rural community literature next.

Community Networks

Community members and peer groups also play roles in the college matriculation of youth through information sharing and the communication of norms (Brooks-Gunn et al., 1997; Entwisle et al., 2005; Hansen & Ross, 1980; Israel et al., 2001; Mayer & Jencks, 1989; Yan, 2002; Yang, 1981). In this section, I outline the ways that relationships with community members and peer groups facilitate either the college matriculation or non-college matriculation of rural youth.

Information sharing. Students from rural areas, especially those whose parents have not gone to college, are more likely to matriculate when they are embedded in social networks that include a number of community members (Bauch, 2001; Budge, 2006; McGrath et al., 2001; Nadel & Sagawa, 2002; Singh & Dika, 2003; Smith et al., 1995). This relationship becomes even stronger when those networks include individuals who are outside of the students' immediate social network, namely individuals who have jobs with high occupational prestige (Blackwell & McLaughlin, 1998; Singh & Dika, 2003).

Put another way, the amount or degree of social capital available to a student increases when that student is a member of a social network that has structural holes (Burt, 1997).

The influence of community members is especially important for rural students because rural communities are smaller and more isolated than urban and suburban communities (Beeson & Strange, 2003; Stern, 1994). Students in these communities are not exposed to the variety of occupational choices to which other students are exposed. Therefore, they may constrain their vocational aspirations to the occupational norms they see around them (Duncan, 2001; Ianni, 1989; Miller, 1993; Reid, 1989). Students from rural areas who participate in open social networks including individuals with varying occupational prestige are less likely to constrain their occupational goals because the norms regarding occupational choices are less defined than they are for students in closed social networks.

Additionally, researchers have shown that it is important for students to be embedded in dense social networks that include adults who can advise them about the college-going process (Blackwell & McLaughlin, 1998; McDonough, 1997). Community members who have gone to college themselves may be able to help students navigate the higher education waters through information channeling (McGrath et al., 2001; Zekeri, Wilkinson, & Humphrey, 1994). It is particularly important for first-generation college-goers, who cannot rely on their familial social networks for this type of information, to have associations with community members outside of their immediate social network (McGrath et al., 2001). These weak ties may prove to be the only first-hand sources of knowledge rural students have, and thus they take on a critical role in his matriculation process.

Norms. Students can also increase their social capital if they seek out community networks where college matriculation is the norm (Bourdieu, 1985). Some have found that peer networks are more influential than any other non-kin network in communicating these norms (Sewell, Haller, & Ohlendorf, 1970; Teachman, 1987). Students who are embedded in peer networks where the norm is studying and going to college are themselves more likely to go to college (Hansen & Ross, 1980; Yan, 2002; Yang, 1981). Inversely, students who are members of peer networks where college-going is not the norm are less likely to matriculate.

The same inverse relationship is found within community networks generally. Students who are embedded in communities where college-going is the norm are more likely to go to college (Cabrera & LaNasa, 2000; Cooper, 2001; Hearn, 1991). Conversely, when their communities convey norms that oppose higher education attainment, students are less likely to matriculate (DeYoung, 2002; Donaldson, 1986; Johnson, Elder, & Stern, 2005). The relationship between community norms and college matriculation is particularly strong in rural areas with closed network structures (Coleman, 1987; Gaeff, 2009). There are, however, individuals who are embedded in communities where college-going is not the norm and yet still go to college. In an effort to understand how this might happen I turn to the academic network literature.

Academic Networks

Students' social networks also extend to their schools. The literature concerning college matriculation and high schools tends to fall into two categories. The first relates to the *structure* of high schools including: course offerings, extracurricular activities, and school size. The second thread of research relates to the social organization of the high

school, particularly student-teacher relationships. I outline the major findings in the following sections.

School structure. The availability of academically rigorous courses and course taking appear to be the two most robust school level predictors of college-going for students from rural areas (Chenoweth & Galliher, 2004; Khattri, Riley, & Kane, 1997; Rojewski, 1999; Yan, 2002). High school curricula provide students with academic resources they later take to high education (Adelman, 2001). Nevertheless, the norms of rural schools have historically dictated that they resist advanced academic curricula and instead encourage vocational education (DeYoung, 2002; McDermott, 1997). Preference for vocational curricula is largely attributed to the occupational constraints of rural areas. High schools are viewed as endpoints meant to teach students how to work in the “real world”, meaning how to fill the occupations that are around them (Burnell, 2003; Crockett, Shanahan, & Jackson-Newsom, 2000).

If students in rural areas are indeed being told to go to work instead of college and being pushed toward vocational coursework, their chances of matriculating to college are significantly diminished because they are being pressured to adhere to the norms of their school (Oakes, 2005; Portes, 1998). First-generation students from rural areas may be doubly disadvantaged from a curriculum standpoint, unless a weak social tie associates them with someone who does not hold these norms *and* is able to steer them toward more rigorous coursework (Choy, 2001; Duncan, 1999).

Unfortunately, rural high schools are unlikely to offer advanced placement (AP) courses, which are positively related to college matriculation (Khattri et al., 1997; McDermott, 1997; Rojewski, 1999; Yan, 2002). Taking advanced mathematics in high

school is the strongest curriculum predictor of graduating from a 4-year college (Adelman, 2001; Mann, 2005). Students who are enrolled in these courses tend to come from familial social networks where members are knowledgeable about the college-going process (Oakes, 2005; Choy, Horn, Nunez, & Chen, 2000). Through their social relationships, students have been informed that enrollment in advanced mathematics is important and they enroll accordingly. Students who come from families without this information though are less likely to go to college (Choy, 2001).

School size. Some rural schools are unable to provide academically rigorous courses because they enroll so few students (Kannapel & DeYoung, 1999; Lee, Smerdon, Alfeld-Liro, & Brown, 2000; Miller, 1993). Small schools are not uncommon in rural areas, and indeed school size is a concern that has sparked much debate in the rural education literature - - primarily as a result of school consolidation practices (Coladarci & Hancock, 2002; Reynolds, 1999). In many rural areas, schools within and between districts have consolidated small high schools into one larger high school. Researchers have put forth three arguments with regard to the effect of school size on student achievement (Leithwood & Jantzi, 2009).

The first follows social capital theory. Here researchers promote small schools because they believe that small schools are associated with, among other things, stronger within school social networks between students and teachers; these relationships help lead to higher student satisfaction, and greater student achievement (DeYoung, 1987; Dunne, 1977; Fowler & Walberg, 1991; Lindsay, 1982; Nelson, 1985). Other researchers make an economy of scale argument, believing that one large school has fewer administrative costs than a series of smaller high schools (Bickel, Howley,

Williams, & Glascock, 2001; Fanning, 1995; McGuffey & Bown, 1978; Nelson, 1985; Reynolds, 1999). The money that is saved by the reduction in administrative costs can then be channeled into other areas, like increased curriculum offerings, which would benefit the academic achievement of students. Finally, some researchers have found that there is an optimal high school size, where students may receive both interpersonal relationships with school personnel and a more advanced offering of courses (Lee et al., 2000; Lee & Smith, 1997).

A preponderance of evidence indicates that the economy of scale argument is not applicable to rural areas (Chambers, 1981; DeYoung, 1987; Fowler & Walberg, 1991; Streifel, Foldsey, & Holman, 1991). The increased cost of bussing students great distances (financial and human) together with the cost of larger school facilities, offset any savings consolidation provides. Additionally, larger schools seem to be particularly harmful for the achievement of students in lower socio-economic strata, which suggests that first-generation rural students may achieve more in non-consolidated schools (Howley, 1996; Howley & Howley, 2004; Lee & Smith, 1997).

There is less of a consensus between the small school and optimal school size debate in rural areas (Howley & Howley, 2004; Lee & Smith, 1997). However, given extant research on the importance of both curricular offerings and social relationships, it seems to make sense that an ideal school would be one that is large enough to provide challenging curricula while also being small enough to foster positive social networks. Lee and Smith (1997) suggest an ideal size of 600 to 900 students. Additionally, it seems that medium-sized schools may also be better able to provide a variety of extracurricular activities for their student body because their larger student body provides them with

increased financial capabilities. Students who participate in extracurricular activities are more likely to feel positively about their academic networks (Eccles, Barber, Stone, & Hunt, 2003; Marsh & Kleitman, 2003; Stanley, Comello, Edwards, & Marquart, 2008). Further, students involved in these activities are more likely to enroll in college (Eccles, Barber, Stone, & Hunt, 2003; Johnson et al., 2005; Marsh & Kleitman, 2003; McDermott, 1997). Although this literature illuminates the important role positive social networks within schools play in improving extracurricular participation and even perhaps college matriculation rates, there is a well articulated literature that defines these networks and their import, which I review in the following section.

Social organization. Coursework and extracurricular participation are not the only aspects of schooling that influence matriculation patterns. Social capital theorists have found that relationships between school personnel and students can influence students' decisions to stay in high school and ultimately enroll in college (Goodenow & Grady, 1993; Lee & Burkam, 2003; Oakes, 2003; Sanders & Jordan, 2000). Once again, social capital within schools typically takes the form of information sharing or the communication of norms. I describe each below.

Information sharing. Urban researchers have found that school counselors can be important sources of college matriculation information among high school students. However, counselors can only serve to increase their students' ability to enact "college related" social capital if they discuss college options with students and help students navigate the college application and financial aid process (Cabera & LaNasa, 2000; Choy et al., 2000; Falsey & Heyns, 1984; Hill, 2008; King, 1996; Perna, 2000). The counselors in schools serving low-income and largely minority populations are less likely to provide

students information about the college-going process (Hill, 2008; Perna, 2000). When this is the case, the presence of a counselor has little impact on matriculation because the counselor does not provide students with information that could serve to improve their social capital (Falsey & Heyns, 1984).

The social relationships and information sharing between counselors and students is invaluable for many urban students and has even been shown to help mitigate some of the relationship between matriculation and socio-economic status when counselors provide information about college-going (Falsey & Heyns, 1984; King, 1996; Perna, 2000). Perna (2000) hypothesized that counselors are able to increase students' social capital, relative to college matriculation, by providing them with information about college and assistance in decisions about college enrollment that they do not get from home and that this information and assistance leads to higher college enrollment rates. Counselors also play an important role in assisting students' decisions as to which types of colleges to apply (Plank & Jordan, 2001). This is particularly true for students from low socio-economic status groups, whose counselors have been found to be their students' "single most likely source of information about college" (Cabera & LaNasa, 2000).

For these students and particularly for first-generation college-goers, their ties with counselors may act as their primary source of college-going social capital. Counselors may be some of the few people who can provide students with information on how to match their educational desires, and academic abilities with an appropriate college, without the constraint of community norms. There is some evidence that counselors play significant roles in the lives of rural students as well (Schonert, Elliott, &

Bills, 1991), but because of their limited resources, rural schools are less likely to have counselors (Yan, 2002).

Researchers have also found that positive social relationships between teachers and students encourage student achievement (Epstein & Sanders, 2000; Goodenow & Grady, 1993; Lee et al., 2000; Lee & Burkam, 2003; Phelan et al., 1993; Sanders & Jordan, 2000). Functionally, these relationships have been measured by students' self-reports of relationships with teachers and out-of-class contact between students and teachers (Croninger & Lee, 2001; Goodenow & Grady, 1993; Lee & Burkam, 2003). Researchers argue that positive student-teacher relationships can serve to increase students' social capital through information channeling as well as through shared norms and values (Coleman, 1988; Dornbusch, Flaggow, & Lin, 1996). Extrapolating these findings to college matriculation then, students who have access to positive relationships with teachers are more likely to go to college because such students have gained valuable information from their teachers about the college-going process, and because teachers will have communicated to students that college matriculation is the desirable norm.

Norms. Nevertheless, not all school social structures subscribe to the notion that college matriculation is a desirable norm. Schools are after all, embedded within community social networks. In closed community networks, the teachers and administrators of the school often share the values of the community (Coleman, 1988; Dornbusch et al., 1996). If the community does not value college matriculation, the school may not either. Researchers interested in the concept of ruralness have found that schools embedded in rural communities that emphasize work over higher education tend to reflect the emphasis of work in the norms of the schools (DeYoung, 1995; DeYoung &

Lawrence, 1995). In these instances, increased social capital, as measured by positive student-teacher relationships, may lead students not to go to college (Coleman, 1987).

It is apparent that academic, community, and family networks all influence the decisions students make as well as the opportunities that are afforded to them. These social networks provide students with information about the world at large and about the way they should behave in that world. These social networks also influence the life choices students perceive themselves as having. In the following section, I examine the literature about how decisions, like aspirations and expectations, influence matriculation decisions.

Student Decisions

Although social networks influence the choices individuals make, it is ultimately the individual who has to take action to enact her social capital (Bourdieu, 1985; Coleman, 1988). For the purpose of this dissertation, the action I am interested in is whether or not a student matriculates to college. Besides the influence of a student's social networks, her motivation and desire to matriculate affects whether or not she goes to college and the type of college she attends. As a result, I review the literature pertaining to students' desires for the future.

Norms. Students who aspire and expect to go to college are more likely to matriculate than students who do not aspire or expect to go to college. (McCracken & Barcinas, 1991; Choy et al., 2000; Teachman, Paasch, & Carver, 1997; Woelfel & Haller, 1971; Yan, 2002). Researchers have replicated these findings in rural areas, ultimately concluding that though rural students have lower educational aspirations than their urban and suburban counterparts, having high educational aspirations makes them more likely

to go to college than their counterparts (Adelman, 2002; Blackwell & McLaughlin, 1998; Cobb et al., 1989; Haller & Virkler, 1993; Hansen & McIntire, 1989; McCracken & Barcinas, 1991; Schonert et al., 1991; Serigianti, Wilson, Peterson, & Vicary, 1990). Some of this heightened desire for higher education could spring from a new set of norms developing in rural areas facing substantial economic hardships (DeYoung & Lawrence, 1995; Elder Jr. & Conger, 2000). Those norms dictate that individuals should provide for their families in whatever way they can. Both first-generation college-goers and students from rural areas report that they want to go to college, so they can procure a high paying job that will help ease their families' financial burdens (Hektner, 1995; Johnson et al., 2005; London, 1989).

Adhering to norms consistent with college matriculation may be particularly salient for young women from rural areas. Researchers have found that female students, whose desires for the future are at odds with the norms of their rural communities, tend to have higher educational aspirations (Elder & Conger, 2000). Specifically, rural women who are less interested in beginning a family while they are still young, a norm attributed to some rural areas, tend to have higher education aspirations than their rural peers (Burnell, 2003; Chenoweth & Galliher, 2004; Crockett & Bingham, 2000; Donaldson, 1986). These women privilege their personal goals over the prescriptive norms espoused by their social networks.

The prescriptive norms of many rural areas can also have negative effects on students' desires to go to college. As I have already discussed these effects in detail, I only briefly mention here that students often constrain their future life choices so that they match the norms of the community (Burnell, 2003; Chenoweth & Galliher, 2004;

Cobb et al., 1989; Miller, 1993). Historically, the norms of many rural communities have dictated that immediate entry into the workforce is preferable, as it signifies entry into adulthood and the 'real world' of work and family (Chenoweth & Galliher, 2004; Elder & Conger, 2000; Wallace & Diekroger, 2000). The pull toward work instead of college may be more salient for young men from rural areas who historically have had greater job opportunity in rural economies, whereas the desire to start a family may be a more significant college deterrent for females (Burnell, 2003; Chenoweth & Galliher, 2004; Donaldson, 1986; Wallace & Diekroger, 2000).

College type. Norms come to play not only in whether or not a young person wants to go to college, but also the type of college he or she decides to attend. Students' college choices are linked not only to the admission policies of institutions, but also to the students' decisions about where to apply. The admissions criteria of highly selective colleges have historically favored students who are themselves socio-economically privileged. However, these criteria are becoming increasingly meritocratic with greater emphasis placed on academic ability than ever before (Hearn, 1991; Persell, Catsambis, & Cookson, 1992). However, researchers report that less privileged students (ie. first-generation college-goers) and rural students are less likely to apply to and attend elite higher education institutions (Gardner, 1987; Hearn, 1991; Karen, 2002; Lewis & Kingston, 1989; Lillard & Gerner, 1999; Massey, Charles, Lundy, & Fisher, 2003; McDonough, 1997; Owings, 1998; Persell, Catsambis, & Cookson, 1992). This is problematic, in so far as students who attend elite universities are more likely to attain higher levels of education, to have greater earning potential, and to have greater occupational prestige than students attending less selective institutions (Brand & Halaby,

2006; Brewer, Eide, & Ehrenberg, 1999; Education, 1991; Kingstong & Smart, 1990; McClelland, 1990; Snyder, 1987; Thomas, 2003; Useem & Karabel, 1986; Velez, 1985).

Unlike youth who come from high socio-economic groups, where attendance at a selective college is more common, youth from low-income households are less likely to have individuals in their social networks who have attended a selective university (Hearn, 1991; Lewis & Kingston, 1989; Massey, et al., 2003). As a result, students from less-privileged families tend to constrain their education choices in part because matriculation to an elite college is not a normative behavior in their own social networks (McDonough, 1997; Thomas, 2003). This may be magnified for less-privileged students from rural areas, as rural residents are particularly unlikely to attend elite institutions (Karen, 2002). Students who desire to conform to the norms of their rural communities, may not even consider the possibility of matriculating to an elite college because that behavior would be outside of the norms of their community.

Students' college-going decisions are highly influenced by their social networks. Students' educational aspirations and expectations are largely influenced by their adherence to or rejection of the behavioral norms of their communities. Students from rural areas who privilege their communities' values tend to aspire to lower levels of educational attainment. Students who privilege their own wants and desires, on the other hand, may want to pursue a higher education. Further, students' decisions about which college to attend are influenced by the attendance behaviors of those around them. In this dissertation I explore these phenomena as well as identifying factors that may have influenced individuals to go with or against the norms of their social networks.

Conclusion and Research Questions

High school students from rural areas are underrepresented in 4-year colleges and universities (Chenoweth & Galliher, 2004; Cowell & Zemsky, 200). Those whose parents have not gone to college may be even less likely to attend (Adelman, 22002). This may not have been a problem in the past, as many rural youth went straight from high school to work. Currently, though, the rural industries that used to support these workers are no longer viable sources of employment. Therefore, students interested in becoming gainfully employed, increasingly must enroll in college to prepare themselves for alternative careers.

This can be a daunting task for students from rural areas whose parents have no experience with higher education because these students are more likely to lack both the financial resources needed to attend college, and the intimate knowledge about the college-going process that comes from relationships with someone with experience in higher education. Even though such students face substantial obstacles to their own matriculation, some do indeed go to college. My aim is to understand how some first-generation, rural, high school students are able to matriculate, in the hope of providing recommendations for school administrators and policy makers who want to improve college-going opportunities for students from rural areas.

My analysis of the extant research has led me to recognize that social networks play a substantial role in whether or not a rural high school student ends up matriculating. Academic and community networks may take on even greater importance for the matriculation of youth from rural areas whose parents have not gone to college, as these networks may be able to provide students with college-related social capital that their

families are unable to provide. However, researchers have rarely considered these various sources of social capital in combination with each other. Thus, we do not know if students' post-secondary decisions are differentially influenced by their social networks. For example, does the community espouse ruralness while the family promotes college-going? We do not know if social networks influence these decisions differently, based on groupings of students. In other words, are community social networks more influential for students from rural areas who attend non-elite colleges than for students who attend elite colleges? Understanding the complementary or counter-productive ways in which these social networks function in relation to college matriculation can help policy makers formulate policies that ease the challenges youth from rural areas face in the matriculation process, especially those whose parents have not gone to college. I follow this line of questioning in my dissertation analyses.

Education researchers like me are well equipped to provide evidence-based policy recommendations that directly impact academic environments. This position motivated me to embark on an in-depth analysis of high schools and their students in rural America. Through this analysis I hoped to identify certain aspects of schools that make students more or less likely to go to college. I pay attention to the ways that social relationships within schools are related to the matriculation of rural youth, especially those with less educated parents. I also, however, explore whether some of the structural factors, identified in my literature review, are importantly related to college-going above and beyond students' social relationships. This analysis allows me to provide specific recommendations to high schools for those interested in increasing the opportunities for their students have to matriculate to college.

My analyses identify characteristics of students, families, schools, and communities that inform college matriculation. However, I am unable to understand the process by which these social networks come to be important for the matriculation of youth. In order for researchers to make the most effective program and policy recommendations, they need to know both *what* is importantly related to matriculation and *why* it is important. Without such an understanding, researchers may interpret their findings incorrectly and make inappropriate policy recommendations.

For example, researchers might find that first-generation students who participate in extracurricular activities are more likely to go to college than are those who do not participate in such activities. This could lead them to recommend that schools require extracurricular participation. However, upon interviewing students, the researchers could more accurately pin-point the reason for this relationship. Extracurricular participation becomes important for the matriculation of first-generation youth when those activities provide students with exposure to higher education institutions. With this new insight, researchers would be better able to help schools create programs that will provide the best possible educational opportunities for their students. My purpose in this dissertation is not only to identify the multitude of influences that shape the post-secondary decisions of first-generation students from rural areas, but also to understand why and how these influences (as well as others that may be unidentified in the prior analyses) are important.

I address the following specific questions in this dissertation, all in the interest of understanding how first-generation students from rural areas may get to college:

1a. How are students' decisions to go to college concurrently influenced by their experiences with their home, school and community social networks?

Hypothesis 1a. In my first research question I investigate whether social networks, connection to community, and lifetime goals influence whether or not students matriculate to college. Of particular interest are the somewhat competing goals of occupational success and desire to remain in the community. I hypothesize that the students who choose to go to college place more import on occupational success and less import on attachment to place. Further, I hypothesize that those students who matriculate to college are more likely to be embedded in social networks that promote college-going and that the influence of these networks on college-going is greater for students whose parents have not themselves gone to college. Additionally, I hypothesize that social networks influence the matriculation of students differently based on whether or not their parents have gone to college. Specifically, I predict that students whose parents have not gone to college will rely more heavily on community, peer, and academic social networks than do students whose parents have at least a college degree.

1b. Sub Question: Do these experiences influence the type of college in which students from rural areas enroll?

Hypothesis 1b. My second hypothesis supposes that the students who attend elite 4-year colleges will be both exceptional students (i.e. they are higher achieving, participate in more extracurricular activities, take more rigorous courses, etc.) and the most socially privileged students. I also hypothesize that those students from rural areas who attend elite colleges have lower levels of attachment to place than others. I believe this will be the case because students from rural areas who attend elite colleges had to

make the decision to move out of their community, a choice that for those with strong senses of ruralness is not salient.

2. How does the structure and social organization of high schools in rural areas influence the college-going decisions of the students who attend them?

Hypothesis 2. In this hypothesis I suppose schools with positive social organizations (i.e. where the student body and teachers get along with each other) are more likely to have college-bound youth. I expect that schools with positive social organizations are in a better position to increase students' potential for social capital than are schools where students and teachers have weak relationships with each other. Further, I expect to find associations between 1) school size and the social organization of schools, and 2) school size and school structure. I believe in medium-sized high schools, which are large enough to accommodate advanced course offerings, but small enough for students to get individualized attention, higher proportions of students matriculate to college (Lee & Smith, 1997). This later belief stems from the rural school size debate, in which researchers argue that large schools are not able to provide quality positive student-teacher relationships and small schools are not able to provide academic rigor (Lee & Smith, 1997; Lee & Burkham, 2003).

3. What are the processes through which homes, high schools, and communities affect these students' decisions to enroll in elite colleges?

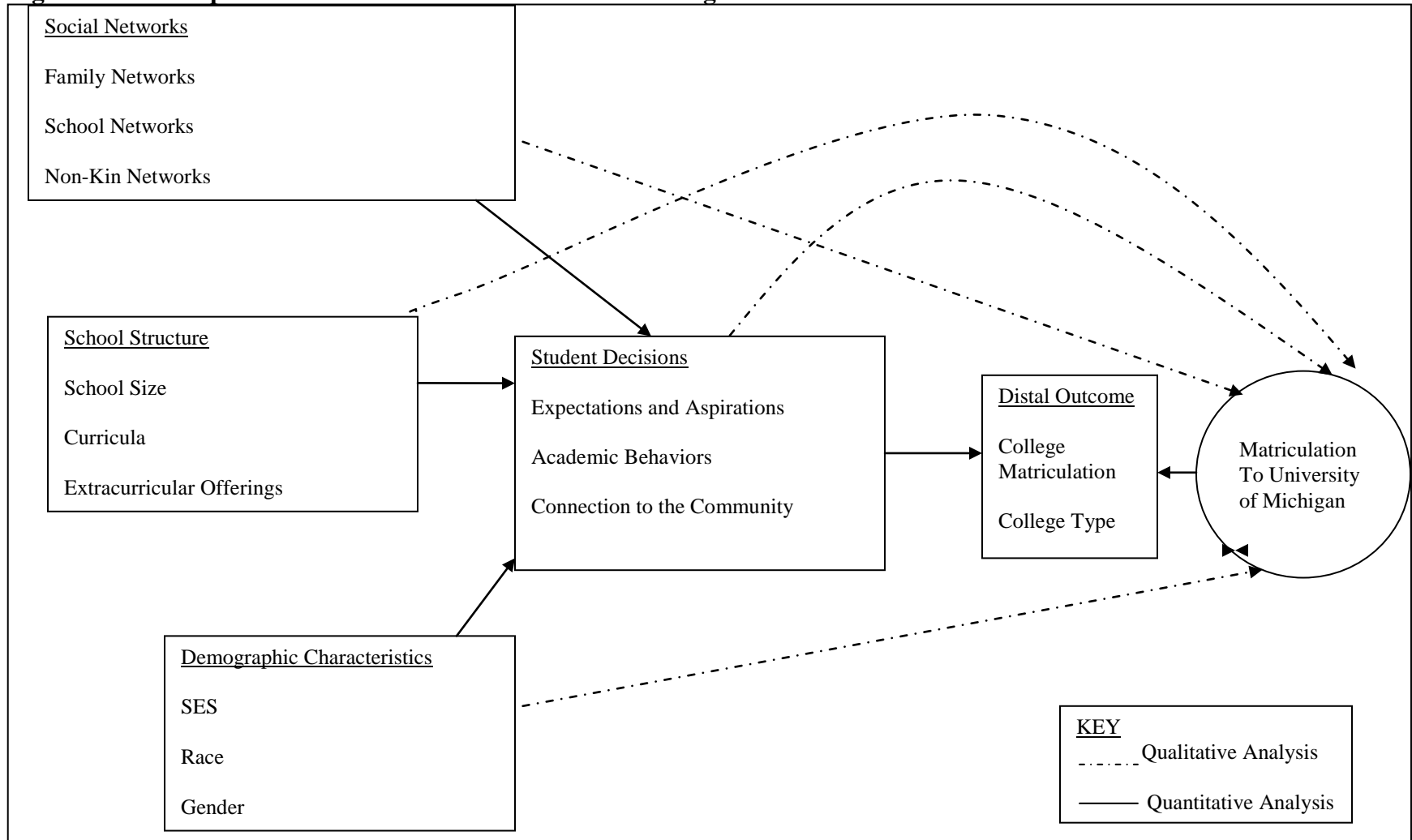
Theory. I was uncertain what I would uncover as I explored why and how these social networks influenced the college-going decisions of youth from rural America. Initially I wanted to determine whether there were influences in students' lives that researchers had not yet identified. Additionally, I hoped that I would be able to explain

why certain characteristics or relationships that I had uncovered either in the literature review or in response to my previous research questions were important for youth. I narrowed my analysis to first-generation students enrolled in an elite public university because these students were particularly successful in defying the odds of college matriculation and I believed that their experiences would best highlight the ways social networks can effectively support students in rural areas.

Explanation of Conceptual Model

In Figure 2.1, I provide a conceptual model of my dissertation design. In this model, I address how various influences in students' lives work together to inform college matriculation decisions. On the left side of the model, I consider the ways that students' social networks, including their home, community, and school, influence their abilities and aspirations, which in turn influence their post-secondary decisions. I take these areas up in my analysis of college-going among rural youth in the United States (see Chapter 4). I also consider the ways that school environment influences groups of students' decisions to go to college. I report the results of this nested data analysis in Chapter 5. On the right side of the model, I incorporate my analysis of students enrolled in the University of Michigan, again relating this analysis to the factors illuminated by the literature as being important for college-going (see Chapter 6). I then consider the results of each of these analyses in light of the others, to bring forth the important understandings each can provide for researchers studying college bound rural youth.

Figure 2.1. Conceptual Model of Influences on Student's College Matriculation



Chapter 3

Methods

In this dissertation, I relied upon both quantitative and qualitative research methodologies to investigate questions related to students and schools. Throughout this chapter, I explain the various methodological techniques I employed and my reasoning for using them. For the ease of the reader, I divide the chapter between quantitative and qualitative analyses. I would like to stress, though, that my analytic process was iterative; as I learned something from one aspect of this study I attempted to see if and how that information might apply to other aspects of the study. In so doing, I took a mixed methodological approach. I describe this approach below.

Theory of Mixed Methods

Studies using multiple types of methodology are increasingly being utilized to address questions in education research. This field of study is relatively underdeveloped with regard to basic guiding principles and utility. As a result, there is controversy in the field over what constitutes a mixed methods study and the various forms this type of methodology can take (Tashakkori & Teddlie, 2003). Despite these debates, researchers generally agree that a mixed methods study is one that integrates quantitative and qualitative research in some way, typically with respect to data analysis and inferences.

Researchers do not yet, and indeed may never agree on the terminology used to describe such studies and their designs. However, in their mixed methodology handbook, Tashakkori and Teddlie (2003) have attempted to tackle some of these terminology

issues. They define three broad research design categories for mixed methods research: multi-method design, mixed methods design, and mixed model design. The current study represents a form of mixed methods research using a mixed model design. In such a design, quantitative and qualitative research methods are mixed both across and within procedural stages, including: research questions, data collection, and data analysis (Johnson & Onwuegbuzie, 2004; Tashakkori & Teddlie, 2003).

A mixed model design is used when researchers are interested in addressing both *what* and *how/why* questions. *What* questions, typically thought of as being summative or predictive, help researchers understand whether or not there is a relationship between variables. *How* and *why* questions, on the other hand, are asked when researchers are interested in the process by which something happens (Rossi, Lipsey, & Freeman, 2004). Further, researchers are sometimes interested in investigating a variety of either type of question (*what* or *why/how*) within one study and will employ different analytic strategies to address those inquiries. For example, they can use both hierarchical linear modeling and binary logistic regression. When each of these interests is in play, the only form of mixed method research that will appropriately address these questions is a mixed model design.

Review of Mixed Methods Literature

Historically there have been two distinct research paradigms in the social sciences, quantitative and qualitative, that were rarely used in conjunction with each other. These two paradigms were born from opposing epistemological perspectives and, as a result, researchers tended to adhere to one or the other (Guba & Lincoln, 1994; Howe, 1988; Tashakkori & Teddlie, 2003). Quantitative research developed out of the

positivist perspective, where knowledge is testable and value-free (Johnson & Onwuegbuzie, 2004; Rossi, Lipsey, & Freeman, 2004; Tashakkori & Teddlie, 2003). Qualitative research, on the other hand, developed out of an interpretivist perspective (Ferguson, 1991; Guba & Lincoln, 1994; Johnson & Onwuegbuzie, 2004; Schwandt; 2000). This perspective assumes that knowledge is constructed and that it is impossible to separate the researcher from that which is being researched- - because the interpretation of the analysis is influenced by both context and the researcher's prior experiences (Attinasi, 1989; Howe, 1988; Mauthner & Doucet, 2003). Nonetheless, researchers have more recently begun to combine these methodological strands in the hope of more fully understanding social phenomena.

The merging of these methodologies has become the source of much theoretical debate. Critics of mixed methodology research believe that differences in epistemological perspectives make quantitative and qualitative methodologies incompatible with one another (Greene & Caracelli, 1997; Guba & Lincoln, 1994; Howe, 1988). Some researchers disagree with this critique and instead argue that the degree of these epistemological tensions is inflated because quantitative researchers have largely ceased to be purely positivist and instead have moved toward perspectives that are more compatible with interpretivism, like post-positivism¹ (Howe, 1988).

Still others take the dialectical position that having tensions is not problematic and instead, if treated properly, could be the root of even greater meaning making (Greene & Caracelli, 1997; Halvorsen, Lee, & Andrade, 2009). For example, Greene and Caracelli (1997) state “contrasts, conflicts, and tensions between different methods and their findings are an expected, even welcome dimension of mixed-method inquiry, for it is in

the tension that the boundaries of what is known are most generatively challenged and stretched” (pg. 12). These researchers argue that by employing both methodologies they cease to constrain themselves and their thinking to a particular perspective, and can instead conduct research that provides a more complete story of human behavior.

Even though mixed methodology continues to gain favor, it is becoming increasingly important for researchers to be clear about the design models they use to conduct their mixed methods analyses (Rossi, Lipsey, & Freeman, 2004; Tashakkori & Teddlie, 2003). Articulating a design model helps the researcher apply academic rigor to his work because it provides him with a tested framework he can follow while conducting his analyses. Further, it allows other mixed methods researchers the opportunity to quickly understand the type of research being conducted.

Researchers have proposed a variety of mixed methods models that work to integrate these epistemological perspectives, including sequential² and concurrent triangulation³ models (Cresswell, Clark, Gutmann & Hanson, 2003; Miller, 2003). In sequential models, data are generally collected at different time points and perhaps even from different data sources. The methodology is then integrated at the data analysis phase (Creswell, Clark, Gutmann, & Hanson, 2003). In concurrent triangulation models, the methodologies are entwined as data are collected and remain entwined throughout the analysis process. In this dissertation study, I have followed the examples of these researchers and established a clear research model that I followed throughout my dissertation process. I describe my model in the following section.

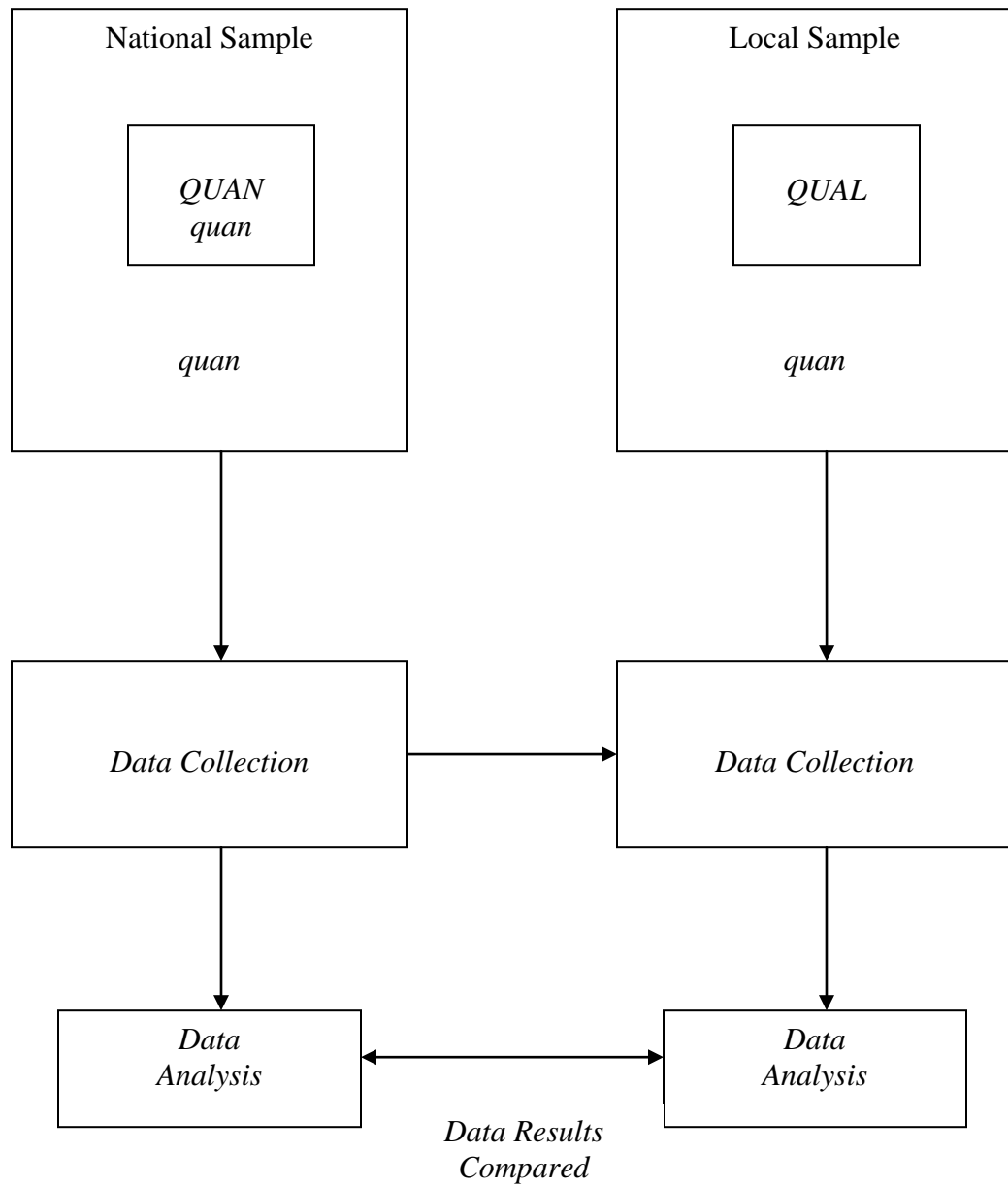
Current Study's Mixed Model Design

Using Morse's (2003) mixed method notation, I created an outline of the relationship of my mixed model design (see Figure 3.1). My data did not quite fit the designs researchers have proposed. Rather, it was some combination of these. This study was sequential, in that data were collected at 2 time points. It was nested because at each time point I had a large data source, with a smaller data source nested within it. Further, the study was triangulated in that I compared the results of each study to form a more complete picture of the college matriculation of youth from rural areas. Thus, I employed a sequential nested triangulation study design.

In Figure 3.1, I display the two distinct data sources I utilized in this dissertation, the national sample (on the left) and the local sample (on the right). My national analysis was driven entirely by quantitative research, with one primary analysis, indicated by the notation 'QUAN', and two sub-analyses, indicated with 'quan'. My local analysis was driven by qualitative data, labeled 'QUAL', but I also included a quantitative sub-analysis, 'quan', as a way of making comparisons between the students in my local data set with the students in the national data set. Additionally, each dataset contained nested data, shown by the image of a box within a box. Data for the national sample were collected prior to my collection of the local sample data, which I indicated with an arrow.

My data analysis process was iterative, which I indicated with the double arrow at the bottom of Figure 3.1. Throughout the data analysis procedure, I considered the results of each of my research questions in light of the results of the others.

Figure 3.1 Sequential Nested Triangulation Design of Mixed Model Research



For example, as I analyzed my qualitative data, I made notations to myself of issues I wanted to explore in my quantitative analysis. Further, as I discovered phenomena that I did not understand in my quantitative analysis, I considered whether I could inform them using my qualitative analysis. I articulate the success of my iterative endeavors in Chapters 4-6. In the subsequent sections of this chapter, I explain the specific methodological techniques I employed to address each of my research questions.

National Sample

Data Sources

I utilized a nationally representative data source, the National Education Longitudinal Study (NELS:88), to address the first two research questions:

- 1a) *How are students' decisions to go to college concurrently influenced by their experiences with their home, school and community social networks?*
- 1b) *Do these experiences influence the type of college in which these students enroll?*
- 2) *How do the structures and social organizations of high schools in rural areas influence the college-going decisions of the students who attend them?*

A United States Department of Education dataset, the NELS:88 database was created to provide trend information about students in the U.S. as they progressed from eighth grade through high school and then to college or work. The data were collected by, and are available from, the National Center for Education Statistics (NCES). To obtain a copy of this dataset, I made an online request to NCES and was mailed the NELS:88 dataset via CD. NELS:88 began with a nationally representative sample of eighth grade students and schools initially surveyed in 1988, and students were resurveyed at multiple time points through 2000. NELS:88 serves as a record of students' educational attainment,

demographic characteristics, social characteristics and behaviors, and school-related experiences. These features make NELS:88 particularly appropriate for this dissertation.

Information represented in the NELS:88 dataset is longitudinal, in that the data come from the same students at five different time points between 1988 and 2000. In 1988, or Base Year, data were collected from 8th grade students enrolled in 1, 222 schools as well as school administrators and teachers. Approximately 23 students were represented in each of a stratified random sample of schools. The 1st Follow-Up occurred in 1990 when most students were in their 10th grade year. In 1992, or most students' 12th grade year, the 2nd Follow-Up occurred. With each wave, researchers “freshened” the data, or “added students who were not in the base year sampling frame, either because they were not in the country or because they were not in the eighth grade in the spring term of 1988”, so that each wave provided a nationally representative sample of students enrolled in the grade year associated with the wave (Ingels et al., 1994).

In each of these three waves, researchers collected data from students, administrators, and teachers. The student data were collected via in-school questionnaires and cognitive tests. The student questionnaires were designed to capture the following: basic background information; students' feelings about their homes and schools; students' academic behaviors, including course taking and extracurricular activity participation; students' aspirations; and students' feelings about themselves. The school administrator and teacher data were collected via self-administered questionnaires. These questionnaires captured information about social relationships within schools (including those between school personnel and students), descriptive information about

teachers and curricula, descriptive information about the student body, and general information about schools' structures, organization, and policies.

These three waves of data illustrated transition trends in the United States for students from 8th to 12th grade, but the data designers also wanted to follow post-secondary trends. As a result, NELS:88 students were resurveyed in 1994 (3rd Follow-Up) and 2000 (4th Follow-Up) to provide data for college matriculation patterns and occupational decisions. Students were again asked to complete questionnaires, but in these waves the questionnaires were designed to capture information about students' post-secondary decisions. The longitudinal nature of these data provide researchers with the opportunity to draw causal inferences about the way that individual factors, such as having positive relationships with teachers in the 10th grade, can influence decisions later in life, such college matriculation (Asher, 1983).

In the following sections, I describe the sampling and analysis procedures I followed using this dataset. Even though I used the NELS:88 database to address questions related to the national sample, the nature of these questions called for the use of different procedures. In recognition of these differences, I divide the remainder of my National Sample Methods Section into student and school samples. The student sample sections describe the procedures I used to address:

- 1a) *How are students' decisions to go to college concurrently influenced by their experiences with their home, school and community social networks?*
- 1b) *Do these experiences influence the type of college in which these students enroll?*

However, the school sample sections describe the procedures I used to address:

- 2) *How do the structures and social organizations of high schools in rural areas influence the college-going decisions of the students who attend them?*

Sampling Procedures and Weights

Student sample. To create my student sample, I initially restricted the full NELS:88 database to students who were enrolled in schools located in rural areas, as defined by the US Census Bureau (n=3,579). I chose to look only within rural areas because I wanted to understand the variation that occurred between students living within them, rather than trying to understand the variation between students living in areas of different urbanicity. Through an investigation of the variation between students residing in rural areas, I was able to begin to understand the wide array of factors influencing their matriculation decisions. As it was these factors I sought to understand, I limited my sample to youth from rural areas.

I further restricted the sample to only those students who had data at the 2nd Follow-Up (n=3569). I chose the 2nd Follow-Up because the majority of students in this wave were in the 12th grade, which represents the educational year that most clearly marks high school graduation and matriculation to college. Additionally, I limited my sample to students who had graduated from high school, as a high school degree is a prerequisite for matriculation to college (n=3130). As a result, students who dropped out of high school between 8th and 12th grade were excluded from my analyses. Finally, I included only those students for whom I had valid data on the final outcome measure, matriculated to college or not. The final student sample I used to address Question 1a included 2,855 students who attended high schools throughout rural America.

NELS:88 data consist of a stratified random sample of school aged youth. In order for me to be able to generalize to a nationally representative sample, I needed to weight my analyses. Weighting adjusts results, so they can be generalized to the entire

population from whence the sample came (Cohen, Cohen, West & Aiken, 2003). Certain types of students and schools were oversampled in the NELS:88 dataset. As a result of this oversampling, researchers who are interested in being able to generalize their results to the national population of students from a given wave must weight their analyses conducted using NELS:88 data. NCES researchers created a number of possible weight variables to be used with NELS:88 data. To determine which weight was appropriate, I considered the span of the data I used.

My outcome measure of interest was college matriculation, which was measured at the 3rd and 4th Follow-Up Waves. Additionally, the independent variables I used spanned Base Year thru the 2nd Follow-Up data waves. Therefore, I used the weight variable F4PNLWT, which is associated with students who have data at Base Year thru the 4th Follow-Up, the waves from which data for this dissertation were used. As I chose to investigate a sub-sample of students from the NELS:88 dataset, 2,855 students from rural areas, I had to normalize my weight variable to preserve the appropriate sample size for statistical testing. I normalized the data weight by dividing it by its mean, creating a weight variable with a mean of 1. As a result, my sample was representative of students attending high schools in rural America, and I preserved appropriate statistical testing.

To address Research Question 1b, “*Do these experiences influence the type of college in which these students enroll*”, I used a slightly different sample than the one I used to address Research Question 1a. As I was only interested in the type of college a student attended, I did not include those students who did not attend college. After excluding those students who did not matriculate to college, my final sample for Question 1b consisted of 1,210 students. Once more, I used the weight variable F4PNLWT when

conducting these analyses. I again divided this weight by its mean, so I could have a normalized weight variable that was appropriate for the different sample used to address this question.

School sample. To analyze my second research question, '*How do the structures and social organizations of high schools in rural areas influence the college-going decisions of the students who attend them*', I had to identify a sample of NELS:88 schools and the sampled students within them. To do this, I began with the same restricted sample I used to address Research Question 1a. As I was interested in learning how high schools informed matriculation decisions, I then further restricted the sample to include only those students who had valid high school identification numbers (n=2,680). Finally, in order to make claims about schools, I needed to have enough students enrolled (or nested) in an individual school that their average assessment of their school was indicative of the school environment and not indicative of the opinions of a very few students. To account for this, I restricted my sample to students embedded in high schools where at least 5 students were represented in the NELS:88 data (n=2,568). My final school sample represented every secondary school in NELS:88, attended by students that met these restrictions, for a total of 252 schools located throughout the country.

Again, I weighted my analyses to account for my sample selection. However, there is no school weight associated with the NELS:88 dataset. So I constructed a school weight variable using the weight F4CXWT. This is the weight variable associated with teacher and administrator questionnaires. Since these questionnaires served as my primary data sources in addressing this research question, it was the most appropriate weight to use. To construct my school-level weight, I aggregated F4CXWT to the school

level and then normalized the aggregate weight, creating a school level weight with a mean of 1. Thus, results for analyses using the schools and students in this nested sample may be generalized to a nationally representative sample of high schools and their students from rural America.

Instrumentation and Measures

Student sample. I considered the findings of my review of the literature when deciding upon the instrumentation and measures I wanted to use for my student analyses. Specifically, I wanted to use measures that captured the following constructs:

- The role student characteristics play in matriculation decisions.
- The familial, academic, and community social networks in which students are embedded, that serve as potential sources of social capital for them.
- Beliefs about normative behaviors held by students' social networks, heretofore referred to as external measures of norms (Portes, 1998).

To do this, I first examined the breadth of measures and instrumentation contained in the NELS:88 dataset, including: student, parent, teacher, and administrator questionnaires, and cognitive tests. The vast majority of data I chose to analyze for the national student sample came from student questionnaires and cognitive tests, in 1990 and 1992, or when most students were in the 10th and 12th grades. The questionnaires were self-report surveys that took approximately one hour to complete. The cognitive test items included “word problems, graphs, equations, quantitative comparisons, and geometric figures” (NCES, 1994)⁴.

I chose to analyze these data because students were asked an assortment of items including questions related to: their desires for the future; the behavior of their social networks; the behavioral expectations their social networks held for them; and social

relationships that could lead to the possibility of information sharing^{5,6}. I used the same independent variables to address Research Questions 1a and 1b. Below, I describe the items I included to measure each of these categories and my justification for using each.

Demographic and achievement measures. Of particular interest to me was identifying the factors that helped to explain the college-going of students whose parents did not go to college and how social capital may have influenced their chances of matriculation. Thus, parents' highest level of education served as my primary variable of interest in this analysis. Regardless of social capital or social networks, researchers have found that demographic characteristics are typically associated with matriculation patterns. Considering the robustness of these characteristics, I assessed a variety of basic demographic indicators: family income, gender, and race. Furthermore, student achievement, especially in mathematics, is one of the strongest predictors of college matriculation (Chenoweth & Galliher, 2004; Jaccard, 2001; Khattri, Riley, & Kane, 1997; Rojewski, 1999; Yan, 2002). As such I also controlled for students' mathematics achievement in the 12th grade.

External measures of norms. In order to explore the association between norms and college-going, I wanted to understand whether social networks thought that going to college was acceptable for youth from rural areas. To accomplish this goal I considered two categories of concepts: 1) the matriculation behaviors of individuals within a student's social networks, namely his or her peers; and 2) the expectations parents had for a student. Students get cues from their social networks about what is and what is not considered "normative" behavior. These cues serve as a binding mechanism that keep communities ordered and productive (Coleman, 1988). In the case of educational

attainment, the post-secondary decisions of important network members serve as a cue for expected behavior. Thus, I measured the post-secondary plans of 12th graders' peers (Choy et al., 2000; Cooper, 2002; Hansen & Ross, 1980; Sewell, Haller, & Ohlendorf, 1970; Teachman, 1987; Yan, 2002; Yang, 1981).

I also used the post-secondary expectations of familial networks as a proxy to understand what behaviors parents found to be acceptable. My initial decision to use parents' expectations this way was a result of the iterative process I used to analyze my quantitative and qualitative data. Both my qualitative findings and my review of the literature, prompted me to believe that parents' provided the foreground for students' understandings of behavioral norms. This makes sense, as norms are essentially behavioral expectations held by others for an individual who is a member of his or her social network (Coleman, 1988; Portes, 1998). Following this argument, students who understand that they are expected to go to college are more likely to attend. Thus, I measured students' self-reports of the post-secondary expectations their parents had for them.

Measures associated with potential sources of information sharing. Students may also be able to increase their potential social capital through information sharing. In rural areas, relatively few individuals have a college education (Blackwell & McLaughlin, 1998; Yan, 2002). Therefore, students may have to rely on network members beyond the students' familial social networks for information about college. To capture the influence of these potential sources of information, I considered the role school personnel and extracurricular participation could potentially play in increasing the

likelihood that students would be provided with access to information about higher education. I discuss each source in the following paragraphs.

One of my indexes of information sharing was the receipt of college counseling from teachers and guidance counselors. Here I measured whether students were advised to go to college by: their guidance counselors, their favorite teachers, or both counselors and teachers. This measure directly captured to the notion of information sharing because the school personnel explicitly provided information about college to students.

Moreover, I measured a potential source of information sharing through positive student-teacher relationships. This construct is central to the concept of social capital - - the quality of relationships between people influences individuals' abilities to obtain something desirable (Coleman, 1990; Dornbusch, Flaggow, & Lin, 1996). In the case of college matriculation, positive relationships with individuals could increase students' chances of going to college, especially when those individuals provide students with pertinent matriculation-related information. Hence, I created a measure of students' assessments of their relationships with teachers. I could have looked at the relationships between students and a variety of network members (i.e. peers, community members, etc.). However, I wanted to know whether individuals were able to provide social capital relative to college-going. I had no way of knowing whether other network members had gone to college. As a job requirement, though, all teachers have obtained at least a Bachelor's degree, and thus can provide students with intimate knowledge about college. Therefore, I narrowed my assessment of information sharing through positive student-teacher relationships. I could not assess a direct link between positive student-teacher relationships and information sharing in the quantitative data because there were no

measures concerning the nature of these relationships. However, I did address the nature of these relationships in my qualitative analysis, and it is because of those findings that I have included these relationships as potential sources of information (see Chapter 6).

I also decided to explore the influence of an interaction term associated with this measure. Relationships with individuals outside of one's immediate social networks (i.e. family and close friends) are especially important for the matriculation of youth who are embedded in immediate social networks where college-going is not the norm (Granovetter, 1974; Burt, 1997). Thus, I created an interaction term between parents' level of education and positive student-teacher relationships. This interaction allowed me to consider whether having positive student-teacher relationships had a different association with college matriculation based on parents' education. Following the argument put forth above, I expect that positive relationships with teachers would be more important for the matriculation of youth whose parents have not gone to college.

Furthermore, I assessed a potential source of information sharing through the proxy measure of student participation in extracurricular activities. Although I had not originally conceived of extracurricular participation as a source of information sharing, my analysis of the local sample, revealed that these activities provided interviewed students not only with an entre into a world outside of their communities, but also with opportunities to create weak ties with individuals outside of their social networks. Through my qualitative analysis I was able to explore whether these opportunities might be pivotal to the matriculation of students. Thus, I decided to investigate whether a similar pattern existed among students nationally. Although I cannot directly measure the idea that extracurricular participation resulted in information sharing in the

quantitative data alone, I use the qualitative data to examine *why* and *how* extracurricular participation came to be important for college-going.

Students' goals and expectations. I also wanted to gauge the way students' decisions were influenced by their own goals and expectations. Students' matriculation ought to be associated with their educational expectations. Thus, I measured both students' educational expectations and their beliefs about the education they will need for their desired career.

Similarly, I believe that students' academic behaviors, including their course choices and whether they take college entrance examinations, can be signs of the expectations they hold for themselves. "Enrollment in postsecondary education represents the culmination of a process that typically begins years earlier" (Choy, 2001; pg. 9). When students expect to go to college, normative behaviors within this process include taking rigorous courses. Since taking advanced mathematics in high school is the strongest curriculum predictor of graduating from a 4-year college, I decided to examine whether enrollment in advanced mathematics courses is associated with the matriculation of youth from rural areas (Adelman, 2001; Mann, 2005).

I was, however, also interested in determining whether students' desires for the future were inconsistent with college-going. Students from rural areas may adhere to a unique system of norms that is consistent with the theory of ruralness (Bauch, 2001; Budge, 2006; Haas & Nachtigal, 1998). In an effort to encapsulate this theory, I wanted to take students' desires for the future into account. Specifically, I wanted to assess how connected students feel to their community with a measure of how important it is for them to live near their communities and families, and what is important to them - -

financial security, or family and friends (Hektner, 1995). I expected to find that students who feel more connected to their communities and families are less likely to matriculate than those who feel less connected (i.e. their sense of ruralness is stronger). A complete list of the variables I used to address Research Question 1a is found in Appendix B.

Outcome measures. The outcome measures of interest for the national student sample are dichotomous ‘yes’ or ‘no’ variables, *matriculated to a 4-year college or not*, and *matriculated to an elite or a non-elite 4-year college*. I chose to explore matriculation to a *4-year college* in this dissertation because researchers have found that matriculation to a 4-year college most clearly marks a transition from traditional rural job markets, which are currently shrinking, to job markets based more closely on education attainment (McGrath, Swisher, Elder, & Conger, 2001; Whitener, 2005).

I needed to create an elite college outcome to address Research Question 1b. To accomplish this, I used a list of the colleges attended by my sub-sample of 4-year college students, which was included in the NELS database. I coded the institution names using the most competitive⁷ and highly competitive⁸ categories identified by the Barron’s Guide of 2001, which created these rankings based on the time the students in the NELS:88 sample were in high school (Barron’s Educational Series, 2000). The Barron’s Guide has been used by other researchers using NELS:88 data, who are also interested in defining elite colleges (Carnevale & Rose, 2004). The elite list includes both private and public higher education institutions.

School sample. To address Research Question 2, ‘*How do the structures and social organizations of high schools in rural areas influence the college-going decisions of the students who attend them*’, I utilized 1st and 2nd Follow-Up data from both the

administrator and student questionnaires. The administrator questionnaire included information about the demographic, social, and structural characteristics of high schools. One administrator in each school completed a questionnaire and every school represented in this sample had available school questionnaire data.

Outcome and demographic measures. My outcome variable of interest was again the college matriculation measure that I created (a dichotomous variable measuring “matriculated to a 4-year college” or “did not matriculate to a 4-year college”) from the 3rd and 4th Follow-Up waves. In addition to basic student demographic control variables, I included measures associated with schools in this analysis. I investigated both demographic characteristics of schools (as controls), and social and structural variables related to high schools. I measured constructs associated with high school social networks and academic organization, so I could understand whether the context of the high school was conducive for providing social capital based on norms and information sharing.

Academic organization. The academic organization of a school can serve as an indicator of the norms held by the school administrators and the study body. This may be particularly true of schools in rural areas because they are often so small that they have to make choices about the types of courses they are going to offer. These choices are influenced by: school size, the needs of the student body, and the qualifications of teachers (Lee, et al., 2000). Historically, rural schools have resisted advanced academic curricula and instead encouraged vocational curricula (DeYoung, 2002; McDermott, 1997). This is an indication that the school values training students for immediate entry into the workforce after high school (DeYoung, 2002). Offering a rigorous academic

curriculum, on the other hand, communicates to students that academics are important and that college matriculation is an option (Burnell, 2003; Chenoweth & Galliher, 2004). I wanted to determine how these norms influenced the matriculation decisions of the students who attended them. To accomplish this, I modeled the presence of academic indicators within high schools, such as, the presence of a Calculus course⁹ and the presence of a vocational curriculum.

Academic networks and school structure. Additionally, I measured the way that school structure and the social organization of schools can serve to increase or decrease opportunities for information sharing. Again, these measures do not capture whether information sharing took place. Rather, they measure the degree to which there was an opportunity for information sharing. To do this, I included: a measure of whether guidance counselors encouraged the schools' students to go to college, a measure that assessed the relationship between the student body and teachers, and a proxy measure of school size. I included this later measure because researchers have debated whether students in schools of varying sizes have access to a variety of teachers who are able to provide them with diverse thoughts and information (Lee & Smith, 1997). To see a complete list of the variables I used to address Research Question 2 and how I created them, please see Appendix B.

Analysis Procedures

Student sample. I began my investigation of the national sample using cross tabulation and ANOVA analysis of the NELS:88 database (Hartwig & Dearing, 1979).

My first research questions for analysis were:

1a) *How are students' decisions to go to college concurrently influenced by their experiences with their home, school and community social networks?*

1b) *Do these characteristics influence the type of college in which these students enroll?*

In order to address the primary question I used binary logistic regression. This type of analysis is the preferred way to model a dichotomous 'yes' 'no' outcome, such as the one I used here (Cohen, Cohen, West, & Aiken, 2003)¹⁰.

I entered the independent variables in blocks that seemed to me to be conceptually similar, so I could determine the impact the variables in each category have on students' decisions to go to college. This design most appropriately tested my theory that students are influenced by several social networks that work in conjunction to inform college matriculation decisions. The first block included parents' level of education, my primary independent variable of interest. I then added variables, according to temporal precedence, in the following conceptually similar variable blocks: demographic information, educational expectations, community connections, peer networks, academic behaviors, and academic networks. All of the variables entered in these blocks were main effect variables. That is, I was interested in the effect of each variable on college matriculation, holding constant the effects of the other variables. Considering each of these areas, my final model included 7 groups of conceptually similar variables¹¹.

Unfortunately, I was not able to use this type of regression to address Research Question 1b because there were very few students from rural areas who attended elite institutions and even fewer first-generation students. Thus, I was not able to accurately predict what experiences influenced the types of colleges students' chose to attend using

a regression analysis. Creating a continuous outcome of ranked colleges was not an option because many of the colleges the students attended were not included on traditional college rank lists (Barron's, 2001). Therefore, my results for the sub question, "*Do these experiences influence the type of college in which these students enroll*", were restricted to less elaborate multivariate techniques: cross-tabulation and ANOVA (Hartwig & Dearing, 1979).

School sample. My second research question was:

2) *How do the structures and social organizations of high schools in rural areas influence the college-going decisions of the students who attend them?*

I used hierarchical linear modeling (HLM) to address this multilevel question (i.e., How do characteristics of schools influence the students within them?). HLM is an analysis technique that is used when researchers have nested data and are interested in understanding the influence that this nesting has on a given outcome (Raudenbush & Bryk, 2002). HLM was appropriate to use here because I was interested in understanding the way that schools' organizations and structures influenced the matriculation of rural youth. One of the assumptions of traditional regression techniques is that observations, in this case, students, are independent of one another. This means that there is not a relationship between one student and another student in the sample. However, the NELS contains data about multiple students in the same high school. It may be that characteristics of individual high schools contribute to whether or not the students who attend them go to college. HLM allows me to assess whether or not such relationships exist¹².

Extant research supports the notion that students' matriculation decisions are related to the high schools they attend (Chenoweth & Galliher, 2004; Perna, 2000; Plank

& Jordan, 2001; Yan, 2002). Therefore, schools play an important role in the college matriculation of youth. For this reason, I wanted to determine the relationship between school structures and social organizations on students' matriculation decisions, taking into account their own characteristics and personal social networks. HLM allowed me explore this basic multilevel question. In cases where researchers are interested in using HLM with a dichotomous outcome, they need to employ Hierarchical Generalized Linear Modeling (HGLM).¹³

I used a two-level HGLM model, with students nested within schools. At Level 1, I estimated, within individual schools, the relationship between student characteristics and the odds that a student will go to college. At this level, researchers have to make decisions about which independent variables (in this case student characteristics) should be estimated as fixed effects and which should be estimated as random effects.

Estimating a student characteristic as a fixed effect means that I assumed the relationship between that characteristic and the odds of matriculation did not vary between schools.

In fact, I fixed this variance to zero. I fixed three student characteristics in this analysis: gender, race and Algebra enrollment. I included gender and race as control variables. I included Algebra enrollment because math enrollment is a strong predictor of college matriculation college matriculation (Adelman, 2001; Mann, 2005).

I also estimated parents' education as a random effect, by group mean centering the variable and associating an error term with it. This means that I allowed the relationship between parents' education and college matriculation to be different based on the school the student attends. In so doing, I had two outcomes at this level: college matriculation, and the relationship between parents' education and matriculation.

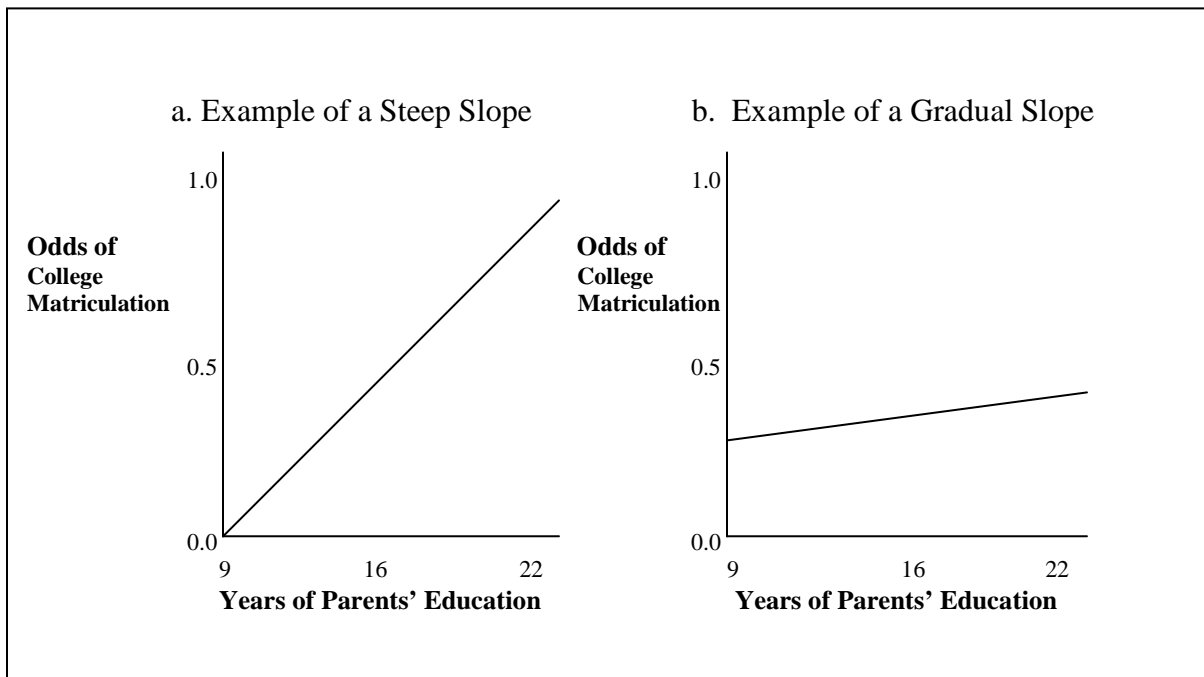
I modeled the relationship between parents' education and matriculation in each school (the slope parents' education and matriculation) because throughout all of my analyses, I have been interested in understanding the matriculation of students who are unlikely to go to college, namely students whose parents have not gone to college. Modeling this relationship as an outcome allowed me to determine whether certain schools were better able to mitigate the negative relationship between having less-educated parents and the likelihood of going to college.

When researchers model slopes, they look for, among other things, whether or not the slope is significantly related to characteristics of schools (i.e., the social organization of schools), and the angle of the slope on this outcome. In this instance, if the slope is significant that means that, in terms of college-going, certain schools privilege students whose parents have higher levels of education in the matriculation process. In Figure 3.2 I have graphically displayed slopes with different angles. Slopes that are steeper (Graph a) indicate more substantial inequities in the odds of college matriculation between schools, based on the number of years their parents have gone to college. Gradual slopes (Graph b) indicate that the relationship between matriculation and parents' education is less important. These slopes may be a function of school factors, therefore, researchers often attempt to assess whether school characteristics help to explain these relationships.

In my Level-2 model (between schools), I investigated how characteristics of schools helped to explain my outcome measures: school average college matriculation, and the relationship between parents' education and college matriculation¹⁴. At this level, I included control variables associated with schools, so that I could account for the context of schools (Raudenbush & Bryk, 2002). Of particular interest to me, though, was

the relationship between my outcomes and the several measures associated with schools' structures, and academic and social organizations, that I described earlier. School average college matriculation was adjusted for all of the fixed effects student-level characteristics modeled in Level-1.

Figure 3.2 Interpreting the Angle of Slopes, Relationships that are More and Less Equitable



My Level-2 model included a series of interaction terms between school size and both the academic and social organization of schools. These interactions tested the hypotheses put for by researchers interested in rural school size, which I outlined in Chapter 2. To assess whether the effect of schools' social and academic organizations were different in schools of different sizes, I computed a series of product terms between school size and these organizational measures.

Further, in this model, I wanted to see if I could identify characteristics of schools that helped to explain the relationship between parents' education and college

matriculation. I thought that students with less educated parents may be better able to receive advice about their futures, in schools which had more positive social organizations, because they would be more likely to have relationships with a variety of teacher in such an environment. I should note that I cannot determine the nature of these relationships through this analysis. In other words, schools with positive social organizations may provide students with information about college, but they may also provide students with information about work. However, results from my national student analysis led me to believe that the social organization of schools could have a mitigating effect on the relationship between parents' education and college matriculation. Thus, I modeled average student-teacher relationships on the slope of parents' education and college matriculation, so I could determine whether schools, which had positive social environments, affected the relationship between parents' education and college matriculation.

Through my HGLM analysis I was able to identify school characteristics, and particularly organizational characteristics, that were important to the college matriculation of youth from rural areas. I z-scored all continuous variables at the student and school levels, to be able to talk about these variables in terms of the same unit and also to get a meaningful zero in their distribution. I dummy coded all categorical variables. A list of these variables can be found in Appendix B.

Local Student Sample

I used the national sample (NELS:88) to identify a pattern of behaviors and experiences that helped predict the college matriculation of students from rural areas. However, my intent was not only to identify this pattern, but also to understand *how*

students made sense of their experiences and behaviors and *why* these may influence college-going. This desire was represented in my third major research question, “*What are the processes by which homes, high schools, and communities affect these students’ decisions to enroll in an elite college*”?

To address this question, I felt I needed to provide students the freedom to speak about their own experiences related to college matriculation. The best way for me to accomplish this was through in-depth interviews with individual first-generation college students from rural areas, especially those enrolled in an elite institution. I chose to interview this group of individuals because first-generation youth and youth from rural areas are less likely than their counterparts to attend elite institutions (Karen, 2002; Lillard & Gerner, 1999; Massey, Charles, Lundy, & Fisher, 2003; McDonough, 1997; Owings, 1998). I believed that students from this population who had matriculated might be able to provide unique insights into the types of social capital - - in the form of norms and information sharing - - that would be most useful for future students interested in college-going.

Students enrolled at the University of Michigan represented an ideal sample from which to recruit subjects. Michigan is home to many rural areas; as of 2008, almost 2 million people lived in rural Michigan (Parker, 2009). The education levels of these residents lag behind their urban Michigan counterparts, with 15.8 and 23.1 percent completing college respectively (Parker, 2009). Further, the unemployment rate in Michigan is not only higher than the national average, but it is also higher in rural Michigan areas than it is in suburban or urban areas (Parker, 2009; US Bureau of Labor, 2009). Increased educational attainment is associated with lower unemployment rates.

Thus for employment procurement alone, it is particularly important for students in rural Michigan to go to college. To that end, I decided to interview a local sample of students from rural Michigan who were enrolled in an elite institution: the University of Michigan (Barron's Educational Series, 2000). By soliciting their "stories" I was able to uncover how and why some of the items captured in the national study could become important for college matriculation, particularly in regard to social capital in the form of norms and information sharing.

Identifying the Rural Sample

Before I could collect data from my local Michigan sample, I first had to identify who the rural Michigan students were. To do this, I used a list created by the State of Michigan government that included all rural Michigan counties (see Appendix E). I then identified all of the zip codes within each of these rural counties using the Michigan Department of Information Technology's "Zip Code Boundary Maps".

Although the counties identified in Appendix E are considered to be rural, the State of Michigan, using the U.S. Census definition, has only designated thirteen of them as 100% rural. As a result, the list of zip codes I created using the boundary maps included zip codes of individual areas that would and would not be considered rural. To eliminate those areas that would not be considered rural, I entered each individual zip code into the Census 2000 population finder. If the individual zip code met the Census standard of rural, I retained it. If not, I deleted the code from my list. This left me with a final list of 305 rural Michigan zip codes. I used this final list of zip codes to identify rural Michigan students enrolled at the University of Michigan.

Bridging the Local and National Samples

In order for me to make comparisons between an interview sample of students enrolled at the University of Michigan during 2008 and the national sample of NELS:88 students who were undergraduates in the 1990's, I had to determine whether these groups were comparable. Specifically, I had to determine whether the students enrolled in the University of Michigan were comparable to the national sample of students attending elite colleges. When I raised this concern with my dissertation committee, Dr. Deborah Carter suggested that I consider the data from the Cooperative Institutional Research Program (CIRP) to bridge the information I garnered from my national analysis to the population at the University of Michigan.

Data Source and Sampling Procedures

CIRP is a national study of higher education institutions in the United States. The American Council on Education began this study in 1966, individual institutions opt whether or not to participate. Each year, freshman at the University of Michigan complete the CIRP questionnaire, which includes survey questions similar to those in the NELS:88 data about family background, high school experiences, expectations, and aspirations.

The Office of Student Affairs Research at the University of Michigan provided me with CIRP data for students attending the University from 2003-2007. I provided the office with the list of rural Michigan zip codes that I had created and they agreed to limit my sample to those students who matriculated from an area represented by a zip code on the list. In total 448 students entered the university from rural Michigan during this time, 86 of whom were first-generation college-goers.

All told, there were 23,107 incoming freshman during these 4 academic years, meaning that just under 2% of incoming freshman during these 4-years were from rural Michigan (University of Michigan, 2008). I should note that the 2% represented in this sample only include students from rural *Michigan*; there could be additional students who entered the university at this time from rural areas outside of Michigan. However, because of the way the surveys were collected, I could only identify rural areas through zip codes. Given time and human resource constraints, I thought it was unrealistic for me to repeat the rural state zip code identification process I described earlier, forty-nine more times, in order to create a list of all of the zip codes of every rural area in the country.

CIRP Instrumentation

CIRP data are collected and managed by the Student Affairs Research Office at the University of Michigan and nationally it is collected and managed by the Higher Education Research Institute (HERI) at UCLA. The survey itself is created each year by HERI. Between academic years, the CIRP questions may change slightly, but generally they remain the same. In addition to the questions asked at all colleges, the University is able to add questions of particular interest.

The instrumentation used in this study was a self-report survey of about 50 items given to all incoming college freshmen before they began classes at the University. It was administered during students' registration period. In addition to demographic information, the questionnaires included constructs outlined in my conceptual model, including: expectations and aspirations, academic behaviors, social networks, and the structural and social organization of high schools (HERI, 1985).

CIRP Analysis Procedures

The utility of the CIRP dataset for this study rests in its similarity to NELS:88. In order to draw comparisons between my local and national samples, I had to establish whether and in what ways the interviewed students at the University of Michigan were representative of all first-generation rural students at the University of Michigan. I also needed to establish whether, and in what ways, the rural students enrolled at the University of Michigan were comparable to the elite college-goers in the NELS:88 database. To make these comparisons I looked at frequencies for variables, outlined in my conceptual model, that were shared between datasets. With these comparisons, which I discuss in Chapter 6, I examined the ways that my national and local samples were and were not equivalent, setting the foreground for my interview analysis.

Interview Sampling Procedures

Students within the CIRP dataset were identified by numerical code only. As a result, I could not use CIRP data to identify individuals that I would interview to address my research question, *“What are the processes by which homes, high schools, and communities affect these students’ decisions to enroll in an elite college”?* In order to acquire the names of students enrolled at the University who attended high schools in rural Michigan counties during the 2006-2007 school year I had to utilize the Freedom of Information Act¹⁵. The Freedom of Information Act (FOIA) requires public universities to provide the names and contact information for each of their students. Each university keeps records on its students, including the counties of the high schools they attended. I made a formal request to the University of Michigan FOIA Office, providing them with a list of counties designated as rural by the U.S. Census as well as the list of rural zip

codes. Accepting my request, the FOIA Office provided me with a compact disc that included the names, permanent addresses, and enrollment year of every student enrolled in the University that came from the zip code list I provided. I narrowed the list to include only undergraduate students, as the information I received from undergraduates would be more timely and accurate, than information from graduate students. This resulted in a list of 458 students enrolled in the University who attended a rural Michigan high school.^{16,17}

The information given to me by the University did not include e-mail addresses, local addresses, or telephone numbers for the students. As a result I did not have access to any of the students' Ann Arbor information. I did not believe that I would have much success recruiting participants by sending a letter to their parents and hoping their parents would pass that information along to their child who would in turn contact me.

Therefore, I individually searched for each student identified in the FOIA list using the University of Michigan's on-line directory. The directory provided me with e-mail addresses for 374 of the 458 students identified by the FOIA request. Of the 90 students whose e-mail address I could not find, 81 of them were seniors during the 2006-2007 academic year. It is likely that their information was no longer available through the directory because they had graduated by the time I searched for it. I cross-checked the names of the students with their enrollment year to help ensure that I had acquired the appropriate e-mail address.

I employed criterion sampling in this study by including all students who met the criterion for participation (Patton, 2002). In this instance, all students met the following criteria: from a rural Michigan area, attended the University of Michigan, and are first-

generation college-goers. Criterion sampling was also relevant for this study because the number of students who met each of these three criteria was small enough to make it manageable to include all students who were able and willing to participate.

To recruit students I sent a mass e-mail to every undergraduate student identified in the FOIA request (see Appendix F). In this e-mail, I informed the students that I was conducting research related to the college matriculation of rural youth and that I was interested in interviewing students that met the study's criteria. I included the participation criteria in the e-mail, specifically, that the student had to be among the first-generation in his or her family to get a college education and that he or she had to be from a rural area. I received a delivery status failure message for twenty four of the e-mail messages I sent¹⁸. Upon receipt of these e-mails, I double checked the directory to see if I had correct e-mail addresses - - I did. So, I eliminated these students from my sample, leaving me with a possible sample of 350 students.

I received a total of 104 e-mail responses. Only nine of those responses came from students who fit the study criteria. In an effort to increase my sample size, I sent an additional e-mail to all of the students who did not respond to the original e-mail and this time included an incentive of \$20 to reimburse them for their time. Incentives are frequently used in research to increase sample participation, and in this case this inclusion was somewhat successful (Grant & Sugarman, 2004). Upon sending the second e-mail, I recruited an additional four students.

I attempted to employ snowball sampling by asking the recruited students if they knew of any other first-generation college student from rural Michigan (Weiss, 1994). Unfortunately, although most knew other students from rural areas, none knew other

first-generation students from rural areas. Using these techniques, I was able to identify and interview 13 students, four male and nine female. These students were sophomores, juniors, or seniors enrolled in the University of Michigan during the 2007-2008 school year.

There could be a variety of reasons that I did not hear from more students. Of the 350 students who received an e-mail, 81 were seniors in the 2006-2007 school year. Since I sent this e-mail during the 2007-2008 school year, it is likely that many of these students had graduated by the time I requested their participation. Another reason could be that students at the University are inundated with requests to participate in research. They could become numbed to these requests; many may have simply deleted the e-mails or not been interested in participating. It may have also been that the students who chose not to respond had more hectic schedules and could not fit in an interview. It may be that this group of students worked in addition to going to school. Indeed, each of the interviewed students was employed in at least one job. Additionally, my e-mails may not have been enticing or eye catching enough to elicit more students to participate.

In retrospect, I should have conducted another University directory search for those students who did not respond to my e-mail messages and compiled a list of telephone numbers for them. I would not have been able to get current local telephone numbers or addresses on all of the students because many choose to withhold their personal information from the University on-line directory; moreover, residential information tends to become outdated in transient populations. However, it is likely that I would have been able to find information for many of them, and may have been able to increase my local sample size in the process.

Interview Instrumentation

To address my third major research question, ‘*What are the processes by which homes, high schools, and communities affect these students’ decisions to enroll in elite colleges?*’, I completed individual, structured, open-ended interviews with each of the 13 participants over the course of the winter 2008 semester. I used interviews in this study because I wanted to understand how the interviewees perceived that these experiences influenced their decisions to matriculate to one elite university (Patton, 2002; Silverman, 1993; Weiss, 1994). I then followed up with some interviewees if I had questions about what they had said in the original interview or if I wanted more information from them. These follow-ups took the form of e-mail messages and phone calls.

The interviews were designed to identify factors in the students’ lives that were influential in their college matriculation and enrollment decisions and to explore how and why these factors were important to them. This type of information could only be gathered from interviews, as it required personal knowledge of how the student had internalized and experienced these influences. Open-ended questions allowed students to provide in-depth information about their own experiences, perceptions, and feelings about what they believed influenced their college matriculation. Additionally, this type of interview provided me with insight into how students’ other life experiences may have influenced their matriculation decisions (Denzin, 1989; Patton, 2002).

Interview Measures

Within the interviews I wanted the freedom to follow the ebb and flow of the conversations, and at the same time retain the ability to make comparisons across

interviews - - which necessarily meant that each needed to cover similar content.

Therefore, I developed and adhered to a structured interview guide. These are useful tools because they help ensure that the primary areas of investigation are consistently addressed in each interview (Patton, 2002; Weiss, 1994). I used the guide as a sort of check list to make sure that I asked all of the students questions related to the same topics, and that the order and wording of those questions was similar (if not identical), to reduce possible bias.

In creating my interview guide, I thought about the following issues:

- My interview questions needed to be connected to my overall theoretical framework of social capital. I was especially interested in providing students with the opportunity to discuss the ways that each of their social networks (home, school, and community) influenced their decisions to matriculate.
- I wanted students to be able to tell their own story first, without leading from me. By letting them guide the interview, I was able to see what factors the students emphasized providing me with insight into how they made sense of their matriculation.
- I did not necessarily want to elicit a chronological narrative from the students. Instead, I wanted my questions to be ordered in important conceptual groups that were tied to the literature, namely students' social networks and academic behaviors. These groups also overlapped with the conceptual groups in my national analysis, so I could make comparisons between the national and local samples.

Keeping these three ideas in mind, I turned to the literature to see what groupings of questions I wanted to include in my interview guide. Ultimately, I determined that I needed to have four question clusters. The first grouping dealt with students' familial networks, including their parents, siblings, and other important family members. With this cluster I wanted to understand among other things, what students perceived the norms of their families were and how they made sense of those norms. I also wanted to ascertain what information their families provided them relative to college-going.

The second set of interview questions was related to the role of academic networks in college-going. Here I wanted to know about two different phenomena. One was students' academic behaviors. I sought to analyze how students discussed their own behaviors. Did they, for example, talk about purposefully seeking out academic opportunities that would put them on the road to college? Within this cluster I also wanted to explore why and how relationships with school personnel and peer networks came to be important for these students' matriculation.

In my third cluster of questions, I asked students about their non-familial community social networks. My goal with this line of questioning was to see whether Burt's (1997) notion that individuals outside of students' immediate social networks can be essential for knowledge about college when the students are otherwise unable to gain this information. I also kept the notion of ruralness in mind when creating my questions; hence, my fourth set of questions dealt with the connectedness students felt toward their communities.

Once I established these four topic areas, I created questions I believed would elicit student responses that shed light on each area (Patton, 2002; Weiss, 1994). I have included a few examples of these questions below. The first bullet point represents the question I used to initiate each interview. This question was consistent with my desire to allow students the opportunity to tell their own story without me imposing my theoretical framework on them. The subsequent questions were more directly tied to my interest in social capital's role in college-going.

- I want to start off with you imagining that you are writing a book about your life. In this section of the book, you want to tell your readers about how you go to college. What would you tell them?

- What did your parents tell you about college?
- Does anyone we haven't already talked about stand out to you as being particularly important in your life? If so, who and how?
- What do you think you would have to do in order to be considered successful in your community?
- What are your goals for the future?

I did not necessarily ask every question within my four topic areas because certain questions were appropriate for some interviews but not appropriate for others (Weiss, 1994). Further, I found that many issues I outlined in my interview guide were addressed when students responded to my initial interview prompt.

I pilot tested my interview protocol with four undergraduate students enrolled in the University in the winter of 2008. The students were evenly divided male and female. Pilot testing is frequently used with interview analyses to help control the quality of the questions being asked and the length of interview time. I was particularly concerned with ensuring that the questions adequately elicited discussion around college-going and that the interviews were around one hour in length. Based on these pilot interviews, I rephrased or removed some of the interview questions to meet my objectives. A copy of the final interview guide can be found in Appendix H.

Interview Administration

There are a number of ways to reduce bias in qualitative research outside of creating standard interview protocols. One of these is to increase students' comfort during the interview (Patton, 2002). I employed a number of techniques to help ensure that the students were comfortable during the interviews. The first of these was that I conducted all interviews myself. As the researcher, I was less than ten years older than

all of the respondents. My age similarity helped the students feel as if they were speaking with a peer rather than an older authoritative figure. I dressed in casual clothing, blue jeans, sweater, and boots, to further put the respondents at ease. Through e-mail correspondence, I also identified myself as being someone who grew up in a rural area so as to help students feel as if they were speaking to someone similar to themselves (Mauthner & Doucet, 2003; Song & Parker, 1995).

Finally, I asked the students where they would be the most comfortable meeting for the interview. Two students preferred to meet in a private room off of the North Campus Library at the University of Michigan. One asked to meet in his own office, and the remainder requested meeting in local coffee shops. In the latter case, I reserved a secluded table in the coffee shop for the interview, so the students did not have to be concerned with being overheard by other patrons.

All primary interviews were audio taped for two reasons. The first was to ensure that I had an accurate record of the interview. The second was so I could follow the pattern of the interview without being concerned with trying to write down the students' responses. As suggested by other researchers, I was concerned that the seemingly simple act of writing would interfere with the natural flow of the conversation and may lead to a less natural and more stilted interview (Patton, 2002; Weiss; 1994). Every participant signed a consent form agreeing to be audio-taped (see Appendix G). On this form they also provided their telephone numbers and permanent addresses, so I could contact them for follow-up interviews.

The follow-up interviews were either conducted via e-mail or on the telephone during the summer of 2008. I chose not to engage in face-to-face follow up interviews

for two reasons: 1) I found that I did not need much additional information from students, so their e-mailed response or a telephone call was sufficient; and 2) many of the students had moved by the time the follow-up interviews took place. When I conducted a follow-up interview, I had a specific list of questions I was interested in having the student address. The questions differed depending on the student, as the follow-up interviews were designed simply to clarify things that did not make sense once the interview was transcribed and to respond to any unaddressed or forgotten questions. I did not audio-tape the phone interviews. Instead, I typed students' responses to my questions as we talked. I included these responses as addendums to my transcribed interview files.

Interview Analysis Procedures

I used interview transcripts as the data source for my third research question. I began my data analysis by open coding my interview transcripts. That is, I scrutinized each interview and coded for any and all theoretical categories I saw within the text (Strauss, 1987). Since social capital was the guiding framework of my dissertation, I noted its influence during my open coding process. As such, the initial categories of codes were reflective of the following broad thematic categories identified in the literature as being salient for college-goers from rural areas:

- Student Desires- This included their occupational and educational aspirations and expectations as well as their general desires for the future.
- Ruralness- This contained students' descriptions of and relationships with their rural community.
- School Structure- This category was comprised of the students' reports of academic opportunities and constraints as well as their academic behaviors.

- Social Networks- In this category I included students' comments about the significant others in their lives (kin and non-kin).

Although I let the literature guide my creation of these categories, I also tried to be sensitive to where the data led me. I did not want to open-code with tunnel vision, thinking only about prior literature. So I also developed theoretical categories that were not necessarily evident in the literature. These included:

- Defining Moments- Identified as any time the student talks about a life event (conversation, travel experience, tragedy, etc.) that shaped the way he viewed his future.
- Motivation – Students' comments about why they perceive they have set their goals the way they have.
- Differentiation of Self- The student's assessment of why she is unique and how she experiences that uniqueness.

I followed Strauss and Corbin's (1998) technique for creating codes and sorting data. Using the MAXQDA Qualitative Data Analysis Software, I went through each individual interview transcript and sorted text segments into categories. I then compared all of the data within an individual category across interviews. During this process I used memos to help me conceptualize and develop theories about my categories (Strauss & Corbin, 1998). In these memos I remarked on various phenomena that occurred within the category such as the conditions, strategies, and consequences of actions (Strauss, 1987). I created codes and sub-codes within each category based on the themes that surfaced from these memos.

For example, I extracted the data sorted into the 'defining moments' category for all of the 13 students. I analyzed the data in this category to see what conditions needed to be satisfied in order for students to identify something as a defining moment (e.g.,

exposure to higher education, moment they identified themselves as being different, moment they realized they could be successful), and then created codes within the category to reflect these conditions. I compared these types of moments to determine whether students attributed different consequences to them (i.e. exposure to higher education led to information sharing about the college process, being different led to a rejection of the community). I then explored how these consequences impacted students' ability and/or desire to go to college. In this way I was able to consider whether certain types of defining moments were more salient in facilitating higher education enrollment than others based on students' reports (see Appendix I for coding scheme).

As I analyzed my qualitative data I realized that I had a clear and situated perspective in my analysis of student interviews, and any portrayal of their life stories would be inaccurate if I did not take my own perspective into account. I did not believe that students' made the decision to go to college in a vacuum. Rather, I believed their behavior was a product of the interactions they had with other individuals and with their environment (Attinasi, 1989; Mauthner & Doucet, 2003). Further, even though I privileged what the students reported, I did not believe that students were necessarily able to identify all of the factors that influenced them to go to college. As a result, rather than simply repeat what the students had reported to me, I interpreted their statements in light of others they had made, my national analysis, and the work of other researchers (Ferguson, 1991). I attempted throughout the analysis to make these interpretations transparent.

Limitations

As with any piece of research, there were limitations to this study. In this instance four limitations stood out in particular. The first was that I used quantitative data that were almost two decades old. As a result, the information I garnered from those data may not be applicable to today's youth. I also analyzed two different groups of people, a national and a local sample, at two different time points. It is possible that these groups of people were not like each other, and that it would be inappropriate to generalize any findings I had from one group to the other. To address this problem, I obtained demographic and social indicators for all rural students at the University of Michigan. I made comparisons between these students and the students in the NELS:88 dataset who were enrolled in elite universities and considered the ways that these similarities or differences might have affected my conclusions.

A third major limitation of this research was the small sample size of students in the quantitative data from rural areas enrolled in elite colleges. However, this is a demographic reality. Very few of these students matriculate to an elite institution. As a result, I was unable to create a model that predicted their college-going. Additionally, I would have liked to have a larger sample size for my local analysis, so I had a more representative sample of first-generation University of Michigan students from rural Michigan. Although these limitations were difficult to deal with, I was able to work around them in my subsequent chapters to create powerful understandings of college-going behaviors for rural youth.

Summary

In order to address my complex research questions, I employed a complicated research design. I had two succinct sets of data, both of which had nested data. These data sources occurred at two separate time points with two separate populations of rural youth. However, through careful analysis using the framework of mixed model theorists, I was able to sculpt a data design for this dissertation that allowed me to both address my research questions and infer relationships between my data sources. In subsequent chapters I present the results of my findings for each of the three questions.

Chapter 4

Who Goes to College?

In Chapter 2, I presented a conceptual framework for examining how students matriculate to college (see Figure 2.1). I created this framework by drawing from the research of those interested in college matriculation in general, and then more specifically those interested in the matriculation of youth from rural areas and first-generation college-goers. Of particular interest to me, was the role of social capital in students' matriculation decisions. In this chapter, I present the results from my national student analysis, in which I operationalize constructs outlined in my conceptual framework, highlighting the ways that norms and information sharing affected college-going. Specifically, I address the following two research questions in this chapter:

- 1a. *How are students' decisions to go to college concurrently influenced by their experiences with their home, school and community social networks?*
- 1b. *Do these experiences influence the type of college in which these students enroll?*

First, I describe the post-secondary choices, and demographic and social characteristics of high school students from rural areas in the United States. I then present the results of the regression model I created, to determine whether potential sources of social capital helped predict the matriculation of youth to 4-year colleges. I also examine the results of my elite college-going analysis, to determine the ways students' social capital further influenced the type of college in which they enrolled. Finally, I outline the importance and limitations of each of these analyses.

Traits of Rural Youth

My national sample includes 2,855 high school seniors from rural areas throughout the United States. About 42% of these students matriculate to a 4-year college institution (see Table 4.1), far fewer than the national average of almost two thirds of graduating high school students (Corey, 2005). Their parents also tend to have not gone to college and typically earn less than \$50,000 a year (see Table 4.2).

Table 4.1 College Matriculation Rates for Rural Students (n=2,855)

Characteristics	% of Sample
Student Matriculated to a 4-year college	
Yes	41.8
No	58.2
Type of 4-year college student Matriculated to	
Didn't matriculate	58.2
Elite	4.3
Not Elite	37.5

Generally, students in rural America live with both their mother and father, and are either only children or have one sibling. Academically, these students tend to enroll in the general and college preparatory curriculums, rather than the vocational program. They also participate in 1 to 4 extracurricular activities each week. These activities include everything from sports to music lessons and are based within and outside of their high schools.

Traits of College-Bound Rural Youth

There are quite a few differences between those rural students who do and do not go to college. In regard to student characteristics, those who go to college follow patterns identified by other researchers (see Table 4.2). Wealthy, White and Asian students, whose parents have gone to college, are more likely to matriculate to 4-year colleges. Like current national trends, women are more likely to go to college than are men

(USCB, 2005). Having fewer siblings is also positively associated with going to a 4-year college.

Table 4.2 Demographic and Social Characteristics of Students Who Attended and Did Not Attend Four Year Colleges (n=2,855)

Characteristics	% of Sample	% did not go to 4 yr. college	% went to 4 yr. College
Gender			
Male	50.9	53.5	47.2
Female	49.1	46.5	52.8
Race			
Asian/Pacific Islander	1.3	0.9	1.8
Hispanic	5.5	6.3	4.4
Black, not Hispanic	8.2	9.6	6.2
White, not Hispanic	82.6	79.6	86.7
American Indian	2.5	3.6	0.8
Highest level of Parent's Education			
High School Diploma or less	34.0	44.9	18.8
Some College	42.6	44.6	39.9
BA or more	23.4	10.5	41.2
Total Family Income			
Under 20,000	21.8	28.3	12.7
20,000-34,999	29.3	33.1	24.1
35,000-49,999	22.5	20.1	25.8
50,000 or more	26.4	18.5	37.4
Student lived with			
Both mother and father	65.6	58.6	74.9
Mother	26.8	31.1	20.9
Father	4.8	6.0	3.2
Other family structure	2.9	4.2	1.0
Number of Older Siblings			
0 older siblings	39.7	37.7	42.3
1 older sibling	30.7	29.8	31.9
2 older siblings	14.1	15.5	12.2
3 or more older siblings	15.6	16.9	13.6
Number of Younger Siblings			
0 younger siblings	40.1	38.4	42.5
1 younger sibling	33.4	31.9	35.5
2 younger siblings	17.0	19.1	14.0
3 or more younger siblings	9.6	10.6	8.1
All characteristics were significantly related to college matriculation at $p \leq .001$ tested with Chi square statistics. All analyses are weighted, but the sample size is unweighted.			

I, however, am interested in understanding the matriculation of youth who do not follow the trends identified by previous researchers. Namely, I want to explore what factors predict the matriculation of students whose parents did not go to college. I am

particularly interested in whether social capital is associated with matriculation. To that end, I explored two forms of social capital: norms and information sharing (Coleman, 1988). Essentially, I wanted to understand the ways in which norms and information sharing are related to college matriculation. I should note that, whereas the NELS database includes proxy measures that I have used to begin to explore these ideas, NELS was not necessarily designed to directly measure social capital. Thus, I used measures that captured the notion of social capital. In the following sections, I reiterate the logic behind using my selected measures.

Table 4.3 Educational Expectations of Students and Their Significant Others by College Matriculation (n=2855)

Characteristics	% of Sample	% did not go to 4 yr. college	% went to 4 yr. College
Level of education parents expect child to achieve			
HS degree or less	6.0	10.1	0.5
Some College	22.7	37.1	4.0
BA or more	71.3	52.8	95.4
Number of friends who worked full time			
None	17.4	7.9	29.8
Some	53.7	49.5	59.2
Most or All	28.9	42.6	11.0
Number of friends who planned to attend a 4-year college			
None	6.5	10.9	0.8
Some	40.8	54.5	22.9
Most or All	52.6	34.6	76.3
Highest level of education expected to achieve			
HS degree or less	10.1	17.2	0.3
Some College	31.0	48.6	6.5
BA or more	58.9	34.3	93.2
Education expect to need for desired job at age 30			
HS degree or less	8.6	14.2	1.0
Some College	30.2	49.0	5.3
BA or more	61.2	36.8	93.7
All characteristics were significantly related to college matriculation at $p \leq .001$ tested with Chi square statistics. All analyses are weighted, but the sample size is unweighted.			

Behavioral Expectations

Externalized. I wanted to gain an understanding of the types of post-secondary behaviors social networks found acceptable for youth from rural areas. To do this, I measured the post-secondary choices of other network members, so I could gain an understanding of the types of behaviors that students saw around them. I believed that these behaviors would be representative of the behavioral norms network members held for rural youth. As expected, I found that students' behaviors mimic the behaviors of those in their social networks (Table 4.3). Those whose peers go to college are more likely to attend college themselves.

Families also set behavioral expectations that can promote or constrain students' educational attainment. One way parents do this is by communicating to their children that they are expected to go to college. As such, I measured what parents expect of students relative to their post-secondary decisions. Consistent with the literature, I found students from rural areas are more likely to matriculate to college when their parents establish this behavior as an expectation (see Table 4.3).

Internalized. Although students understand normative behaviors through their relationships with others, at some point they internalize these norms - - making certain behaviors possible (Portes, 1998). In a further effort to assess the post-secondary behaviors of youth from rural areas, I captured these internalized norms through students' behaviors and the goals they establish for themselves. To do this, I assessed students' educational expectations, academic behaviors, and desires for the future.

I captured students' expectations both as a direct measure of the level of education they believe they will attain, and as a measure of the level of education they believe they will need for their future occupation. I included both of these, as extant

research supports the notion that these two measures of expectations are not always congruent, but both are important predictors of future behavior (Elder & Conger, 2000). I found that students who expect they will go to college are more likely to attend college two or more years later, as are those who expect to need a Bachelor's degree for their desired occupation (see Table 4.3).

Table 4.4 Students' Connection to their Communities and Goals for the Future by College Matriculation (n=2855)

Characteristics	Sample	Did not go to college	Went to college
	Mean (SD)	Mean (SD)	Mean (SD)
Important to Remain in Community**	0.000 1.000	-0.040 1.001	0.056 0.996
Important to Live near Family***	0.000 1.000	-0.095 1.037	0.133 0.930
Want to be Financially Secure***	0.000 1.000	-0.235 1.022	0.327 0.868
Want to have Own Family and close Friends***	0.000 1.000	-0.102 1.033	0.143 0.935
*** Characteristic was significantly related to college matriculation at $p \leq .001$. Tested with ANOVA statistics. All analyses are weighted, but the sample size is unweighted.			

Ruralness. I also measured those things students found to be important for their future. In so doing, I was trying to understand whether students feel an attachment to place that constrains their educational choices. One way researchers have measured this attachment is through students' goals for the future (Crockett, Shanahan, & Jackson-Newsom, 2000; Hektner, 1995). Accordingly, I used four measures of life goals. Three of these goals are consistent with the goals of individuals who have a ruralness orientation: the importance of remaining in their communities, the importance of living near their families, and believing that having one's own family is the most important goal for the future (Hektner, 1995). I also captured one life goal that is in contrast to a ruralness orientation - - believing that being financially secure is the most important goal for the future.

In contrast to what the orientation of ruralness would predict, I found that those students from rural areas, who go to college, report a stronger desire to remain in their community and live near their family than do students from rural areas who do not go to college. Further, as students' desires to start their own family increase, so does the likelihood they will matriculate to college. Even though the mean differences between groups based on these measures are small, their statistical significance suggests further investigation is merited. As expected, however, students from rural areas were more likely to matriculate to college as their desires to become financially secure increased.

Academics. Although the relationship between goals for the future and college-going did not develop in exactly the way the literature had led me to expect, the association between academic behaviors and matriculation did follow a predictable pattern. Typically, college matriculation is the outcome of a pattern of deliberate steps meant to ensure this end goal (Choy, 2001). Many of these steps are related to academic behaviors. Students who view college-going as a normative behavior, and who understand that certain academic behaviors improve the chances of matriculation, are likely to participate in these behaviors. Thus, I used academic behaviors as proxies for normative behaviors for college preparation and matriculation. I found that youth from rural areas, who participate in positive academic behaviors (measured by taking Algebra I by the end of 10th grade, and taking college entrance exams), are more likely to go to college (see Table 4.5).

Table 4.5 The Academic Behaviors and Networks of Rural Youth by College Matriculation (n=2,855)

Characteristics	Sample	Did not go to 4 yr. college	Went to 4 yr. College
	%	%	%
Took at least Algebra I by 10 th grade***			
Yes	77.7	65.1	95.3
No	22.3	34.9	4.7
College Entrance Exams***			
Took both SAT and ACT	11.5	6.3	18.7
Took SAT	21.4	14.2	31.3
Took ACT	30.5	20.6	44.2
Took neither SAT or ACT	36.6	58.8	5.8
Participation in Extracurricular Activities***			
Did not Participate	15.9	24.4	4.6
Participated in 1-2	39.2	45.7	30.6
Participated in 3-4	26.5	19.4	36.0
Participated in 5 or more	18.3	10.5	28.9
School Personnel Advised College-going			
Favorite Teacher	6.8	7.3	6.0
Guidance Counselor	8.9	9.0	8.9
Both Teacher & Counselor	57.1	57.2	57.0
Neither Teacher/Counselor	27.2	26.6	28.1
	Mean	Mean	Mean
	(SD)	(SD)	(SD)
Math Achievement***	51.076 (9.100)	47.070 (7.549)	56.651 (8.085)
Positive Student Teacher Relationship***	0.018 (1.012)	-0.070 (1.070)	0.140 (0.905)
***Characteristic was significantly related to college matriculation at $p \leq .001$ tested with Chi square statistics. All analyses are weighted, but the sample size is unweighted.			

Potential Sources of Information Sharing

Additionally, I was interested in whether students from rural areas have social relationships and participate in activities that increase their chances of receiving information that would help them in the pursuit of higher education. To that end, I assessed the receipt of college-going guidance from teachers and counselors, extracurricular participation, and positive student-teacher relationships. In accordance with the theory of social capital, students who receive information about college from their network members (here guidance counselors and favorite teachers) should be more likely to matriculate (Coleman, 1988). However, I found no differences between students

based on whether their favorite teacher or guidance counselor advises them to go to college.

Moreover, I considered extracurricular participation as a potential avenue for receiving information about college. Although this may be an unconventional way of measuring the concept of information sharing, my qualitative analysis suggested a link between participation in extracurricular activities and knowledge about college-going, insofar as this participation exposed students to higher education. Hence, I included it as a proxy measure here. Indeed, I found that students who participate in extracurricular activities are more likely to matriculate. I report *how* this participation led to information sharing in my qualitative analysis in Chapter 6.

Further, I consider positive student-teacher relationships as a potential source of information sharing. I used this measure because social capital theory suggests that the quality of individuals' relationships with network members influences their ability to attain a desired goal. In the case of college matriculation, positive relationships with teachers can increase students' chances of post-secondary education attainment, especially when teachers provide them with information about college. With this analysis, I could not measure what and whether college-related information is passed from teacher to student as a result of these relationships. However, I did establish that students from rural areas who have more positive relationships with their teachers are more likely to attend college. I explored *how* these relationships came to be important to students in my qualitative analysis, the results of which led me to frame this measure as a potential source of information sharing.

Summary

Generally, there were few real surprises with regard to which students went to college. The students from rural areas who matriculate exhibit many of the same characteristics and desires of ‘typical’ college bound youth. Further, they are more likely to be embedded in social networks that: share information with them they might otherwise not have received, and held college-going as a behavioral norm. What was surprising was that the theory of ruralness is not reflected in this analysis. In the following section I continue to explore this theory as well as the way students’ characteristics, desires, and social networks work in conjunction with each other to influence the college matriculation of rural youth.

Which Rural High School Graduates Go to College?

One of my primary questions in this dissertation was designed to understand how various individuals work together to influence students’ college-going decisions. I was not interested, for example, in understanding whether a student from a wealthy family is more likely to go to college than a student with more limited financial means. This link has been well established. Instead, I wanted to investigate whether demographic differences could be mitigated by other factors in a student’s life, like social capital. The results of this investigation can be found in Table 4.6.

This table reveals trends in my research findings. Here a “+” indicates that the presence of the independent variable in a student’s life was statistically associated with an increased likelihood that the rural student went to college. The more pluses there are, the stronger the positive relationship. A “-”, on the other hand, indicates that the presence of the independent variable was statistically associated with a decreased

likelihood that the rural student went to college. Again, a greater number of minuses represent a stronger negative relationship. I entered groups of independent variables in steps containing conceptually similar measures, so I could determine both the individual and cumulative effect of theoretical constructs on students' college decisions. The final step, or Model 7, included all independent variables in my analysis.

The literature I reviewed, led me to believe that certain constructs would be significantly related to college-going, but many were not in this multivariate setting. However, I did find that my model most accurately predicted college matriculation when I considered students' multiple social networks. I present the numerical results of this regression analysis in Appendix C. Unless otherwise stated, the reference group for each categorical independent variable was the middle category. For example, the comparison group for education expectations was, "expected to get some college", with the reported categories being, "expected to get a high school degree", and, "expected to get a Bachelor's degree". Each grouping of variables significantly contributed to the fit of my regression model, but as a whole, they were able to accurately predict the college-going decisions of 87% of the students in this study (see Appendix C). The Nagelkerke R square statistic (.713) for the final model also indicated that it did well in predicting the college matriculation of rural youth (1 being a perfect fit).

I started with demographic characteristics - - Models 1 and 2 included only demographic indicators. The relationship of each individual variable to the outcome is less important than (a) how groups of individual variables are related to college-going, and (b) how those relationships change when other groups of variables are taken into account. However, I want to illuminate some important items. It is clear that parents'

Table 4.6 Relationship Trends for a Model Predicting College Matriculation

(n=2855)

Independent Variable	Model 1: Parent Educ.	Model 2: Demo. Info.	Model 3: Expectation	Model 4: Ruralness	Model 5: Peer Network	Model 6: Academic Behavior	Model 7: Academic Network
Parents' ed., HS degree less	-- -- --	-- -- --	--	--	--		
Parents' ed., BA or more	+ + +	+ + +	+ + +	+ + +	+ + +	+ + +	+ + +
Family income under 20,000		-- -- --	--	--			
Family income 20,000-34,999		--					
Family income 50,000 +							
Female		+ + +					
Minority						+ +	+ +
Number of Older Siblings		--					
Number of Younger Siblings		--					
Lives with Mother		-- --	-- --	-- --	-- -- --	-- --	-- --
Lives with Father		-- -- --	-- --	-- --	-- --	-- --	--
Other family composition		-- -- --					
Lives in Midwest		-- -- --	-- -- --	-- -- --	-- -- --	-- -- --	-- -- --
Lives in South			-- --	-- --	--	-- --	-- --
Lives in West		-- --	-- -- --	-- -- --	-- -- --	--	--
Parents' expect HS or less							
Parents' expect BA or more			+ + +	+ + +	+ +	+ +	+
Expect need HS/less for job							
Expect need BA/more for job			+ + +	+ + +	+ + +	+ + +	+ + +
Expect to get HS/less			-- --	--	--		
Expect to get BA/more			+ + +	+ + +	+ + +	+ + +	+ + +
Important to live in Community							
Important to live near Family				+ +			
Want to be financially secure				+ + +	+ + +	+	+
Want to have own family				+	+		+
No friends have full time job							
All friends have full time job					-- -- --	-- -- --	-- -- --
No friends going 4 yr college					-- --	-- --	-- --
All friends going 4 yr college					+ + +	+ + +	+ + +
Took at least Algebra 1						+ + +	+ +
Math Achievement						+ + +	+ + +
Took College Entrance Exam						+ + +	+ + +
0 extracurricular activity							--
3-4 extracurricular activities						+	+
5 + extracurricular activities						+ + +	+ + +
Counselor advised college							++
Favorite teacher advised college							-- -- --
Both advised college							
Positive Student/Tchr. Relationship							-- -- --
Parent HS by S-T Relationship							+
Parent BA by S-T Relationship							
Constant	-- -- --		-- -- --	-- -- --	-- -- --	-- -- --	-- -- --

level of education has a substantial association with their child's level of education. Location is also important when it comes to college matriculation. Rural students who live in the Northeast, are more likely to matriculate to college than are students from other areas. This finding remains robust even after considering expectations, social networks, and academic behaviors. In Model 3, I include students' educational expectations as well as the expectations of their parents. I found that when students and their parents hold college-going as a behavioral expectation, students are significantly more likely to go to college, even after accounting for their academic behaviors.

Life Goals

Model 4 captures the divergent forms of social capital, which I discussed in Chapter 2, that exist in rural areas. 1) A negative association between the connection a student feels to his community and the likelihood he would go to college (Arnold, Newman, Gaddy, & Dean, 2005; Johnson et al., 2005). 2) A positive association between having been embedded in open social networks and college matriculation (Coleman, 1988; Duncan, 1992; Perna & Titus, 2005). To measure these two concepts, I considered four factors: the importance students put on remaining in their community; the importance students put on living near family; how important it is for students to be financially secure in the future; and how important it is for students to have their own family in the future. I expected to find that as rural students' desire for financial security increased so would their rate of college matriculation. I expected that the other three variables would be negatively related to college-going.

Having a future goal of financial security is positively associated with college matriculation. However, a desire to have one's own family is also positively associated

with college matriculation. There are no relationships between community connectedness and wanting to live near family on college matriculation. It seems that these rural students' post-secondary decisions are not associated with an attachment to place, as has been suggested by other researchers, once many other important factors were included in the fully developed logistic regression model.

Peers and Academics

I also wanted to determine whether the norms of peer networks are associated with the matriculation of rural students. I found that rural students, who are embedded in peer networks where most peers go to college, are significantly more likely to go to college. Further, students who exhibit more positive academic behaviors also have a greater chance of matriculating.

Including academic behaviors changed the association of another variable in my model. Minority group members become more likely to matriculate to college than other students once student academic behaviors and achievement are considered. I attempted to determine what might have driven this finding by modeling interactions between other important characteristics and race, but I was unable to find any such relationship.

Potential Sources of Information

I also measured potential sources of information sharing available to students. To do this, I included students' extracurricular participation, the advice of school personnel, and their relationships with teachers. Participation in extracurricular activities is one of the more robust predictors of college-going. In fact, when students participate in five or

more extracurricular activities they are more than twice as likely to go to college, than students who participated in only one or two extracurricular activities (see Appendix C).

Students' decisions to matriculate differ depending on the individual who provides them with explicit college-going information. Rural students whose favorite teacher advises them to go to college are less likely to go to college than are those who are not advised about college. High school guidance counselors on the other hand positively affect college matriculation when they advise students about college. This study is the first I have seen that has identified such a link in rural schools.

Additionally, and perhaps most importantly, I modeled an interaction effect between level of parents' education and positive student-teacher relationships. I did this because I wanted to determine whether relationships with teachers were more important for the matriculation of youth who were less able to receive information about college from home. I found that students whose parents have high school degrees or less, are more likely to go to college if they have positive relationships with teachers. In other words, teachers are able to improve the chance that youth with less educated parents will go to college.

These final steps are important because they indicate that educators can influence whether or not students, under their guidance, participate in activities that increase their chances of going to college. Educators can also provide students with the types of social supports that may lead to matriculation. Keeping these results in mind, I now focus my investigation on students who matriculated to 4-year institutions, to determine whether I can gain any further understandings about the college matriculation of rural youth by comparing those in elite and non-elite colleges.

How do Students in Elite Colleges Differ from Those in Other 4-year Colleges?

In this question, I address my sub-question for analysis: do the experiences, identified in the previous analysis, influence the type of college in which these students enroll? To address this question, I used cross-tabulation and ANOVA analyses. Unfortunately, I was not able to use binary logistic regression because so few students attended elite colleges. Only 4.3% of the rural students in the NELS:88 data matriculated to an elite college. To address my research question I looked only at those students enrolled in 4-year colleges, comparing youth who attended elite and non-elite institutions. As a result my sample size was reduced to 1,210 students. In Table 4.7, I provide some demographic characteristics of students who matriculated to 4-year colleges, paying particular attention to the type of college those students attended. Rural students who attended elite institutions differed from their counterpart students who attended non-elite institutions in a number of ways.

Demographic Differences and College Type

The rural students who attend elite colleges are significantly more likely to come from the wealthiest families and to have a parent who graduated from college than those who attend non-elite colleges. They are also significantly more likely to live with both their mother and father. Interestingly, even though the majority of students in elite schools are White, Hispanic and Asian students attend elite colleges at a disproportionately high rate. Although there are very few Hispanic or Asian students in this sample of rural 1992 high school graduates, it should be noted that when they attend 4-year colleges they are more likely to go to elite colleges.

Table 4.7 Demographic and Social Characteristics of Students in Elite and Non-Elite Colleges (n=1210)

Characteristics	% of Sample	%Went to an Elite College	%Went to a Non-Elite College
Gender			
Male	47.3	51.6	46.7
Female	52.7	48.4	53.3
Race*			
Asian/Pacific Islander	1.8	5.3	1.4
Hispanic	4.4	7.4	4.1
Black, not Hispanic	6.2	4.3	6.4
White, not Hispanic	86.8	83.0	87.2
American Indian	0.9	0.0	1.0
Highest level of Parent's Education***			
High School Diploma or less	18.8	7.8	20.1
Some College	40.0	31.0	41.0
BA or more	41.2	61.2	38.9
Total Family Income***			
Under 34,999	36.8	18.1	38.9
35,000-49,999	25.9	24.5	26.0
50,000-99,999	31.3	45.7	29.6
100,000 or more	6.1	11.7	5.4
Student lived with			
Both mother and father	74.8	78.7	74.4
Mother	20.9	13.8	21.7
Father	3.1	6.4	2.8
Other family structure	1.1	1.1	1.1
Number of Older Siblings**			
0 older siblings	42.4	47.9	41.7
1 older sibling	31.9	24.5	32.8
2 older siblings	12.1	8.5	12.5
3 or more older siblings	13.7	19.1	13.0
Number of Younger Siblings			
0 younger siblings	42.5	42.6	42.5
1 younger sibling	35.5	37.2	35.3
2 younger siblings	14.1	17.0	13.7
3 or more younger siblings	7.9	3.2	8.5

Social Capital and College Type

Once again I sought to determine whether there are differences between students in elite and non-elite colleges based on educational expectations. There are no significant differences between parents' and students' educational expectations and aspirations (see Table 4.8). However, students who attend elite institutions are more likely to be associated with peer networks where most peers attend 4-year colleges. In other words,

elite-bound youth are more likely to be associated with networks that view college-going as a normal behavior.

Table 4.8 Educational Expectations for Elite and Non-Elite College-goers and Their Significant Others (n=1210)

Characteristics	% of Sample	Went to an Elite College	Went to Non-Elite College
Level of education parents expect child to achieve			
HS degree or less	0.6	1.1	0.5
Some College	4.1	2.1	4.3
BA or more	95.4	96.8	95.2
Education expect to need for desired job at age 30			
HS degree or less	1.0	0.0	1.1
Some College	5.3	7.5	5.0
BA or more	93.7	92.5	93.9
Highest level of education expected to achieve			
HS degree or less	0.3	0.0	0.4
Some College	6.5	5.3	6.6
BA or more	93.2	94.7	93.0
Number of friends who planned to attend a 4-year college*			
None	0.8	0.0	0.9
Some	23.0	13.0	24.1
Most or All	76.2	87.0	75.0
*p ≤ .05 All analyses are weighted, but the sample size is unweighted.			

Once again, I wanted to measure the concept of ruralness. In this instance though, I found that a student’s sense of ruralness came into play when choosing among college types. Students attending elite institutions think that it is less important to live near their families and to remain in their communities than students attending non-elite colleges (see Table 4.9). Further, students in elite institutions place significantly more importance on being financially secure in the future than their counterparts.

Rural students who attend elite institutions are also significantly more likely to adhere to normative academic behaviors that are positively associated with college-going, including: taking academically rigorous courses and college entrance exams (see Table 4.10). This finding is not particularly surprising, as elite institutions typically enroll academically gifted students. Elite college-goers are also more likely to have potential

sources of information sharing, with higher participation in extracurricular activities and more positive relationships with teachers.

Table 4.9 Community Connectedness of Elite and Non-Elite College-goers (n=1210)

Characteristics	Sample	Went to Elite College	Went to Non-Elite College
	%	%	%
Important to remain in community*			
Not important	44.5	46.3	44.3
Somewhat important	40.4	41.1	40.4
Very important	15.1	12.6	15.3
Important to live near family*			
Not important	18.1	14.9	18.4
Somewhat important	35.2	48.9	33.7
Very important	46.7	36.2	47.9
	Mean (SD)	Mean (SD)	Mean (SD)
Important to be financially secure*	0.000 (1.000)	0.7682 (0.8997)	-0.0205 (1.0094)
Important to have own family and friends	0.000 (1.000)	-0.0767 (1.1031)	0.0089 (0.9875)
* Indicates a significant relationship between the characteristic and college type at $p \leq .05$ using ANOVA statistics. All analyses are weighted, but the sample size is unweighted.			

Summary

Taken as a whole, students from rural areas who attend elite colleges have a plethora of affordances working in their favor. They are, in other words, the most privileged of the privileged students. Elite college-goers have less of a ruralness orientation and instead are more likely to exhibit behaviors associated with college-going. Namely, rural elite college students are more likely to prioritize finances over family and community. Further, they belong to high school peer networks where peers matriculate to college and have more positive relationships with their high school teachers.

Table 4.10 Academic Behaviors and Networks of Elite vs. Non-Elite College-goers (n=1210)

Characteristics	Sample	Went to Elite college	Went to non-elite College
	%	%	%
Took at least Algebra I by 10 th grade**			
Yes	95.2	100.0	94.7
No	4.8	0.0	5.3
College Entrance Exams***			
Took both SAT and ACT	18.7	26.6	17.8
Took SAT	31.2	46.8	29.4
Took ACT	44.2	26.6	46.3
Took neither SAT or ACT	5.8	0.0	6.5
Participation in Extracurricular Activities*			
Did not Participate	4.6	1.2	4.9
Participated in 1-2	30.6	21.0	31.6
Participated in 3-4	35.9	39.5	35.5
Participated in 5 or more	28.9	38.3	27.9
	Mean (SD)	Mean (SD)	Mean (SD)
Math Achievement***	56.651 (8.086)	63.164 (6.141)	55.895 (7.946)
Positive Student Teacher Relationship**	0.000 (1.000)	0.247 (0.873)	-0.029 (1.010)
** p ≤ .01, ***p ≤ .001 All analyses are weighted, but the sample size is unweighted.			

Interpretation

In both the elite-college and college-going analyses, I explored how social capital influences the college decisions of youth from rural areas. To do this I created a multivariate model in which I included aspects of students' home, school, and community social networks. I was able to accurately predict 87% of the college matriculation decisions for youth from rural areas. Each of these aspects individually influenced college-going. Nonetheless, in an analytic model that considered the cumulative effect of home, school, and community social networks, I was better able to understand matriculation patterns, especially those of youth who, from demographic indicators, were relatively disadvantaged.

Consistent with status attainment research, one of the most powerful factors influencing college-going is parents' highest level of education. Students achieve at least as much if not more education than their parents. However, there are still quite a few students who did not fit this pattern. Many of these rural students are first-generation college-goers, matriculating to a 4-year college despite their parents' low levels of education. Indeed, almost 19% of rural students in this sample matriculate to a 4-year college even though their parents had a high school degree or less. Clearly parents' level of education alone does not define their matriculation.

External Behavioral Expectations

Social capital theory helps explain how these students end up matriculating to college. When students are embedded in social networks of kin and non-kin members who hold college matriculation as a behavioral expectation, they are more likely to matriculate to college. These relationships may be particularly important for the matriculation of students whose parents have no college experience. Indeed, when parents and students believe college-going is a normative behavior, students with less educated parents are more likely to go to college than they are when they, and their parents, do not hold college-going as a normative behavior.

Being embedded in peer networks that promote college-going overcomes the negative effect of coming from a low-income family. Peer networks are also important for elite college-going. Those who attend elite colleges are more likely to have peers who attend 4-year colleges. These findings lead me to believe that students who are not privileged relative to college-going within their family may improve their chances of matriculating by associating with college-bound youth.

Ruralness

Interestingly, the concept of ruralness was relevant only in my elite analysis, which was not multivariate. This could be a result of the factors I used to model this concept, or it could be an indication that feeling a strong connection to place only has bearing on matriculation decisions as it relates to college type. Students who enroll in elite colleges feel less connection to their community and family than do students enrolled in non-elite 4-year colleges. Researchers have suggested that students from rural areas with high levels of community and family social capital are less likely to go to college and are even less likely to *travel* to go to college than are students who do not feel such connections (McDonough, 1997). In the absence of an elite institution existing in the student's community, attending an elite institution usually means that the rural student will have to move far away from home for college. Thus, it makes sense that students who attend such institutions have less attachment than others.

Both college-bound and especially elite college-bound rural youth hold financial success as a norm. Attending college especially attending an elite college, will probably result in a higher paying and more prestigious job. Typically, the occupational structure of rural areas does not offer many high-prestige occupations. Students who desire such jobs may realize that they need to leave their communities and as a result, distance themselves from that community.

School Personnel

Student expectations and the expectations of their social networks are important forms of social capital for youth from rural areas, but so too are potential sources of information sharing. Interestingly, having a guidance counselor who advises students

about college-going increases the chance of matriculation, whereas having a teacher who provides such advice is negatively associated with college-going. It could be that students who rely on school personnel for information about college matriculation may need explicit directions and advice from informed professionals to help them decide what post-high-school options are the best for them.

Potential sources of information about college have a heightened importance for first-generation college students. Positive relationships between first-generation students and teachers increase the probability of going to college. These findings underscore the importance of school personnel in the matriculation of youth who lack social capital from home. School personnel may be more important for these youth because they provide students with information about college they do not receive in their own homes. I explore this hypothesis in my interview analysis.

Minority Youth

Another interesting finding relates to the matriculation of minority students from rural areas. For the national sample of rural students, I found that after accounting for academic behaviors, minority students are more likely to go to a 4-year college than non-minority students. When Asian and Hispanic students in rural areas attend 4-year colleges, they disproportionately select elite universities. Although the trend of Asian students attending elite universities has been identified (Golden, 2006), I did not expect this trend among rural Hispanic students (Cooper, 2002; Perna, 2000). These findings may reflect universities affirmative action policies, and particularly those in elite universities. Many universities actively recruit high-achieving minority students (Bowen & Bok, 1998). Rural students are also recipients of affirmative action policies by virtue

of their low incomes, so these findings may reflect some additive effect of students' belonging to two groups targeted by affirmative action policies.

Importance

Both the literature I review, and the analysis in this chapter, suggest that first-generation students from rural areas are particularly unlikely to go to college. However, some rural students do matriculate to 4-year colleges, even to elite 4-year colleges. In these analyses I have sought to understand the matriculation patterns of these youth in the hope of being able to provide recommendations about ways to improve their matriculation rates.

Students whose parents have not gone to college are more likely to go to college when their external and internalized norms support college-going. Further, these same students are more likely to go to college if they have positive relationships with teachers. These findings suggest that first-generation college-goers' chances of matriculation can increase substantially if their potential for social capital through non-familial networks is increased. I investigated why and how these networks came to be important in my interview analysis.

Limitations

There are several limitations to the analyses in this chapter. The NELS dataset includes a nationally representative sample of rural students in the United States, which makes my study generalizable to all rural students in this country. However, the dataset spans from 1988 to 1996. Thus, the students in this study went to college almost two decades ago. It could be that policies and matriculation patterns have changed, so the NELS:88 students may not be representative of students today. For example, affirmative

action policies have historically benefitted students from rural areas. The overturning of race-based policies in Michigan and California public universities, for example, has likely affected the ability of many minority students from rural areas to matriculate. To address such problems, I make comparisons between this older national sample and a current local sample of students enrolled in an elite university in Chapter 6.

A further limitation of this study is that I was unable to create a fully multivariate model for the college matriculation of rural youth to elite colleges. This limitation is likely a result of the small number of students who attended elite colleges, and the particularly small number of students with less educated parents who attended an elite college. As a result, I was not able to consider the multiple social networks that shape whether these rural students attended an elite college. However, in Chapter 6, I discuss these influences with regard to interviews of first-generation students from rural areas enrolled in one elite college.

As with most quantitative research, I was not able to determine the process by which each of the independent variables of interest was important. Why for example, were positive student-teacher relationships important? Why did I consider these relationships a source of information sharing? My data analysis process, across the qualitative and quantitative samples, was iterative. As I learned something from one analysis in my dissertation, I explored it in another. Hence, although I measured these relationships with the national sample, I also explored *why* and *how* these issues mattered in my interview analysis of local youth. The results reported in this chapter offer one side of this process. In subsequent chapters I add to this picture through student

interviews, where I try to understand the process through which these factors become important.

Additionally, an assumption of traditional regression techniques is that observations, in this case, students, are independent of one another. This means that there is not a relationship between one student and another student in the sample. However, NELS sampled multiple students in the same high school. It is possible that the college going decisions, of groups of students within the same high schools, were influenced by some characteristic of the high school. Assuming that these students are independent of each other could lead to biased estimates of significance, where for example, one might assume that a relationship is statistically significant, when it in fact occurred only by chance.

Further, I was only able to hypothesize what rural school administrators and teachers might do to help support the college matriculation of their students, as seen through the eyes of individual students. In these analyses, I did not analyze what rural schools are in fact doing that promotes or hinders the college matriculation of their student body. Individual positive student-teacher relationships and counselors, who give advice about college matriculation, surely provide students with important information about college. However, I was also interested in determining whether there is some additive matriculation effect of students' access to positive school social environments.

To determine what schools do and whether their characteristics, especially their structure and organization, influence the college matriculation of their students, I conducted a school-level analysis that I describe in the following chapter.

Chapter 5

The Influence of Rural Schools

Many of the factors I have outlined as being influential to the college-going of youth from rural areas are out of the control of schools and educators. Teachers for example have no influence on a student's family structure or where a student lives. However, I did find that individual school personnel can improve the chances that their students will go to college. This is especially true for students whose parents have not gone to college. Further, students who take academically rigorous math classes are more likely to matriculate to college. Behaviors like these are within the parameters of schools. This means that rural schools are able to improve the chances their students will go to college. Hence, although in Chapter 4, I investigate how students' academic behaviors and social relationships affect their college matriculation, here I investigate the ways that schools promote college matriculation through their structures and social organization. Specifically, I address the following question in this chapter:

2. How do the structures and social organizations of high schools in rural areas influence the college-going decisions of the students who attend them?

In the interest of addressing this question, I first provide a description of rural schools in the United States. Then I examine the relationship between rural high school characteristics and the college matriculation of their students. Finally, I discuss the importance of these findings and the limitations of these analyses.

What are the Characteristics of Rural High Schools in the United States?

Schools across the United States vary significantly with regard to their curriculum, structure, size, and resources. Schools in rural America are no exception. In this section, I briefly describe rural schools in the United States to provide the reader with a better understanding of the types of schools students from rural areas attend (see Table 5.1).

Similar to my analyses in Chapter 4, I utilize data from the NELS database and analyze all rural high schools attended by at least five students, for a total of 252 rural schools. Almost all of the schools in this sample are public schools which makes sense; rural areas are usually so small that it would be difficult for a private high school to attract enough students. These rural high schools serve primarily White students, and almost 90% serve student bodies where less than one half of the students qualify for free or reduced price lunch (see Table 5.1).

Many of these schools are relatively small. More than a third of the schools serve less than 600 students, compared to the national average of 752 (NCES, 2001). Further, rural schools are more likely to offer vocational education than they are to offer Calculus to their students¹. Enrollment in advanced mathematics in high school is the strongest curriculum predictor of graduating from a 4-year college (Adelman, 2001; Mann, 2005). As students cannot take advanced mathematics if it is not offered, I decided to measure the presence of a Calculus course in each high school as a proxy measure of an advanced curriculum. I contend that offering a Calculus course is consistent with a school environment that promotes college matriculation, whereas the presence of vocational

courses (especially in the absence of Calculus) is more indicative of a school environment that promotes entry into the workforce.

Table 5.1 Demographic Characteristics of Rural High Schools and Their Students (n=252 schools; n=2,568 students)

Characteristics	% of Sample
<i>School Sample</i>	
% of students receiving free or reduced price lunch	
10% or less	22.5
11-50%	65.1
51-100%	12.4
% of White students enrolled in school	
50% or less	14.3
51-75%	11.4
76-90%	22.2
91-100%	52.2
School size	
Small- Under 600 students	36.8
Medium- 600-999 students	28.5
Large- 1,000 or more students	34.6
Calculus Course Offered	
No	37.3
Yes	62.7
Vocational Education Courses Offered	
No	13.0
Yes	87.0
<i>Student Sample</i>	
Parents' highest level of education	
High school diploma or less	33.0
Some college	43.4
BA or more	23.6
Student is a minority	
Yes	15.0
No	85.0
Student is female	
Yes	50.2
No	49.8
Highest Math Course Enrollment (10 th grade)	
Under Algebra 1	17.2
Algebra 1	24.3
More than Algebra 1	58.5

Does the Social Organization of Schools Matter?

In addition to these characteristics, I once again wanted to identify factors that are associated with the matriculation of rural students whose parents have not gone to college. In this analysis, however, I focus on the role of different school (rather than student) characteristics. One of these is the social organization of schools. I am interested in this construct because schools with positive social organizations (i.e. where school personnel and students get along and communicate freely with each other) ought to be in a better position to influence the post-secondary decisions of their students. I outline the reasons for this below.

The tighter a social network is, the more likely it is that individuals within that network hold similar values and beliefs (Coleman, 1988). In such a network, students are encouraged to exhibit certain normative behaviors by multiple network members. Not behaving in such ways may result in sanctions from the entire group; and thus, individuals are likely to adhere to what network norms dictate. Additionally, close social networks promote information sharing (Coleman, 1988). This occurs because individuals within these networks tend to rely on and trust one another. People who trust and rely on each other are more likely to share information (Coleman, 1988). Information sharing and behavioral norms can potentially facilitate action by an individual. I was interested in understanding whether these concepts were able to facilitate post-secondary decisions for rural high school students.

By assessing the social organization of rural high schools I planned to explore 1) the degree to which the social networks of individual rural high schools are open or closed and 2) whether the closeness of networks improves or constrains their students'

chances of going to college. In an effort to measure this construct, I aggregate two student level variables to the school level: positive student-teacher relationships and guidance counselor provided college-going advice. Both of these were part of the logistic regression in Chapter 4 as student-level variables. Aggregating them to the school level represents the social dynamic of the school itself. Thus, positive student-teacher relationships measures the degree to which the overall school atmosphere is positive. College encouragement assesses whether the guidance counselors generally push the student body toward higher education².

Does School Size Matter?

I also investigate the relationship between the social organization of schools and school size. As I reviewed in Chapter 2, there is much debate about school size in rural America. Some argue that it is easier to develop strong social relationships in smaller schools, as students and teachers interact with each other more frequently than they do in larger schools. However, the small size of many schools constrains the courses they are able to offer, as there are not enough teachers to instruct, or students to take, a variety of courses. Proponents of large schools argue this restriction of curricula offerings can negatively impact student achievement.

I use cross-tabulation and ANOVA to determine whether rural school size is indeed related to the social organization of schools and course offerings. The results of these analyses are found in Table 5.2, which support the trends from extant research. The larger a school, the more likely it is to offer a particular advanced course, Calculus. Most rural schools, regardless of their size, offer vocational classes. However, large and medium sized schools are more likely to do so than small schools. I conducted a separate

analysis, not reflected in the table, to determine whether those small schools, which did not offer vocational classes, were more likely to offer Calculus. This would be an indication that some small schools may choose to focus on academically rigorous coursework. I found that of the 97 small schools represented in this sample, only 7 offered Calculus but not vocational courses.

Additionally, smaller schools are associated with higher positive student-teacher relationships³. School size is unrelated, however, to whether guidance counselors encourage college-going. In other words, guidance counselors are similarly likely to advise students to go to college, regardless of whether they are in a small, medium, or large school.

Table 5.2 The Relationship between Social Relationships, Course Offerings and School Size (n=252 schools)

Characteristics	Sample	Small School <i>Under 600</i>	Medium School <i>600-999</i>	Large School <i>1000 +</i>
<i>Course Offering</i>	%	%	%	%
Calculus Course Present in High School				
Yes	62.7	40.9	68.1	81.6
No	37.3	59.1	31.9	18.4
Vocational Courses Present in High School				
Yes	86.9	78.5	91.7	92.0
No	13.1	21.5	8.3	8.0
<i>Social Organization</i>	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Counselors Encourage College, z-scored	0.000 (1.000)	0.124 (0.960)	-0.043 (1.109)	-0.096 (0.944)
Positive Student Teacher Relationship, z-scored	0.000 (1.000)	0.204 (1.115)	-0.095 (0.987)	-0.139 (0.845)
Calculus Course was significantly related to school size at $p \leq .001$. Vocational Course was significantly related to school size at $p \leq .01$. Positive Student-Teacher Relationship was significantly related to school size at $p \leq .05$. All analyses are weighted, but the sample size is unweighted.				

These results reflect a problem that has plagued schools in rural areas for decades. Is it possible for schools to have both a rigorous academic curriculum and a positive social organization? In an effort to better understand this dilemma as well as the role

schools generally play in the matriculation of youth, I conducted a school analysis that I describe in the following sections.

Do School Characteristics Have an Effect on Students' College Matriculation?

The results of my student analysis in Chapter 4, led me to conclude that different aspects of schooling (i.e. social-organization and structure) influence an individual student's decision to go to college. As a result, I became interested in identifying those high school characteristics that are most influential. To that end, I conducted an HGLM analysis, which allowed me the opportunity to consider a student outcome (college matriculation) as a product of school characteristics (social-organization and structure). Addressing the ways that school characteristics affect college matriculation involves two steps. The first of these is to establish whether some portion of students' matriculation decisions can be attributed to the high schools they attended. The second step (conducted only if the researcher has determined that schools indeed affect matriculation) is to try to explain *what* characteristics of schools affect students' matriculation. In this section I discuss my endeavors for completing the first step of this process. To accomplish this, I created a model that measured the odds of going to college in each school. I present the results of this analysis in Table 5.3.

I controlled for four traits of students in this model: gender, race, highest mathematics course taken, and parents' education. I found that within individual schools, female students are more likely to go to college than are male students. Minority rural students are no more likely to go to college than are non-minority students in rural areas. Further, the odds of college matriculation for rural students who have taken mathematics courses more advanced than Algebra 1 (by the time they are in the 10th grade) is more

than four times that of the college matriculation of those who have taken Algebra 1. Considering my control measures, the intercept for this analysis is the odds of college matriculation in each school, adjusted for students with average: gender, race, Algebra 1 enrollment, and parents' education.

Table 5.3 Within-School Model of College Matriculation (n=2,568 students; n=252 schools)

Characteristic	Odds of Going to a 4-year College			
<i>(population average with robust standard errors)</i>				
Intercept	0.55***			
Fixed Effects:				
Female	1.86***			
Minority	0.809			
Took Less than Algebra 1	0.21***			
Took More than Algebra 1	4.29***			
Random Effects:				
Parents' Education Level	1.80***			
Chi-square table:				
	<i>SD</i>	Variance	<i>Ff</i>	χ^2
Intercept	0.58915	0.34710	248	399.22***
Parents' Education Slope	0.13259	0.01758	248	249.78*
* p ≤ .05; *** p ≤ .001.				

I report my findings in log odds. Any HLM coefficient less than 1 indicates that students with that characteristic are less likely to go to college, whereas any HLM coefficient greater than 1 represents that students with that characteristic are more likely to go to college. For example, the intercept statistic indicates that students are almost half as likely to go to college as they are to not go to college, after controlling for gender, race, parents' education, and taking Algebra 1. Further, the results of the chi-square table, at the bottom of Table 5.3, indicate that the odds of going to college are significantly different across the rural schools in this sample. In other words, students in one school are more likely to go to college than students in another school. This finding

is important because it means that school characteristics may promote or constrain their students' chances of matriculation. I sought to determine which characteristics are the most influential for post-secondary decisions.

The Role of Parents' Education

The decisions that interest me the most are those of students whose parents have not gone to college. To sharpen my investigation of these rural students, I analyzed whether the relationship between parents' education⁵ and college matriculation is different depending on the high school students attend. Similar to the results in Chapter 4, I found that within an individual school, students with more educated parents are more likely to go to college themselves. Interestingly, though, I also found that this relationship is different in different high schools. I wanted this relationship to have a flatter (rather than a steeper) slope because flatter slopes indicate that schools are more equitable in the relationship between parents' education and college matriculation (see Figure 3.2). This means that students whose parents did not go to college are more likely to matriculate if they attend some high schools than if they attend others (see chi-square table in Table 5.3). Thus, some rural schools do a better job of getting students with less educated parents to college than others. I wanted to understand which school characteristics were especially useful in promoting the college matriculation of these youth.

Summary

These findings reinforce my belief that the structure and social organization of high schools affect college matriculation. Moreover, I wanted to see if I could discover what caused groups of students (based on parents' education) to be more or less

privileged relative to college-going. To do this, I conducted an analysis in which I used school characteristics to predict college matriculation. I describe this analysis in the following section.

Which School Characteristics Contribute to Whether or Not Students Go to College?

Once I established that college matriculation varied significantly between schools (even after taking students' gender, minority status, and algebra enrollment into account), I attempted to identify characteristics of a school's structure and social organization that explained between-school differences. My overarching research question for this analysis was, *'How do the structures and social organizations of high schools in rural areas influence the college-going decisions of the students who attend them'?* To answer this question I assessed the roles that course offerings, school size, and social organization played in the matriculation chances of youth from rural areas. Additionally, I attempted to determine whether schools with positive social organizations can improve the likelihood that students with lesser educated parents would go to college. I present the results of my school analysis in Table 5.4.

School Demographic Information

Primarily for control purposes, I accounted for basic demographic indicators that are related to college matriculation. In this analysis, demographic information was related to the social composition of the school. By controlling for demographic indicators I was able to measure how the context of schools was associated with college matriculation (Raudenbush & Bryk, 2002) I included measures such as, the average family income for each school. Similar to my previous results, I found that schools that

enroll students with more highly educated parents are more likely to graduate students who matriculate to college than are those schools with lower averages of parents' education. I found no difference in matriculation rates between schools based on average level of family income or the percent of the student body who are minority students.

School Academics

Also as a control for the context of the school, I modeled the average math achievement of students in the school. I found that as a school's average math achievement increases, so does the matriculation rate of the school's student body. This is not surprising, as my results in Chapter 4 indicate that higher math achievement is associated with college-going.

Further, I was interested in determining whether I could understand the norms of high schools through the courses they offered. Rural high schools often have to make choices about the types of courses they are going to offer. These choices are influenced by: school size, the needs of the student body, and the qualifications of the teachers (Lee, et al., 2000). I argue that offering a Calculus course may be an indication that the school views college-going as a normative behavior or at least as a possibility, as such a course is mainly for college-going students. Offering vocational courses, on the other hand, indicates that the school values training students for immediate entry into the workforce after high school (DeYoung, 2002). I found an important relationship between course offerings and school size that I discuss in the following section.

Table 5.4 The Influence of High Schools on the College Matriculation of Rural Youth. (n=2,568 students; n=252 schools)

Characteristic <i>(population average with robust standard errors)</i>	Odds of Going to a 4-year College			
<i>Effects on average between-school matriculation odds (intercept)</i>				
Intercept ⁵	0.55***			
<i>School Demographics:</i>				
More than 50% of the student body is from minority group	1.17			
Average Family Income	0.97			
Average Level of Parent's Education	1.43***			
<i>School Academics:</i>				
Average Math Achievement, Grade 12	1.37***			
Presence of Calculus Course	0.97			
Presence of Vocational Courses	0.96			
<i>School Size:</i>				
Medium School	0.86			
Large School	1.22			
<i>Social Organization:</i>				
Positive Student-Teacher Relationships	0.99			
Students Feel Guidance Counselors Encourage College	0.94			
<i>Interactions:</i>				
Medium School by Calculus Course	1.97***			
Large School by Calculus Course	0.91			
Medium School by Guidance Counselor Encourages College	0.96			
Large School by Guidance Counselor Encourages College	1.35*			
<u>Relationship between Matriculation and Parents' Education:</u>				
Average Student-Teacher Relationship	0.90*			
<u>Fixed Effects:</u>				
Female	1.18			
Minority	1.01			
Less than Algebra 1, in 10 th grade	0.21***			
More than Algebra 1, in 10 th grade	4.15***			
<u>Random Effect:</u>				
Parents' Education/Matriculation Slope	1.75***			
<u>Chi-square table:</u>				
	<i>SD</i>	<i>Variance</i>	<i>Df</i>	<i>χ²</i>
Intercept	0.53163	0.28263	234	330.39***
Parents' Education Slope	0.25993	0.06756	247	226.94*
* p ≤ .05; *** p ≤ .001.				

School Size

My findings validate extant research. The first interaction tested whether the odds of matriculation are the same for students attending small and medium sized schools which offer Calculus, as large schools which offer Calculus. I found that attending a medium sized school that offers a Calculus class almost doubles the odds (1.97) that a student will go to college (see Table 5.4). There is no significant difference between students in large and small high schools based on Calculus courses. This finding seems to be consistent with the arguments of mid-sized school proponents. If these schools offer advanced courses, more of their students go on to college. However, the school size debate includes arguments about both tangible and intangible resources. Thus, I also explored the role of the social organization of schools.

I was interested in determining how large schools performed relative to college matriculation in comparison to small schools. In this instance I used the proxy variable 'guidance counselor encourages college matriculation' as the measure for a school's social organization. My findings are somewhat consistent with the social capital argument put forth by proponents of small schools. Large schools which have guidance counselors who encourage college-going have significantly higher odds (1.35) that their students matriculate to college than are small schools that have counselors who do not encourage such behavior. This suggests that when large schools are able to provide social supports, their students matriculate at a higher level. I found no interaction effect between social organization and medium sized schools. I present hypotheses for these findings in the interpretation section.

Parents' Education and the Social Organization of Schools

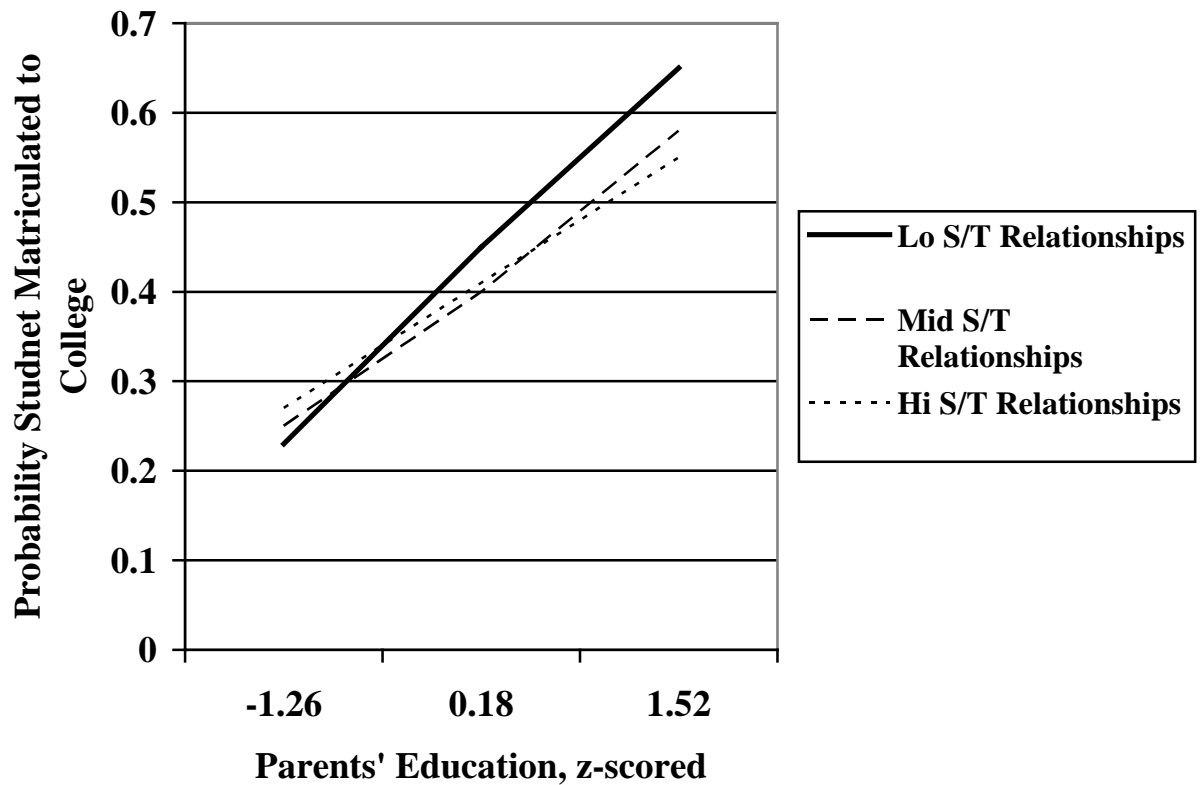
In this analysis, I also investigated whether the social organization of schools influences the relationship between parents' level of education and college matriculation for students within each school. My interest in this relationship stems from the results in Chapter 4, which indicate that having a positive relationship with a teacher is particularly important for youth whose parents have not gone to college. I wanted to determine if schools, with higher levels of positive student-teacher relationships generally, are able to increase the matriculation chances of students with less educated parents.

Figure 5.2 represents the effect a positive school social organization has on the association between parents' education and students' college matriculation. My findings here are consistent with my findings from prior analyses. Students with less educated parents are less likely to matriculate to college when they attend rural high schools that do not have positive social organizations. Further, students with less educated parents are more likely to go to college when they attend high schools with more positive social relationships between teachers and students. This means that positive school social organizations are somehow able to improve the chances that students with less educated parents go to college.

I have found that 1) students whose parents have not gone to college are more likely to go themselves if they have a positive relationship with a teacher; and 2) in schools with more positive social organizations students with less educated parents are more likely to go to college. Together these findings point to the notion that schools serve as an important social network for less privileged youth. This could be an indication that schools with positive social organizations provide students' with social

capital, particularly first-generation college students. I elaborate on this idea in the interpretation section.

Figure 5.1: The Effect of the Social Organization of Schools on the Relationship between Parents' Education and College Matriculation



Interpretation

This analysis has aimed to identify elements of school structure (size and course offerings) and social organization that are associated with whether or not students matriculate to college. I found that certain aspects of rural high schools can improve the chances that less privileged groups of students (namely those with less educated parents) will go to college. I interpret the implications for each of these findings in the following sections.

School Size Revisited

Two aspects of schooling are critical to the school size debate as it pertains to college matriculation and, in particular, the matriculation of first-generation youth: offering academically rigorous courses and a climate of positive social relationships between students and school personnel. I take up each of these aspects in my interpretation of this analysis.

School size and course offerings. As my analyses reveal, larger schools are more likely to offer Calculus. The majority of large (1,000 or more students) rural schools had Calculus courses. The same was not true for medium (600-999 students) or small (under 600 students) schools. Small schools are not able to offer a wide curriculum, so they have to make decisions about the types of courses they are going to offer. If students are not interested in taking a Calculus course, it is not feasible to pay a qualified teacher to instruct a course that would only have a few students. Medium sized schools, on the other hand, may be in a better position to diversify their curriculum because they have more students and more teachers. That is not to say that medium schools are large enough to be comprehensive high schools (those which offer vocational, general, and honors courses). Even medium sized schools have to make decisions about what types of courses they can afford to offer. Those that decide to offer Calculus do so because there is a demand for such a course in their schools (Lee & Smith, 1997).

This suggests that these schools may have more academically rigorous norms than their counterparts which do not offer Calculus. Schools that do not expect their students to go to college are less inclined to invest finances in a course they do not expect their students to need or want. This is especially true if the student body is uninterested in

going to college. Instead, they concentrate their efforts on providing vocational options. Understandably, medium sized rural schools that offer Calculus more than double the college matriculation odds of their students.

School size and social organization. Course offerings are not the only school characteristic related to school size. The social organization of schools is also an important factor, especially in larger schools. Smaller rural schools in this study share a greater sense of positive social organization between students and school personnel (see Table 5.2) in part because it is easier to get to know one another in smaller environments. In a larger a school, it is easier for students to be anonymous. Schools may ease some of this anonymity by adopting programs and procedures that support positive relationships among students and school personnel. In this study I found that in schools where guidance counselors generally encourage students to go to college, the chances that students (especially those in large schools) matriculate increases.

This finding is important because very little research has been conducted about the role of guidance counselors in rural America (Schonert, et. al., 1991; Yan, 2002). In an effort to measure information sharing within schools, I concentrated my analysis on whether the guidance counselor specifically dispenses college advice. Thus I used an item that captures the degree to which guidance counselors encourage the student body to attend college. I am not necessarily suggesting that guidance counselors should encourage all students to matriculate. Instead I want to understand the school environment.

Each of findings support the idea first articulated by Lee and Smith (1997) that there is a threshold effect when it comes to school size. These researchers conclude that

students achieve most when they are in schools that are large enough to provide them with a variety of course offerings, but not schools that are so large that students get lost in the shuffle of day to day activities. My analyses support their findings that medium-sized schools may be better equipped to both offer a rigorous curriculum and pay students individualized support. However, it appears that both small and large schools can effectively serve their students with regard to college matriculation if the small schools offer academically rigorous courses and the large schools provide positive social networks.

Social Organizations

Perhaps my most important findings are about the social organization of schools. As I have already mentioned, having guidance counselors who encourage college-going is particularly important for students attending large schools. Consistent with findings in Chapter 4, a positive student-teacher environment is of special importance for students whose parents have less education. I explore possible reasons for this relationship in the following chapter. My tentative hypothesis is that such organizations are associated with increased opportunities for information channeling and norm modeling. Rural schools with positive student-teacher environments have tighter social networks than do schools with less positive environments. As Coleman (1988) articulated, such networks are more likely to provide students with opportunities for information channeling and norm modeling.

First-generation college-goers have less access to information about college through their families than students whose parents have gone to college. As a result, these students may rely on college encouragement from other sources. In schools with

positive social interactions between students and teachers, these interactions become powerful sources of social capital for students, made more powerful by a lack of such capital from family members. When schools do not provide this type of positive social support, students, particularly first-generation college-goers, may have to rely on the strength of their social relationships with individuals outside of their home and school networks to promote their matriculation, or they may simply go without this information. In rural areas, where the occupational structure is rigid, the availability of these weak ties is low because community members are unlikely to have gone to college themselves. As a result the social organization of rural schools may be critical for the college matriculation of youth with less educated parents. However, I do not know *why* or *how* school networks come to be important for matriculation decisions. I begin to explain this in my qualitative analysis, which I discuss in the following chapter.

Importance

In this analysis, I was interested in understanding whether characteristics of schools influence the college-going of youth from rural areas. Although educators are unable to influence many aspects of students' lives, they are able to influence those aspects that occur within schools, making this analysis especially important for those interested in increasing access to higher education for less advantaged youth. There are two aspects of schools in rural America that are important for the college matriculation of youth: the social organization of schools and school curriculum.

The social organization of schools is a concept that has received a good deal of attention in education research (Lee, & Burkam, 2003; Valenzuela, 1999). The goal of this line of inquiry is to determine whether positive school organizations improve student

outcomes. Here, I found that students (particularly those whose parents had less education) are more likely to attend college if they attend rural high schools with positive environments. This finding is important because improving school social organization is something that is within the control of schools. However, without knowing more about the nature of positive student-teacher relationships, it is difficult to determine exactly what an effective school program (aimed at targeting social organization) would entail. Thus, I attempt to uncover the nature of these relationships with my interview analysis (see Chapter 6).

Course offerings are also important to the college matriculation of youth from rural America. Attending schools with both advanced coursework and positive social networks provides students with an optimal learning environment. However, my findings about course offerings did not always support my hypotheses. In the subsequent analysis, I investigate the types of courses my interviewed students took and begin to paint a more complex picture of the ways students and teachers negotiate course offerings in rural America. Those findings expand on my conclusions here.

Limitations

Overall, this analysis supports my previous findings. Schools are important to the college matriculation of youth from rural areas insofar as they provide an advanced curriculum and a strong social network. There are, however, two major limitations to this study. The first is that it is not generalizable to all rural schools. A hierarchical analysis requires nested data. Schools which were represented by fewer than five students lacked sufficient power to be able to make claims about the school. As a result, I excluded those schools which had fewer than five students represented in the database. I was not able,

however, to discern any significant differences between the excluded and included schools.

The second limitation is that I was unable to determine what exactly it was about having a school environment that supported positive relationships between students and school personnel, which improved the chance of college matriculation for youth whose parents did not go to college. Quantitative data are limited in helping to explain why such relationships might be important, but I believe that it is necessary for researchers to understand the way these positive relationships play out to influence the matriculation decisions of rural youth. To make up for this shortcoming, I sought to elicit matriculation stories from rural youth that would help me understand the processes by which factors, like the positive social organization of schools, become important for students' matriculation decisions. I analyze their stories in the following chapter.

Chapter 6 Student Stories

In the previous chapters, I identified characteristics of individuals, their social networks, and their schools, that are associated with the college matriculation of youth in rural America. I also outlined a major limitation of these analyses. I was unable to determine *how* or *why* the characteristics I identified came to be important for students. For example, I found that having a positive relationship with a teacher increased the college-going chances of a student whose parents had not gone to college. I hypothesized that this finding may be a result of a teacher providing the student with information about college that he did not get from home. However, I had no way to “unpack” this link because I knew little about the nature of their relationship.

In this chapter, I sought to remedy this limitation by examining the life stories of first-generation college students from rural Michigan. Through the analysis of their words, I help explain how many of the characteristics identified in Chapters 4 and 5 have come to be important for these students. I am also able to uncover some additional factors that contribute to their matriculation decisions. Specifically, I address the following research question in this chapter:

What are the processes through which homes, schools, and communities affect these students' decisions to enroll in an elite college?

In answering this question, I make theoretical links between what students told me and the results of my national analyses. However, I am unable to do this without first identifying the similarities and differences between the interviewed

students and the students in the national analysis. Therefore, before I present the results of my interview analysis, I examine the ways that the interviewed students are and are not like the national sample of students from rural America.

Then, to contextualize my analysis of student stories, I present brief case studies for two of the interviewed students. Next, I report the findings of my interview analysis, paying particular attention to *why* and *how* different social networks came to be important for the matriculation of these students. I conclude this chapter with the implications of my findings.

Connecting the Local and National Rural Students

I studied different groups of students in this dissertation. The interviewed students represent a portion of students attending an elite public institution in the late 2000's, and the national sample represents all of the high school seniors in the United States who are from rural areas during the 1990's. I want to make comparisons between my results from the national analyses and my results from the local analysis, but the only way that I can do this is to determine whether the groups of students are comparable to each other. I address the following three questions to assess their comparability; all are in consideration of youth from rural areas:

1. Who are the rural students enrolled at the University of Michigan?
2. How do the rural students at the University of Michigan compare to the national sample of youth attending elite universities?
3. Are the interviewed rural students, representative of the group of first-generation rural youth at the University of Michigan?

By answering these questions I establish links between my local and national samples which allows me to compare the results of my main analyses.

Who are the Rural University of Michigan Students?

In Table 6.1, I provide some basic descriptive information about the 448 rural students attending the University of Michigan from 2003-2007. The students in this sample tend to: be White, have parents with a Bachelor's degree or more, come from families with incomes over \$60,000 a year, and are high achieving. Additionally, the majority of these students live more than 100 miles from the University, a distance too far to commute for classes. Therefore, for most of the students in this sample, attending the University necessarily means that they have to move out of their communities.

Students report on their reasons for going to college. The two most important factors in their decision to matriculate have to do with getting a better job and a desire to learn more about things that interest them. When I analyze their reasons by parental education, however, I find a slightly different story. The most important reason to go to college for 90% of the students whose parents have a high school degree or less is to make more money than their parents. Whereas, students whose parents have a Bachelor's degree or more report that the most important reason to go to college is the desire to learn.

Incoming freshman from rural Michigan report strong senses of self-worth, rating themselves as average or above average on indexes of their academic abilities, intelligence, social skills, health, and well-being. However, those whose parents have at least a Bachelor's degree are more likely to indicate that their academic ability is in the highest 10% of the population. These same students are also more likely,

Table 6.1 Demographic and Social Characteristics of University of Michigan Students from Rural Michigan (n=448)

Characteristics	% of Sample
Enrollment Year	
2003	18.3
2004	30.1
2005	30.1
2006	21.4
Gender	
Male	42.3
Female	57.7
Race	
Asian/Pacific Islander	3.1
Hispanic	1.3
Black, not Hispanic	1.1
White, not Hispanic	89.3
American Indian	1.6
Other	1.6
Highest level of Parent's Education	
High School Diploma or less	6.3
Some College	13.2
BA or more	80.5
Total Family Income	
Under 29,999	12.2
30,000-59,999	25.6
60,000-99,999	27.3
100,000 or more	35.0
Expected level of education	
BA	16.4
Masters Degree	37.7
Ph.D., M.D., J.D.	45.5
Other	0.5
Average grade in high school	
B-	0.2
B	0.4
B+	4.7
A-	25.2
A or A+	68.3
Distance between home and university (in miles)	
Under 50	2.0
51-100	12.7
101-500	79.5
Over 500	5.7

than students of less educated parents, to believe that their self-confidence is in the highest 10%. Indeed, similar to the national analyses, although the University of Michigan students from rural areas share a great many characteristics, there are

differences between those whose parents have and have not gone to college. The next step is to determine how similar the University students are to students nationally.

How Similar are the Local and National Rural Students?

In order for me to be able to talk between a national dataset, which represents students in elite colleges almost two decades ago, and a local dataset, which represents a very specific group of students attending one elite college, I first need to establish whether there are similarities between these two groups of students. Are the rural students who attend the University of Michigan similar to those who attend elite colleges represented in the NELS data? In brief, the answer is yes.

Table 6.2 Demographic Characteristics of Local and National Samples of Rural Students

Characteristics	% of CIRP/UM	% of NELS
Gender		
Male	42.3	51.6
Female	57.7	48.4
Race		
Asian/Pacific Islander	3.1	5.3
Hispanic	1.3	7.4
Black, not Hispanic	1.1	4.3
White, not Hispanic	89.3	83.0
American Indian	1.6	0.0
Other	1.6	0.0
Highest level of Parent's Education		
High School Diploma or less	6.3	7.8
Some College	13.2	31.0
BA or more	80.5	61.2

I analyze these data through basic descriptive statistics, comparing the rural NELS students who attend elite colleges with the rural CIRP/UM students¹ (see Table 6.2). I simply want to determine if the students from these different data sets are like one another. Based on the available information in the CIRP/UM and NELS databases I find that there are some differences between these groups, but generally they are comparable.

I compare these groups of rural students using four demographic indicators: gender, race, parents' level of education, and family income. I find that more women attend the University of Michigan than attend the elite colleges represented by the NELS dataset. However, the differences between the number of males and number of females in each dataset hovers around 50%. In each dataset the students are predominantly White and the majority of parents have a Bachelor's degree or more. Although most parents have a Bachelor's degree, it is true that the parents in the CIRP/UM data are more highly educated than the parents in the NELS data. The difference here does not seem to be a result of having substantially fewer parents without a high school degree. Instead it is a result of having fewer parents with some post-secondary education. There is more than a ten-year span between the collection of the NELS and the CIRP/UM data that I use here. Therefore, the increased level of education found with the CIRP/UM parents could be a reflection of the national trend of people acquiring higher levels of education (U.S. Census, 2009).

Total family income is measured on different scales in these datasets. Income categories for the CIRP data overlap with multiple income categories in the NELS data, which makes it impossible to make an equal comparison. Although the majority of all parents earn at least \$60,000 a year, the families of University of Michigan students have higher incomes than families nationally. However, it is important to keep in mind that the national income data are measured in 1991, and inflation needs to be taken into account when making comparisons to income in 2003. The mean income in the United States in 1991 was \$37,922 and in 2003 was \$59,067 (Census, 2006). This is a difference

of \$21,145 or almost a 56% increase in mean salary. Given these statistics, it seems that the families represented in both sets of data are comparable.

Although the students are relatively similar demographically, my national student analysis indicates that demographic information is not the sole indicator of college-going. Thus, I also make comparisons between these two groups measuring how much time students spend on homework, their extracurricular participation, and their attachment to their homes. Again, I find similar trends.

The students in both the elite NELS and the CIRP/UM samples tend to participate in one to five hours of extracurricular activities each week. Both groups tend to spend from three to six hours on their homework each week. Finally, all students report that the opportunity to leave home and experience something new is a major impetus in them wanting to go to college. Considering this information, there do appear to be some differences between the national and local students from rural areas, particularly with relation to gender and income. However, none of these differences is so substantial that it prevents comparisons between the students in my national and local elite data samples.

Representativeness of Interview Students

Although my local and national samples are reasonably comparable, I did not interview all 86 of the first-generation college-goers at the University of Michigan. I interviewed a sub-sample of 13 students. Thus, I also need to determine how representative this group of students is to University of Michigan students from rural areas. These 13 first-generation students share many similarities with the “typical” first-generation University of Michigan students from rural areas.

Table 6.3 Demographic Comparison between all First-generation Rural Students at the University of Michigan and the Interviewed Students

Characteristic	% of 1 st generation CIRP/UM students	% of Interview Students
Gender		
Female	64.0	69.0
Male	36.0	31.0
Race		
Hispanic	3.5	0.0
Black	2.3	0.0
White	89.5	100.0
American Indian	2.3	0.0
Other	2.3	0.0
Miles from home		
50 or less	1.2	0.0
51-100	16.5	31.0
101-500	80.0	69.0
Over 500	2.4	0.0

In Table 6.3 I provide some basic demographic comparisons for the first-generation rural students at the University and the students I interviewed (for additional demographic information on the interviewed students see Appendix D). It appears that the interviewed students are at least demographically similar to the 86 possible first-generation students. The majority of students in both samples are White females. I should note, though, that there are a total of 9 students in the sample of 86 who do not identify as White, whereas each of the interviewed students is White. Additionally, the vast majority of students live between 101 and 500 miles away from the University, although the interviewed students are more likely to live closer to the University than the 86 CIRP/UM students.

I obtained occupational information for the parents of the interviewed students (see Table 6.4). These students come from primarily blue-collar families. Their parents' occupations range from unemployed or disabled to operators, laborers, and policemen. Generally speaking the fathers held jobs with higher occupational prestige than the mothers (Stevens & Cho, 1985).

Table 6.4 Parental Occupations of Interviewed Students

Father's Occupation	Mother's Occupation
Postman	Retail
Factory/line (4)	Stay at home mom (3)
Real estate agent	Bank teller (2)
Mechanic (2)	Unemployed (2)
Unemployed (2)	Clerical worker (2)
Unemployed/disabled (2)	Factory/line (2)
Police officer	Nurse's aide

I find a similar occupational trend for the parents of the 86 first-generation youth from rural areas at the University. In both instances the most commonly held occupations for fathers are semi-skilled or unskilled workers. More fathers in the CIRP/UM sample are employed in a business field, primarily in management positions, and a higher percentage of the interviewed students have unemployed fathers. Mothers' occupations are quite similar between the interviewed groups and the CIRP/UM sample of 86. Mothers' occupations are split between being homemakers and working low-level business occupations, with slightly more mothers in the CIRP/UM sample working in semi-skilled or unskilled labor positions.

Given these comparisons, the students in my interview sample seem to be relatively representative of the first-generation students from rural areas attending the University of Michigan from 2003-2008. I cannot make the case that my interview, CIRP/UM, and NELS samples are equivalent. However, I believe that I have made an argument for these groups being similar enough that I can make theoretical linkages between my national and local analyses. These similarities help to compensate for the major limitation of my national analyses - - I am able to suggest that my findings from

the NELS data have relevance to today's rural youth. I use the interview data to help explain why constructs, illuminated in previous analyses may come to be important for the matriculation of first-generation rural youth. Given the focus of this dissertation on social capital, in the remainder of this chapter I present the results of my interview analysis, paying particular attention to the ways social relationships influence students' matriculation stories.

Two Students' Stories

As a way of contextualizing these stories, I provide brief descriptions of two of the students' experiences below. It is important to note that these stories are first person accounts, as are all of the stories in this chapter. They are the stories of how the students experience their surroundings, not necessarily how others involved in their stories will interpret those same experiences. Parents and teachers for example, may recount the stories and experiences quite differently than the ways the students recount them. I provide little interpretation of these two cases because I want the reader to gain an understanding of the students themselves, not my interpretation of their words. I leave my interpretations for subsequent sections of this chapter.

The Case of Annie

Annie was from North Triadelphia, a northern Michigan community of 2,000. She described her high school as, "Very small. Um, it was one building. I keep talking to people [at the University of Michigan] and they're telling me how they had multiple buildings in their high school. I had two hallways. I'm like what is this. It was attached to the junior high, um, really small, small classes". Her family lived in North Triadelphia for generations:

Um, my mom and dad are both from North Triadelphia. Both my grandparents, sets of grandparents, used to live there. And uh, let's see. One of my dad's brothers lived there. And um, my mom's side of the family actually was like one of the, I guess, founders of the town. I don't know. They've been there for a long time. So yeah I have a lot of family in North Triadelphia.

None of Annie's family members went to college. She said that her parents "weren't involved in school", but, "(t)hey were always reading and playing games and you know, teaching me how to do stuff and really stressed college as an important thing". Thus, even though her parents did not tell her about the college-going process, they encouraged her to attend.

Annie said she always did well in school and that the school personnel took notice. Initially, she was placed in an advanced mathematic class:

And um, only like, the way math works at my school. You would, like the 6th graders, if you were really smart in the 7th grade, they would put a select few of you in a Pre-Algebra group in a different class. And slowly more and more would drop out into the lower levels. Eventually, whoever ended up in Calculus just did.

Annie not only ended up in Calculus, but also in the two other advanced courses offered in her high school. Later, in high school, she believed her guidance counselor also noticed that she was intelligent and thus recommended her for participation in a week-long engineering camp.

My counselor, he sent me to an engineering camp that I actually went to. It was kind of like he looked at me and was like, 'oh, you're a smart kid, you should be an engineer'. And so, he sent me off to engineering camp. I said, 'alright', because I didn't know. I was just like, 'sure'. I think it was my junior - - summer of my junior year. I didn't know exactly what I wanted to do so I tried it out. I just got the feeling it was because I was a smart kid that I would go to engineering. And so, I got here and [studied engineering] and it's not what interested me at all.

The encouragement she received from these individuals, coupled with her parents' expectations, helped her to understand that she was intelligent, and was expected

to go to college. However, it was her participation in an extracurricular activity that caused her to realize she wanted to go to a large college:

Annie: Well, I guess when I was maybe in seventh or eighth grade I was in 4-H and they have, uh exploration days where you go to Michigan State University for a weekend and do, you know, fun classes or whatever you want. So I mean, that really, from then on I knew I wanted to go to college. So that's kind of what sparked my interest in going to college.

Sarah: What do you mean when you say you knew you wanted to go to college from then on?

Annie: I just, it kind of just showed me that, you know, furthering your education is really important. So, yeah, I did like the campus and I like the idea of dorm life, and just that sort of thing. So I guess that's kind of how it happened.

This experience provided her with her first exposure to a 4-year college and from then on she tried to do what she could to learn about going to college.

Most of this information came from searching the internet. She stated:

I remember doing a lot of internet research, but by myself pretty much. In high school, I think we did some, like we had those placement tests that tell you what you'd be interested in [as a career] but as far as picking out a college, I don't remember having any definite college talks or anything.

When I asked her how she decided where to apply to college, Annie said that she did not apply to schools near her home "because they're like North Triadelphia. I just, I didn't want to stay in North Triadelphia. There's nothing to do there." Annie was interested in applying to schools that would provide her with new experiences.

Eventually, she and six other students from North Triadelphia ended up getting full scholarships to the University. She attributed her acceptance to a grant:

I think what happened was, I heard that U of M got a grant from the state to give scholarships to kids from rural places and that's why we all got them. Because, we were a smart class but no one had ever gotten in [to the University of Michigan]. We all got full tuition scholarships. And no one had ever gotten that from North Triadelphia before. And it was just an absurd number to have six of us go. So there were a lot of us that came here. But, most, if they go to college, most people from North Triadelphia go to Central or Saginaw Valley. Um, and that's pretty much where they go, but most don't go at all.²

She knew that at least one of the six admitted students subsequently dropped out of the University, "she transferred because it was too hard for her". Annie also had difficulty academically with the transition to the University of Michigan.

The work was easy in high school. All my schooling was so easy. And then of course I come to U of M and I get beat up. I'm just now, just at the beginning of my junior year, transitioning into 'oh this is what is expected of me', 'this is how I should study'. When I first got here, my first year, was really hard.

However, she sought out the help of a learning center and her studies began to get easier.

The Case of Tim

Tim grew up in Woodsdale, a community of about 2,330 people. His parents never married, and his father got custody of him while he was an infant. He says:

Basically, almost 80-85% of my entire family is in Woodsdale County and the surrounding area. It's just, it's ridiculous. So my mom always lived about five minutes away from me, from where my dad and I have always lived. Um, she recently was in the apartments five acres behind our house. My grandma is five and a half minutes away. It's just, everyone is there.

Like Annie, no one in Tim's family went to college, so they were not able to provide him with information about the matriculation process. He said that his

father “had no idea” how to advise Tim about how to get to college. However, he reported that his father always stressed the importance of education.

He’s always pushed me to do my best, but he’s never had a real standard because he was always an average student with C’s. He always knew I was going to college and I just ended up liking school so I think I was going to go regardless. But he’s always pushed me to do well in school. Always making sure, ‘How’s everything going, are you doing your homework first?’ and whatnot.

Tim excelled in school, “I was valedictorian. I had one A- all the way from 7th grade to senior year”. He also enrolled in the two AP classes offered by his high school, English 11 and 12. Even though he was valedictorian of his school, Tim had a difficult time finding teachers who would write him decent letters of recommendations for college. He reported:

There were a couple of teachers that I liked and that I thought liked me a lot more. So I asked them [for letters of recommendation for college]. One was the math and science teacher, and then another one was an English and psychology teacher. But when I got the one from the math and science teacher it was like two sentences.

The English and psychology teacher initially wrote a letter but later rescinded it after Tim participated in a high school prank. Subsequently, he was able to get another teacher to write “a really nice” letter.

However, Tim remembered having help in getting to college. He said, “I don’t really remember the time when I specifically thought, ok, now is the time to go to college, but it just seemed like it was always buzzing in the air because my friends were, we competed with one another, encouraged each other to do better and see who got the higher grade”. He reported that all of his close friends were college-bound, even though about two thirds of his class did not go to college. Some of his close friends knew more about going to college than he did, so he simply took the classes they took. When he and

his peers had additional questions, he said, “(w)e’d also ask a lot of teachers because we knew they went to college of some sort”. One teacher even read over his college essays.

Tim attributed his decision to go to college, in part to his desire for success and financial security, as he explained in the following excerpt:

Tim: I’ve always just wanted to be the best and be powerful, in a way for good purposes, but still be powerful and I knew college would [long pause]...

Sarah: Would help?

Tim: Would have to be. All through high school I said [I wanted to major in] pre-med because I always watched ER in high school on TV, and I wanted to help people, but I wanted to be rich and prestigious and whatnot. So I wanted to be a neurosurgeon which is the best doctor.

He understood that in order for him to have the financial success and prestige he desired in life, he had to attend college.

His decision about where to go to college was also somewhat based on money.

Tim’s father secured college funding for Tim through the Michigan Education Tuition (MET) program. To reap the greatest benefit of the MET program, Tim applied to instate institutions, but he described the rest of his application process in the following way:

I started filling out applications and I didn’t research any of the schools. I didn’t know that I should, about programs, and tuition, and all that stuff. All I knew was ok, well I want to go to college so let’s apply to Eastern because I should be able to get in there no problem. Let’s apply to Michigan State, I should be able to get in there, but that’s a better school by reputation, word of mouth. And then let’s apply to U of M because that’s the best. So yeah, I applied to those three schools. Didn’t really look, care too much about any of them, had no real preference. Just go to the best one I could. Um, I got into U of M December 10th of ‘03. It was one of the best days of my life, just exciting.

Even though he was excited to go to the University, his transition was not an easy one:

I was great in high school, come here and I'm like the 52nd percentile. I blame some of that on my high school education. The educational program was not challenging at all. It was a joke in some ways. So, like an example would be math. We had Algebra and Trig. We didn't have anything that was specifically Pre-Calc. So I came here and took the Pre-Calc class.

He felt that he was academically unprepared for some of the basic level courses he was required to take in college. Like Annie, Tim sought to remedy this problem by attending a learning center.

At the time of the interview, Tim was deciding where to go to law school. He said he was struggling about the decision. He wanted to go to Suffolk, a school in Boston, but he felt an obligation to stay near Woodsdale to encourage his younger brother to go to college.

I applied to Suffolk and I was originally thinking I'd go there. But my brother's fourteen and I kind of want to be that college guidance to him that he doesn't have. I know our mom doesn't care. And, I don't, his dad had three kids about ten years before him and they turned out to be bums, I'll say that, in my opinion, I'm sorry. So I really don't want my brother to end up that way.

Ultimately, Tim decided to enroll in law school in Michigan, rather than Suffolk, where he was also accepted, in part so he could remain an active participant in his brother's life.

Summary

The stories of these two students highlight many of the factors that the interviewed students generally reported as being important in their matriculation decisions. Both of these students grew up in communities and attended high schools, where college-going was not the norm. They reported that the majority of their peers did

not go on to college (even though their closest friends did) and that their high schools offered few advanced courses. Nevertheless, both students had a strong desire to go to college, although, the motivation for this ambition seemed to differ between the students. One was fueled largely by a desire for occupation success, whereas the other seemed more interested in investigating life outside of her community.

It seemed to be the case that both students were exceptional, particularly in the context of their high schools. They enrolled and did well in the most academically rigorous courses their high schools had to offer. However, their ability to get admitted to the University of Michigan was not solely the product of their academic prowess. Each story provided evidence of various sources of social capital that the students used to help them in the matriculation process. Both Annie and Tim reported that there was never any question about them going to college. They always knew they would attend because their parents expected that they would. As I alluded to in Chapters 4 and 5, parents helped to form students' ambitions to go to college when they established that college matriculation was a behavioral expectation. It seemed to be the case that the expectations held by Annie and Tim's parents helped both of these students form their own ambitions to matriculate.

Annie's ambitions were fueled by her outside experiences. She reported that her interest in college was peaked when she participated in an extracurricular activity, 4-H. This experience took her to a major university campus, which provided her with the opportunity to imagine herself on a college campus, an idea she liked. In this way, participation in extracurricular activities helped to expand Annie's notion of what it would mean to go to college. Her parents had already laid the groundwork. They had

established college-going as an expectation, but attending 4-H competitions allowed her to realize that she wanted to go to college at a large university.

Further, akin to Chapters 4 and 5, both students were provided with essential information and assistance from social network members that allowed them to pursue their desires for a college education. This assistance was somewhat haphazard in that the students were aided by people who just happened to like them, rather than being aided by a guidance counselor whose job it was to guide them through the matriculation process. Nonetheless, both Annie and Tim received enough assistance, through their social connections, to be able to matriculate to the University of Michigan. In the remainder of this chapter, I present the results of my interview analysis, in which I investigated each of the factors I have just briefly mentioned. It is through this analysis that I began to understand how social networks could have such a powerful influence on the matriculation choices of first-generation college-goers.

What are Students' Community and School Contexts?

In the interest of understanding how students navigated the experiences in their lives which contributed to their decisions to go to college, I interviewed thirteen students enrolled at the University of Michigan - - all first-generation college-goers from rural Michigan. In this section, I analyzed the students' stories to see the types of community and school contexts in which rural students found themselves, with the understanding that these contexts helped to inform the life decisions of youth. The students described communities that were akin to those depicted within the 'ruralness' literature in two primary ways. The first was that they described their rural communities as having closed social networks, often marked by intergenerational closure. The second was that some

rural community members not only did not hold college-going as a norm, but also actively discouraged college matriculation. I discuss each concept below.

Both Annie and Tim reported that their families lived in the same community for generations. Indeed, all but one of the interviewed students had this experience. Twelve of the students were raised in community contexts that were marked by their own family's intergenerational closure. As Kim put it, "Most people were fairly interrelated in the area. Most of them were um, either distantly related or you know, they could probably name off five other people that went to the school that they were related to." Coleman (1988) said that being raised in such a context provided students with a greater capacity for social capital because students' social networks were more likely to agree upon what constitutes 'appropriate behavior'. However, the interviewed students reported that attending the University of Michigan did not fall within the guise of an 'appropriate behavior' for their communities and schools. The following excerpts illuminate this point.

April explained how a community member tried to limit her own educational desires while telling me about Meme, her best friend growing up.

I would definitely say out of like all my friends, Meme had more passion. I'd love to volunteer in Africa, and Meme's the one who was like, 'I really want to do it too'. But her boyfriends told her, 'I don't think you can, Meme', and her mom told her that too. And I remember her mom, when we were in 4th grade, and we were on her pontoon on the lake. And I was always like, yeah, I want to work in government and I want to, like, go to a big school some day. And back then I was saying Harvard, but her mom was just like, 'April, I'll be honest, I've only seen one person leave this town and do exactly what they wanted to do.' She's like, 'I'm rooting for you honey, but it's going to be tough.'

Even though this community member did not tell April she could not go to Harvard, the statements were certainly discouraging. Similar sentiments were expressed by high school personnel. Gary reported that in the 9th grade he had a meeting with his guidance counselor to discuss what he needed to do to end up matriculating to the University of Michigan. The following was his memory of that conversation:

In my background, the way I understood the college system, I didn't even think high school students applied to Michigan. I thought you had to go to two years at, you know, either a community school or like a Central Michigan and then transfer to Michigan. Um, so you know, I went and had a conversation with the guidance counselor. You know, he's the one who told me, you know, 'Gary, I'm going to level with you. Nobody from this town has gone to Michigan'. Because like, I've loved this school since I was a kid, I wanted to go to Michigan. So I went and talked to my counselor, and he's like 'Gary you're a real sharp kid, but I'm going to level with you. People from this high school just don't have what it takes to excel at Michigan'.

Four other students told stories like Jessica's, where an administrator made a substantial mistake with her college application that could have prohibited her from going to college:

And my principal was like, 'I don't really think you should apply to Michigan'. I said I had good ACT scores, so. He said, 'it's not like in the percentile', you know Michigan's what ever you needed, 'you got an 18'. I was like, 'oh my god, you sent in', that wasn't my ACT score. It was like my class norm. It was the class median or whatever and he sent that instead.

Had Jessica not been proactive about her college applications, she would likely have never known that this error had occurred and the error would not have been remedied. Jessica later explained that she felt the norms of her high school dictated starting a family rather than going to college.

We had a really high pregnancy rate and so we had a day care/nursery sort of thing. And you could take classes in that, learning how to be a parent.

That was much more, that was like, those were the sort of things that were stressed, that and not college.

By the end of her junior year in high school, Jessica had taken all of the advanced courses her high school had to offer.

Mary reported being encouraged to go into the military instead of college after high school even though she explicitly told her teachers that she wanted to go to college.

My teachers were like, take the ASVAB [Armed Services Vocational Aptitude Battery] and see how you do. I didn't even know what it was, but I said okay. And like, me and my friend got like the highest score possible on that test. And then like, the army recruiters kept calling us and we were like, 'No we just took the test because our teachers told us to. We don't want to go'. Whenever the recruiters came to our school they said they needed to see me in the office. And I was like 'nooo'. I'd get down there and they're like, 'why don't you want to join the military'? And I'm like, 'I don't like push ups, I want to go to college.'

What was frustrating to Mary was that even though she had repeatedly told her teachers that she did not want to go into the military, but instead wanted college, they continued to excuse her from class when the recruiters came and encouraged her to think about joining the military.

Twelve of the thirteen students told stories about being encouraged to do something other than go to college. These stories led me to conclude that these students grew up in community and school contexts that did not necessarily promote college matriculation. There was some evidence that school personnel actively discouraged students from attending the University of Michigan and perhaps even college generally. Further, students reported that their high schools did not offer many of the advanced or honors courses typically associated with college matriculation. Evidence of the absence of these courses will be provided when I report on the mechanisms by which students completed a college preparatory curriculum. Given these contexts, how did these

students end up in college? I sought to address that question by examining students' life stories. I found that despite what their demographic characteristics might indicate, my respondents' life experiences provided them with many opportunities for social capital. I devote the remainder of this chapter to describing *why* and *how* social capital came to be important for the matriculation of these youth from rural Michigan to the University of Michigan.

What Motivates Students' Educational Ambitions?

In spite of their school and community norms, the interviewed students' held ambitions of a college education. As my review of the literature and the Chapter 4 analysis demonstrated, rural students' ambitions were significantly related to their matriculation. Similarly, each of the students in this analysis, said that they had a strong desire to go to college. Chrissy said: "I don't know what it was, but something happened before middle school, but I started looking at colleges when I was in 8th grade. Like I had one picked out." Or as Holly said: "I just always knew that I had to go to college. I had to." I wanted to understand why students developed these ambitions, in other words, what motivated rural students ambitions to go to college.

In my national analysis, for example, I found that the desire for future financial security was strongly related to college-going. I explored my interview transcripts to see how students talked about why they wanted to go to college. My analysis of the interviews revealed that students talked about what motivates their college ambitions in two ways. The first was in reference to wanting a financially stable life. The other was a desire to gain a wide array of social and cultural experiences. Additionally, it became

clear that young men's aspirations fell into one category, whereas women's fell into another.

Male students seemed to talk about finances more than the female students. Coding for words related to money, I found that male students used these words on average 55.25 times per interview, whereas the women used these words 35.5 times on average. One woman, Chrissy, did not fit this pattern, as she used money-related words 96 times in her interview³. When I removed Chrissy from this comparison, I found that women used money related words 28 times per interview, compared to the 55.25 times used by men. Below, I discuss the ways that men talked about finances motivating their ambitions, then I examine the ways women framed their discussions of aspirations.

Men's Aspirations

The desire for financial and occupational security was repeatedly mentioned by the students as motivation for going to college. Four of the students had parents who worked on the assembly line at an automobile factory and two others had parents who worked as mechanics for the industry. As a result of their parents' jobs, these students understood the changing nature of the job market in Michigan. At the time of these interviews, factories across the state were closing, the auto industry was crumbling, and thousands of jobs had been eliminated. At the time of the writing of this dissertation two of the big three companies had filed for bankruptcy and were trying to restructure. Many of the factories that supported the auto industry were located in rural Michigan, and local economies were dependent upon its sustainability.

Although this economic dependence and concern over the industry's future was not lost on the students I interviewed, these circumstances were particularly troubling to

the male students. Indeed, this understanding fueled the males' desires and decisions to go to college. As Jacob put it:

It's, I mean coming, uh, growing up in the world that we grew up in it's like you know you had to go to college or at least try to go to college to have an opportunity. It wasn't, we knew that you couldn't just go get out of high school and get a good job. It wasn't like that anymore. That was evident.

Similarly, Josh said:

Sarah: And you said your parents have always communicated to you that you were going to college. How did they do that?

Josh: I don't know. I think it was just kind of like an expectation that that's what I needed to do to get a job. Um, because neither of them had gone to college, but they were both really lucky that they had jobs right out of high school. My mom started working at a bank and um, my dad worked at Delphi. And it was just kind of accepted that like Delphi wasn't really an option anymore, or GM at the time, or not Delphi in our area anyway. Because it was just the economy and all the auto jobs are leaving the state and stuff like that. ... Um, and so, I think it was just kind of assumed that if I wanted a high paying job where I could like move out of [the community] I needed to go to college.

Their comments reflected the fact that historically people from their areas had been able to attain employment directly after high school. The four men interviewed for this study, all came from families that had always lived in the community in which the men were raised. Their families' educational histories were interwoven with the occupational structure of those communities. For their families this meant that as long as the occupational structure of the community remained the same there was not necessarily a financial urgency to go to college. The occupational structure had changed dramatically in the last few decades, though, and males who may have otherwise been able to work in a factory thirty years ago, were no longer able to do that. In order to attain gainful employment they had to start looking at alternative professions, even if that meant having

to leave their community. For these students, college served as a gateway for that occupational attainment.

One male student directly linked his educational ambitions and his family's history with financial insecurity. Gary was a senior when I interviewed him. When Gary was three, his father was permanently disabled in an industrial accident. He continued to need full time home health care, and as a result, Gary's mother stayed home and cared for his father. His family lived in the same community as his extended family who, according to Gary, helped to financially provide for his immediate family. His grandparents gave them their family farm house and aunts and uncles helped to pay the bills when they could. By middle school, Gary worked odd jobs; by high school he stocked shelves in the local grocery store before school and worked in the hardware store after school. As we spoke, he told me about the things he wanted to achieve in his lifetime: financial security, moving his parents into a facility where his father could be cared for by a staff rather than his mother, and starting family of his own. After he identified these goals, we had the following conversation:

Sarah: So which of those things is most important to you, if you had to pick one?

Gary: Financial stability. Knowing that at the end of the day, you know, when my kids are growing up, I don't have to tell them, you know (pause) I mean I'd still enforce it hey, if you want those new shoes you go work for them, and I have every intention of that. I don't want to have spoiled brats by any means, but on the other hand, being able to provide for my children. And if they say, oh I'm cold, or I'm hungry, not ever having to think, you know, where is the nearest Goodwill.

Gary recounted the many times in his childhood he did not have things that he needed. He recalled his family having to rely on others to have their basic necessities met and he did not want to live like that anymore. Gary stated his reason for going to college was:

Gary: I just knew that I wouldn't be satisfied with my life if I wasn't making at least one hundred grand a year, you know, and just, cause, one of my major goals is to be very, not only be very wealthy, that's a goal of everyone I guess, but I want to be able to, you know, retire my parents, buy them a nice condo or something down South where they never need anything again. Because my parents, we were a very, very unwealthy family growing up, just getting by hand to mouth. And I always knew that I didn't want that lifestyle.

Gary linked financial ease with satisfaction. He did not believe he would be content until he became not only financially secure, but also wealthy. At no point in his interview did Gary talk about having a job that he enjoyed or found intellectually stimulating. He only talked about finding a job that allowed him to earn a great deal of money, so he could take care of himself, his future family, and his parents. I do not want to insinuate here that Gary would be satisfied in a job that he hated, I have no indication that he would be. I suggest only that the most important thing to Gary was that he made enough money to get his parents out of their current situation. He saw college as a step in that process.

Women Ambitions

The female students did not dwell on money in the same way the male students dwelt on it. Women were more likely to talk about their aspirations to go to college, in terms of wanting to gain cultural experiences. Chrissy, explained how a desire for cultural experiences influenced the way she chose where to go to college:

But in 8th grade I had one picked out. It was Arcadia in Pennsylvania. I don't know. I think originally I based it off of study abroad programs. I really wanted to do study abroad. Like, if they didn't have study abroad programs, I wasn't considering them.

Chrissy's desire for cultural experiences was so great that it initially overshadowed any other aspect of colleges (i.e. academic rigor, social life, etc.). Indeed she reported that

she did not consider other characteristics of higher education institutions until after she was accepted into a group of colleges which all offered the opportunity to study abroad.

These women explain their frustration with what they perceive to be the mindset of their rural communities, “Like they’re so closed minded and like, hateful of like, so racist and prejudice and it’s just awful”[Mary]. This frustration seems to be linked to the restraints women feel exists for them in their community. Going to college represents the chance for them to gain experiences outside of what their communities could provide them.

As Holly says:

I, I don’t know. I just knew that I wanted to do better than where I was from. You know everyone there is yeehaw and I’m not going to be that. So I knew U of M would give me plenty of opportunities. And it was huge and exciting and I wanted something different. ... People are very closed minded there. People are petty and stupid. They don’t set goals for themselves and I don’t want to be around that anymore. I’ve had enough of that.

April echoes Holly thoughts:

I think small towns have like an air - - like in extraordinary areas any kid believes you can do anything - - and then small towns have this air of like, that doesn’t really happen to real people you know? Real people have to farm or work at Glen’s and you know, they have this, like that doesn’t actually happen. Like, it just, it really makes me mad. Because I’m like, it’s only because you’re here and you can’t see it that way.

These women want to be in a position to have greater opportunity. Unlike the men, they do not measure that opportunity in terms of financial gain. Rather they think of it as a chance to have new experiences, see new things, and experience life in a different way. They see the community as constraining their perspectives and their knowledge and by leaving the community they seek to achieve the knowledge they feel they currently lack. This sentiment is represented in an exchange with Crystal.

Crystal: It, it is, it's very safe, but it's not a very, it's not an environment that's very conducive to any kind of social learning or really anything.

Sarah: How so?

Crystal: Um, well everybody's pretty homogenous really. Like I appreciate people at the individual level but um, everybody really held the same kind of beliefs and there wasn't any economic like, any real economic diversity or any um ethnic diversity. So there really, there wasn't anything to do. No way to like, expand, any, any aspect of your own self I guess.

Crystal wants to experience a life outside of her community and indeed outside of the state of Michigan. She talks openly about how exciting it was for her to come to the University and meet people of different ethnicities. She specifically cites learning about cultural norms from her Indian and Palestinian dorm mates her freshman year; she had never met someone who was not from the United States before. For her, and most of the women, going to college seems to be about expressing themselves. They do not feel like their thoughts or beliefs are represented in their communities and this motivates their higher education ambitions. They think college will provide them with greater affordances than their communities.

I am not certain why these gender differences exist. It could be that female students feel like they have to stifle their belief systems more than the men. It could also be that the women do not feel the financial pressures the men do, and, therefore, are freer to think about the intellectual opportunity going to college will provide. Even though all of the students interviewed for this study have a desire to go to college, it seems that the motivation behind those desires is different for the male and female students. However, students do not matriculate to college simply because they are motivated to acquire a higher education. College matriculation is the culmination of a series of steps undertaken

by individuals to help ensure higher education attainment. When explaining *how* they got to college, many students link their decision to matriculate to their own uniqueness. I explore this idea in the following sections.

To What Can the Matriculation of Rural First-Generation College-Goers be Attributed?

It became apparent during the course of these interviews that these students are all exceptional within their communities. They explain that they matriculated in part because they are unique from their high school peers and community members. It is possible that they emphasize the differences between themselves and their community members because of their understanding of this research project. They are conscious of the fact that I interviewed first-generation college-goers from rural areas about the resources they use to get to college. By virtue of this, they understand that I identified them as being special. However, I believe their feelings of difference are linked to more than that. Their decisions to go to college are intricately linked to their notion of being not only unique, but somehow better than those in their communities

It is certainly the case that in many instances these students are different than their high school peers. They are the valedictorians and salutatorians of their classes. They are presidents of 4-H clubs and their school's National Honor Society Chapter. They are first runner up for Miss Michigan, and have acquired scholarships to go to foreign countries while still in high school. From every indication, these students are exceptional youth as indicated in the following conversation.

Jennifer: Um, there's just cheerleading, like National Honors Society, I was the class president, um

Sarah: Of National Honors Society?

Jennifer: Well I was the president of National Honors Society *and* of ...

Sarah: And of the class?

Jennifer: And of my class. And um...

Sarah: And valedictorian...

Jennifer: Yeah, and student council representative.

Jennifer is a class leader both academically and socially. The student body's decision to elect her as a leader for these organizations is an indicator that those around her, also feel she is exceptional.

Chrissy, also the valedictorian of her class, separates herself from her friends through her intellectual ability. In talking about her experiences taking the ACT, Chrissy says:

It started out in middle school. There's ... if you're in the top ... I think there might have been like twenty of us that they had take the ACT, in like 8th grade, just for kicks and giggles. I don't know. But I did that and I thought it was cool 'cause I got like, I got a 24 in 8th grade, and that was like better than other people. Some got like 3 (laughs), so I was smart, and so I knew I should go to college.

Her statement reflects that she is intellectually above her high school peers as early on as middle school, and that she is well aware of this distinction. This statement is an indication that she understands that she is unique, or even better than others in her peer group.

An interaction with Gary further demonstrates the direct link between students perceiving themselves as different and their ultimate decision to go to college.

Sarah: So you said you always knew you wanted to go to college?

Gary: Yeah, I knew from about third or fourth grade. Like, once I realized that I was smarter than all of my peers (laughing). Really! I mean, that

sounds terrible! And you know, I wish I were lying. That sounds awful doesn't it? But once I realized I was in a completely different class than all of those around me, from then on I knew I had to be successful, had to go to college, because if I couldn't, then who could?

Gary's statement reveals that he perceives himself as being smarter than his community members and he attributes his college matriculation to this difference.

The ability of each student to get into the University of Michigan indicates that they very likely are special. However, there is a disconnection between what the students believe about their matriculation and what their life stories reveal. Yes, these students are highly motivated, and yes, they are exceptional students, but their matriculation is not solely a product of these influences. Some students are lucky enough to gain social capital through the guidance of key individuals who help put them on the path toward college.

Parents' Expectations

My national analysis demonstrated that although there is a relationship between parents' level of education and students' college matriculation; it is a relationship that can be mitigated by other factors. My particular focus has been on the concept of social capital and how it hastens or impedes a student's ability to go to college. Through my interviews of first-generation college-goers, it became clear that these students did receive some form of college related social capital from their parents.

All students in my local sample report that their parents actively encourage college education for their children. Students talked about their parents' expectations in a variety of ways, but more often than not, they spoke about expectations with regard to money. Specifically, students talked about their parents' expectations in relation to the

procurement of college finances, and the desire for the student to have a better life. I discuss both of these here.

At some point during the interviews all of the students report about the ways they finance their college education. However, two of the students highlight the role finances play in their matriculation at the onset of their interviews. Interestingly, their stories are similar. In both cases, the students' parents procured financing for their child's education while the child was an infant. Further, both sets of parents repeatedly remind their children that this money is set aside. In Tim's case tuition security comes via a statewide tuition planning program:

Sarah: If you were to imagine that you were writing a book about your life and you wanted to tell people about how you got to college, what would you tell them?

Tim: My dad, he's number one. Um, so he, he knew from about the time I was born I was going to college because he got the MET program when I was I think about 3 months old. ... He got the 4-year program so I'm lucky enough to go here. I think he spent about \$7,000 back in '85 and then it paid for four years tuition.

Tim reveals that his father reminded him frequently about the MET program telling Tim that all he had to worry about was studying hard, so he could go to a good college. Tim interprets both his father's actions and his words as expressions of his aspirations for Tim's educational attainment.

Jessica's story reveals a similar pattern:

Sarah: Imagine that you are writing a book about your life and you want to tell people about how you got to college, what would you tell them?

Jessica: Um, well it was never really an option. Like neither of my parents went to college but um, as soon as they had girls, my dad, and we lived in the boon docks. So he decided that like he was going to have funds so that, he couldn't go cause he didn't have the money, he had a scholarship but he had to drop out, because his dad had a movie theater and he had to

help him. Um, so he like, bought this land and set it aside. It was near our house, he set it aside, it was like my and my sister's college education. So growing up we could always see this land, like that represented college for us. That represented opportunity to get out of this like place. So, so we like, we like played on the land, it was our land always and um, we'd get um. ... And the land is still there. Every year you know, another piece goes up for sale to pay for college.

Jessica's father strove to ensure that his children would both: understand that college-going is the norm and not face the same financial obstacles he had faced when trying to attend college. Both Jessica and Tim's fathers repeatedly reinforced the notion that going to college was important and that there were available resources to achieve this goal. These acts served as a mechanism to increase Tim and Jessica's potential social capital because it helped them understand that their family's norms included matriculation to college.

These stories, as well as others that I will highlight, seem to suggest that these students experience their parents' encouragement as the desire for the students to have an easier life than the one their parents lead. These rural students measure the concept of an easier life by the amount of money they will make as an adult. The more money they make, the easier their lives will become. Students report that their parents encourage them to go to college because it is a necessary step in the procurement of a high-paying occupation. The following stories illuminate this point.

Jacob, a senior, comes from a working class family. Both of his parents work on the assembly line in an automobile factory. Jacob reports that his parents are very worried about job security and their pensions, given the current uncertainty of the auto industry. Money has been even tighter the last few years - - his parents have to pay medical expenses for Jacob's younger brother, who is battling cancer. Even though his

father's own health is failing, he still works to support his family. Jacob explains that his father wants a different life for him:

Jacob: I just if, like I said my dad works hard, he's pretty much like one of those, he, he gave himself to the company that he thought, you know, uh, took care of its people. And you know he's physically damaged himself from years and years of work and working very hard so we could have a decent life. And I just knew that, and he always told me to you know, "work smarter not harder".

Jacob's father has instilled the norm of 'working smarter' in his son, meaning going to college and becoming a white-collar professional. It means not spending 12 hour days doing manual labor. It means a chance at an easier, wealthier life. He believes that by going to college, he will be able to work in an occupation that allows him financial security beyond what his father is able to attain working on a factory line. Mary's mother echoes these sentiments:

Mary: (S)he always like, told us you want to go to college, you don't want to end up like me. Like, um, go to college was like her take home message. And my dad, he wasn't quite as like, vocal about it. But um, I guess it was never a question in my house if you were going to college, you were going to college because you weren't going to end up like my parents.

Once again, going to college has never been a question for Mary. Her parents communicate to her that college is the norm, regardless of their own lack of college experience.

Mary explains that her mother is unsatisfied in her job as a bank teller, the same job she has had since Mary started school, and that her mother "was always like 'look I'm where I started'". Mary reports that her mother has not been promoted in all the years she worked there and does not have any hope of promotion. Her father worked on and off as a bartender for most of her childhood until he got a position on the factory line.

Mary's mother started working when Mary went to kindergarten. Before then her family had moved four or five times because they could not afford rent. These experiences convinced her that she "wasn't going to end up like her parents". She does not want to be unsatisfied in her job. She does not want to have to move around because she cannot pay rent. She wants to be an optometrist, a job that she is both intellectually interested in and one that will help her secure this 'easier' lifestyle.

It is clear that each of these parents established college matriculation as a normal, expected behavior for these students. The students always knew they were going to go to college because their parents had always told them they were going to go to college. Since I did not interview parents, I cannot explain how these parents came to hold expectations for their children that ran counter to the values of their communities. However, it seems that for these students, their parents' desires for them to attend college outweighed contrary messages they may have received from other sources. Thus, even though the parents had not gone to college themselves, they influenced their children's decisions to go to college by setting the groundwork that matriculation was a normal, expected behavior.

Defining Individuals and Moments

While parents helped to establish students' educational ambitions, interactions with community members and participation in extracurricular activities, expanded students' notion of what it would mean to go to college, by exposing them to information and experiences they did not previously have. In this section, I explore the ways that these individuals and experiences expanded students' ambitions for matriculation such that the students gained an understanding of how to accomplish their goal.

Defining Individuals. For some of these students, key individuals provided intimate knowledge about the college-going process. Through a social link of her own, Kim was able to have private access to one of her high school teachers.

Kim: Um, I had, I'm going to say I had two really good teachers in high school. One of them was my physics teacher who had a daughter my age in my grade. She was always pushing her daughter toward college and I was in her friend group with her daughter, so there were about five of us that were pretty smart and hung out together. So we always got influenced by her mom.

Kim says that she would talk with her friend's mother about what she needed to do to get to college while hanging out in the afternoon and sleeping over. The mother was explicit with her own daughter about what courses and activities she needed to enroll in to help her get into college. Through this friendship the daughter was able to impart that information to Kim. In this way, this parent and teacher functioned for Kim in much the same way that a college educated parent might function for her own child. She provided not only the academic information Kim needed, but also the social information that may not have been talked about, or may have been less obvious for some students.

When students did not have home or school connections that led to information sharing, they sometimes turned to alternative supports. For one student, family friends provided even more assistance. Crystal reports that her parents were financially unable to care for her and her three siblings because her father was laid off. They found refuge for their daughter in the home of a community member, their pastor.

Crystal: My senior year of high school I lived with my pastor and his wife. And his wife happened to be our school guidance counselor. And she really pushed me to like apply for college like I lived with them my senior year and they really pushed me to apply for college. Um, she was just, because I was living with her, she kind of took on a motherly role and was very thorough with me like, this application is due this day so

you need to get it done. But she also um, drove me to different colleges and walked around campus with me.

These individuals bought her ACT study books and helped her to choose among colleges.

The pastor and his wife were able to provide Crystal with information about college, and the matriculation process, that she would not have otherwise received, because both had gone to college themselves.

What was interesting to me about these key individuals was that it did not seem to matter who they were. They could be school personnel, family friends, and even employers, as is the case illuminated by the following story:

Gary: Senior year rolls around, it's middle of senior year, college application time. This was still when I still didn't fully believe I was going to Michigan. I didn't think I could do it based on people I talked to, like my guidance counselor told me there was just no way for me. For one thing, you know, you don't have a strong enough educational background because you're from (his town), you don't have the financial background to make something like this happen, it's just not doable he told me.

Well Joe told me, huge Michigan fan by the way, goes to a game every year at least, he's like 'so you applying to Michigan?' And I was like 'uh no' and he was like 'why' and I was like 'I don't know, too many essays, don't want to bother with it', kind of ashamed of the fact that I couldn't do it. He's like 'where did you apply?' Michigan State, Central, and this small business school in Midland called Northwood. And he's like, 'you think, how long do you think it would take you to write those essays', and I was like, 'I could probably do it in a night but it's like \$50 application fee and you know, I just don't it's not even worth it. I already got accepted to MSU, it's all good'. And he's like 'well', he pulls out of his wallet and he's like 'fifty bucks, you apply by Friday, you get in', gosh what was the bet? He told me, you know, I had to apply, print out the application, if you get in, he said buy me something, and if I didn't, you know, I had to give him back his application fee if I didn't get in.

In this instance something as simple as a bet was enough to get a student to apply to the University. This bet functioned more than just a game of chance for Gary. It provided him with the financial resources to apply to the University. Moreover, it indicated to him

that Joe, his employer and friend, believed in him and believed that he was bright enough to go to college. This show of confidence was powerful enough for Gary to eschew the negative messages he was sent by others and pursue his educational dream.

Each of these important others provided students with some level of information that increased their college related social capital. They introduced them to a variety of careers, advised them about courses, took them on college tours, and paid for college applications. The instrumental assistance these individuals provided reinforced the expectations established by parents. By providing students with this assistance, these individual community members let the students know that they also expected the students would go to college and believed the students were capable of such a goal. This gave students an additional voice that ran counter to the norms held by their schools and communities. Receiving such explicit information allowed students a window into the world of higher education, a window that their parents alone were not able to show them. Defining individuals did not give students their only window to higher education though, occasionally outside experiences provided them with such opportunities.

Defining moments. In my national analysis of students, I found that extracurricular participation was significantly related to matriculation and I hypothesized that this participation provided students with important college-going information. As I will explain here, this hypothesis arose entirely from the results of my interview analysis. Simply participating in any extracurricular activity did not seem to matter for the matriculation of the interviewed students. However, if participation in extracurricular activities led to exposure to or information about college, or confidence in the world

outside of the rural community, then it became an influential force in students' decisions to go to the University of Michigan.

As their stories reveal, simply being taken to a college campus made students decide that going to a large four year university was the right choice for them. Jessica says she always wanted to go to college, but never considered going to the University of Michigan. She thought that she would go to a college near her home. In the following exchange, I questioned her about how she came to understand the college process.

Sarah: So how did you get information about college then? Where did it come from?

Jessica: Um, I danced, so I danced like an hour away. Ahh, I danced and I started going to summer camps for dance. And I went to Michigan's dance camp here.

Jessica's dancing experience provided her with her first exposure to a major university campus. She talks about how large Ann Arbor seemed to her and how many different people she saw as she walked down the street. She says she knew at that moment that she wanted to go to a school, like the University, so she could become a part of that environment.

Similarly, Annie explains her first run in with a university and her ensuing interest in college.

Annie: I was maybe seventh or eighth grade. I was in 4-H and they have, uh, exploration days where you go to Michigan State University for a weekend and do, you know, fun classes or whatever you want. So I mean, that really, from then on I knew I wanted to go to college. So that's kind of what sparked my interest in going to college.

Sarah: How do you mean?

Annie: I just, uh, it kind of just showed me that, you know, furthering your education is really important. So uh, yeah, I did like the campus and I like

the idea of dorm life and uh, just that sort of thing. So I guess that's kind of how it happened.

During her weekends at Michigan State, Annie stayed in the dormitories with students from all over Michigan. She was able to take classes about forestry and animals, and learn things she never knew before. She reports that she looked forward to those weekends every year and she liked the idea of going to a college like Michigan State when she got older so that she could have these experiences every day, rather than just for a weekend.

Kim also got her first exposure to college through extracurricular activities.

When I ask her to tell me about how she got to college, Kim says:

Kim: [My community] had a pretty big FFA [Future Farmer's of America] program at high school and um, I was pretty involved in that. And they had um, like an officer team. And they had like regional officers and chapter officers and then state officers at the college level. So it was pretty cool. The people who had got really involved in FFA tended to go to college because you usually worked yourself up in the officer chain. And um, all the state officers ended up at Michigan State and that's where they have kind of the headquarters for the Michigan FFA. So um, I was never an officer but I always competed in a lot of the competitions so um, I was always at Michigan State at least a couple times a year doing competitions. So that was pretty nice.

Neither Kim's parents nor her older siblings had gone to college. She reports that her parents were always supportive and encouraging of her, but that they never pushed her to go to college. She had always thought that she would go to a local community college when she finished high school, but after her exposure to Michigan State she changed her mind. Kim says that she learned that you could major in things she had never heard of before. She also states that prior to going to Michigan State University, she had not understood there were so many different types of jobs she could have when she was older

and she wanted to learn about all of them, so she made up her mind to go to a large university.

Their participation in these activities provided the students with an important view into the world of higher education. Their experiences on college campuses seemed to open students' eyes to what life at college could be. They liked the possibility of becoming part of campus life and thus decided to apply to such universities.

What I never did understand was what it was about *these* students that caused this exposure to have such an impact. Did all of the students who attended these same events go on to college? If not, what makes the interviewed students different? It is impossible to determine this from my interviews, but I can hypothesize. I believe that their desires to go to college were already sufficiently strong, by the time of these experiences, to have put them on the college path. However, because of their limited exposure to places outside of their community they had no way of conceptualizing what a major university would be like and had no yardstick with which to measure their abilities against those of people nationally or the rest of the state. These experiences helped them to gain some perspective on both their abilities and the world at large. April's experience explains this point well.

April: Um, one day like there were those one of those pageant things that come along that I signed up for randomly. And then I won Miss North East Michigan, and then they ended up paying me to go on Miss Michigan and I went to the Miss Michigan Pageant. And that prepared me, and I was in the right chain, and I was on TV and everything like that. And I actually ended up getting second runner up, or first runner up, and it was just like...that was my junior year and I would definitely say that that proved to me personally, that like, ok, I don't have to listen to you. There's a bigger world out there. ...So, but it was really encouraging because I was like okay, this is an opportunity to not be less advantaged. I went down to Lansing and you know, I job shadowed different

government officials and met the governor and did all these really cool things.

This experience was paramount for April. She refers to it as “a big chunk of my matriculation story”. April believes that she had the confidence to apply to the University of Michigan because she had been successful in the pageant. She perceives that this turn of events gave her the confidence to believe that she could succeed in other areas of her life as well, like going to college.

For all of these reasons, extracurricular participation improved students’ knowledge of and confidence with college. Participation gave students the opportunity to imagine themselves in a different environment, college. Further, for some, participation gave them confidence they used to go against the norms of their communities and schools by going to college. I consider the implications for these findings in the interpretation section.

Essential Assistance

Many of the characteristics I found to be important for college matriculation in my national student analysis, are not available to the interviewed students. They do not have parents who have gone to college. Their schools do not have a wide variety of honors and AP courses. So how do they gain knowledge about what courses they need to enroll in to put them in a position for college or what steps they need to take to determine where and how to apply? As I demonstrate above, some gain knowledge and instrumental assistance from community members, but still others acquire these things through information sharing between themselves and school personnel.

Eleven of the students report that they took advanced courses in unconventional ways. As I have mentioned, course offerings are often limited in rural high schools, but some lucky students, like Jennifer, have teachers who offered opportunities to take individualized advanced courses.

Jennifer: I did take like Algebra II and Trigonometry, which I took it by myself because no one else in the school was taking it. I just took it as independent study.

Sarah: How did you figure out you could do that?

Jennifer: Um, my math teacher just offered it to me. I just sat in the back of the classroom and did it like during Freshman Geometry or something. My senior year I did that.

Jennifer's math teacher was not obligated to offer her these classes, which caused him extra work, but he did it anyway. He was willing to increase Jennifer's opportunity to learn and hence her chances of going to college. Jennifer is not alone in this. Kim says her teacher purchased AP texts because Kim and a few of her friends wanted to take an AP course. Gary relays a similar story about his efforts to take a pre-calculus course.

Gary: Like, in high school the highest level math class offered was Pre-Calc and it was only because I caught it on a lucky year because it was only offered about once every two or two and a half years.

Sarah: Why?

Gary: No one took it. The only way I was able to take it was because I got four kids, three other kids to take it with me. I took it and then three friends of mine. And we actually got parked in the back corner of an Algebra II class because there was no class time for it. So it was like a glorified independent study for us. And I went and talked, and this was my teacher, [name] teaching the Algebra II class in there and he's like 'I'm not gonna have time to get back here very often.' And he's like you know, 'I wrote a syllabus for you guys and a list of things I want you guys to learn.'

Every day, Gary and his friends went over this list and checked off items as they learned them. He says he learned the most on days when the Algebra II students had tests and

pop quizzes because his teacher was able to spend more time answering his questions. In each of these instances, students say the teachers initiated offering these courses.

Other students had teachers who provided them with intimate knowledge about the college-going process. I had the following exchange with Mary about one such teacher:

Mary: Mm hmm, she was amazing. Like, and um, at the end of the year there were only three of us left in the class because the seniors had graduated. So we took fieldtrips to um, like, we'd go to the counselor's office or we'd go to um, career fairs, just like.. she was amazing. And like, she was leaving the next year and she was scared that if she left we weren't going to continue. Um, cause like, we had completed all of the advanced placement and like anything our school had to offer. So now it was kind of like what are we going to do now?

Sarah: Junior year?

Mary: Mm hmm, so it was like what are we going to do now? Take nutrition and foods? She didn't want that to happen. So she worked really hard to make sure they picked up extra classes for us and did things for us. And she really helped us explore our options and figure out like where was the best school for us.

This teacher was a mentor for Mary. She provided Mary access to information about the world at large and opened her eyes up to opportunities that existed around her of which she was otherwise unaware. She even helped secure Mary an internship in a doctor's office, so she could begin to understand what it could mean if she became a doctor. This connection became a critical point of social capital for Mary as the doctor was a University of Michigan graduate and talked to her about his college experiences frequently.

These stories help to explain why it is so important for first-generation students from rural areas to have positive relationships with their teachers. These relationships provide the foreground for students to receive the assistance they have to have in order to

pursue their educational ambitions, particularly because those ambitions are largely counter to the culture of the school. Moreover, the actions of these teachers (i.e. providing additional classes and internships) helped students to overcome the resource constraints they faced within their high schools. Thus, it seems that these students were able to acquire social capital through a variety of avenues, each of which supported their matriculation to college. I interpret these relationships in the following section.

Interpretation

Looking solely at demographic indicators one would think these thirteen students would not be enrolled in an elite university. However, demographic indicators are not able to tell us who a person is or the life he has led. Through their stories I was able to get a glimpse of the lives these students have led and the many affordances that have been given to them. It is through their stories that I began to understand why it might be that certain activities and experiences came to be more important for students than whether their parents had gone to college.

It became clear that these students are exceptional in their own right with regard to their academic ability and participation in social activities. They work hard, do well in school, and try to take the most challenging courses they can. Their behaviors are influenced not only by their own abilities, but also by the significant others in their lives. As they told their stories, I realized that these students are embedded in familial, academic, and community social networks that include individuals who pushed them to go to school despite the norms of their communities and schools writ large.

Each of the students comes from families where their parents encourage and support their college matriculation. Parents explained that going to college was a

necessary step in procuring an easier life than the one they had led. Throughout their childhood and adolescence, students were reminded that they were expected to go to college. These students did not question whether they would go to college. They knew they would go because their parents had established matriculation as a behavioral expectation. Perhaps in part as a consequence of this, these students challenged the norms of their communities, they went to college.

Individual network members reinforced the expectation established by parents. Many students were only able to take the types of challenging academic courses desired by elite college admissions offices because of the extra efforts of individual school teachers. Eleven students identified at least one teacher or guidance counselor who went out of his or her way to provide the student with special opportunities. In both my national student and school analyses, I found that there was a positive interaction between positive-student teacher relationships and college matriculation for first-generation college-goers, but I was uncertain why these relationships affected matriculation. Through this analysis, I determined that these relationships allowed students to gain information that improved the likelihood they would go to college. Oddly though, none of the students spoke about teachers or guidance counselors helping them choose among colleges, only that certain personnel had given them access to advice and information that helped them in the prerequisite application process.

Still other students received such individualized attention from caring community members and family friends. Through the modeling of norms and information sharing, these individuals helped to increase students' potential social capital in many ways.

Some of these included showing students what a college education could provide for them and helping to convince students they were good enough to achieve their goals.

Also akin to my prior analyses, I found that participation in extracurricular activities was important for college matriculation. I did not previously understand why such participation was important. Through students' stories I was able to illuminate what participation in activities outside of school meant to them. Out of school activities were important insofar as they provided students with important information about college, by exposing students to a life that they had never been exposed to before. Their participation in these activities allowed them to have access to and information about major college campuses.

It was not that prior to this participation, these students had never seen a college campus. Some had been to community colleges, which were frequently located in or nearby their homes. They had not however, been exposed to large universities. This exposure excited the students. They were curious about what happened in these institutions and wanted to be a part of it. They learned that if they attended such an institution, they could pick and choose among college majors and career paths, unlike the occupational constraints they would experience if they remained in their communities.

It seems then that these experiences, as well as interactions with network members became important for students' matriculation when they provided students with information that they could either directly or indirectly use to get themselves to college. These findings illuminate the results of my national analyses by helping me to understand *why* and *how* network members and extracurricular activities come to be important for the matriculation of first-generation college-goers from rural Michigan.

Limitations

Even though this analysis brought forth many new understandings for me, there is no question that it also has its limitations. One of these was that I was only able to interview 13 students. Although there were very few first-generation students enrolled in the University who were from rural Michigan, it would have been nice to have been able to interview more than I was able to here. More students, particularly more male students would have allowed me to determine how robust the trends I found actually were across this population of students.

In retrospect, I also would have liked for this to have been a longitudinal study. I find the tension these students feel about their communities fascinating. I do not understand whether their negative feelings about their homes came prior to, or as a result of, coming to the University. It would not surprise me to find that many of those feelings actually came about upon the students' matriculation. During the interviews students made mention of the way other University of Michigan students made them feel. They used words like, 'dumb', 'poor', 'uncultured' and 'hick'. They made comparisons between the tangible resources they had growing up and those they perceived the average University student had. The ways they chose to frame those comparisons always ended up with them and their communities falling short. I have to imagine that much of their retrospective negative talk was influenced by these comparisons. Perhaps they would have spoken differently if I had interviewed them while they were in high school.

Generally, though, I believe that this interview analysis allowed me to come to a better understanding of how these students came to enroll at the University of Michigan. Although they may not have been privileged in the traditional financial sense, there is no

question that they were recipients of social capital from their families, school personnel, and/or community members in many other ways. Despite encountering naysayers along the way, they also encountered individuals who were willing to go more than the extra mile to help them achieve their goals. In the following chapter, I elucidate policy implications based on their stories and my prior analyses.

Chapter 7

Conclusion

Nearly 10 million students attend schools in rural communities in the United States (Roscigno & Crowley, 2006). These students are underrepresented in 4-year college institutions (Chenoweth & Galliher, 2004; Cowell & Zemsky, 2006). This is especially true for those who do not have a family history of college-going. Historically, rural economies were able to support large numbers of working-class citizens, but as the rural labor market continues to change, this is no longer the case (Beaulieu & Gibbs, 2005; Elder Jr. & Conger, 2000; Goetz, 2008; Harris et al., 2008; McGranahan & Ghelfi, 1998). Individuals interested in gainful employment are increasingly being called upon to have a college degree (Carr & Kefalas; 2009). For some, the matriculation process is a natural progression, but for others, like those whose parents' have not gone to college, this process may be more difficult.

In this dissertation I investigated the college-going experiences of students whose paths to college were less inevitable. I paid particular attention to the role that social capital played in informing their educational ambitions and decisions. In so doing, I arrived at a few key findings that seemed to be important to understanding the matriculation of youth from rural areas. I outline these findings, and then provide recommendations about ways to support the college matriculation of youth from rural America, in this final chapter of my dissertation.

Key Findings

Through a combination of quantitative and qualitative research methodologies, I was able to come to a more complete understanding of the college matriculation process of first-generation college students from rural areas. By synthesizing my research findings, I came across a few interesting phenomena related to these students' matriculation pathways, most of which are related to social capital theory. Of note:

1. Parents' expectations play an important role in the college matriculation decisions of their children regardless of their own level of education.
2. Having close relationships with non-kin network members is important for the matriculation of first-generation college-goers, especially when those relationships increase students' potential for social capital.
3. Opportunities to leave the community are important for the college matriculation of first-generation youth, in so far as these opportunities expose students to 4-year college campuses and/or provide them with a chance to be successful outside of their communities.
4. The theory of ruralness (or the notion that having close social ties within a rural community can lead residents to constrain rather than expand their life choices) is supported only in so far as, students who attend non-elite 4-year colleges are more likely to feel a stronger attachment to place than students who attend elite colleges (which are typically not present in rural communities).
5. Certain characteristics of schools, namely their structure and social organization can improve the probability that students will go to college. However, these characteristics can also constrain the educational options available to students, and there is evidence that these constraints are sometimes purposeful.
6. An additional characteristic of schools, school size, can also constrain or improve the chances that students will matriculate to college. Ideally, rural schools would be mid-sized (600-999 students), making them small enough to allow for a positive social-organization, and large enough to provide academically rigorous courses.

Point 1. The Role of Parents

In my national analysis, I found that rural students tended to achieve the level of education their parents expected of them. Although parents' expectations of their students generally lessened as their own level of education decreased, some parents who had not gone to college themselves did expect their children would matriculate. In my interview analysis I came to understand that parents' expectations informed the education decisions of students in powerful ways. All of the students spoke about how there had never been a question about them going to college - - their parents had always expected them to attend. These expectations ended up being a source of social capital for the students because they set the foreground for the students' own ambitions. Further, for the interviewed sample, parents' expectations of normal behaviors tended to run counter to the norms of students' communities and schools. The fact that their parents challenged the norms of the community provided students with the understanding that they too could challenge these norms. Though I did not assess this, it is possible that this understanding made students more receptive to and interested in information about college from outside sources, like teachers and community members.

Point 2. Relationships with Non-Kin Network Members

In my national analysis I found that when students were embedded in peer networks where most of their peers were going to college, they were more likely to matriculate. I also found that having a positive relationship with a teacher improved the likelihood that students with less educated parents would go to college. However, I was uncertain *why* these relationships (with both peers and teachers) were important. The

interviewed students spoke directly to the important role individual teachers, friends, counselors, and community members played in their matriculation stories.

These relationships provided students with explicit information about the college matriculation process that they were not able to get from their homes. The information came in a variety of forms. Among other things, individuals helped students write college essays, provided them with opportunities to take advanced courses, helped them decide which colleges to apply to, and took them on tours of college campuses. In so doing, these individuals increased the students' social capital by both providing students with information they would later use to get to college and by modeling behaviors that were consistent with behaviors that are associated with college-going.

However, the interviewed students did not only talk about individuals who increase their social capital. They also spoke about individuals who actively discouraged them from going to college. Indeed, students appeared to have more people in their lives that discouraged them, than they did you encouraged them to go to college. So why did students take advice from the later group of individuals? It seems that by the time these individuals surfaced in the students' lives, the students' educational ambitions for college were already established (likely in part because of their parents' expectations). As a result, students were more willing to pay attention to their supporters and eschew their naysayers.

I specifically measured the role of peer networks and individual teachers in my national analysis. My local analysis, however, helped me to understand that the identity of the key individual (i.e. teacher or peer) is less important for college matriculation than the quality of information these individuals provide to students about college-going.

Indeed, the interviewed students seemed to “luck into” their key relationships. One student, for example, just happened to have a friend whose mother was willing to give her explicit information about how to get into college. The haphazardness of these relationships leads me to conclude that high schools could improve the chance that their students will go to college if they have personnel who are qualified and able to dispense college-going advice. I talk more about this in the Implications section of this chapter.

Point 3. Opportunities for Outside Experiences

School and non-school related extracurricular activities were also important for the matriculation of first-generation college students because they provided students access and exposure to college campuses. Even though the close-knit social networks of rural areas provide rural residents with many benefits, this environment can also be very isolating. Residents may not have exposure to individuals or places outside of their own community. Therefore, they may not know what to expect from the outside world nor do they know how this world will receive them. Of course this is not the case for all rural communities and residents, but it does seem to be true for some.

In my national analysis, extracurricular participation was measured in high school. In my local analysis, students only talked about their participation in middle and high school. By the time students have gotten to high school and perhaps even middle school, they have a general sense of whether or not they want to go to college. Thus, I do not believe that extracurricular participation caused this desire. Rather, I believe that participation helped to expand education ambitions that were already established. Participation in extracurricular activities seemed to open students eyes to the possibilities that existed for their futures. In other words, participation helped encourage students to

make matriculation decisions they might otherwise not have made. For example, they may have decided to apply to an elite 4-year public university rather than a local community college. This finding suggests to me that high schools and universities ought to form partnership programs that provide rural youth with the opportunity to have access to university campuses. I discuss this in further detail in the Interpretation section.

Point 4. Ruralness

Additionally, some researchers conclude that a student's attachment to place can impede her decision to enroll in college. I did not find that here, though that could be a reflection of the fact that few individuals showed strong attachments to place. Students, in my national analysis, seemed equally likely to go to college regardless of their attachment to their communities. However, when it came to elite college-going, students who attended elite institutions reported feeling significantly lower levels of such attachment. This finding was consistent with my interview analysis. All of the interviewed students tended to report negative feelings toward their rural community.

I stated that a limitation of that analysis was that I was unable to determine the order of that relationship. I did not know if students always had strong negative feelings about their community or if those feelings developed after they matriculated to college. The students in my national sample, though, responded to these attitudinal questions prior to entering college. This suggests to me that one's feelings about the community he grew up in may have important implications for the type of school he attends. That is not to say that malcontent toward community gives students access to elite colleges. Students have to have acquired certain qualifications to be able to attend any college, and even more so for elite colleges. However, when equally qualified individuals make decisions

about where to go to college, those who feel less of an attachment to place, may be more willing to move so they can attend college. In the absence of an elite institution existing within the community, rural students who attended such institutions were more likely to have to leave their community to attend them (McDonough, 1997). In this regard, not adhering to a ruralness orientation may aid students in making this decision.

While I did not find evidence of students adhering to the ruralness orientation, I did find evidence to support the existence of this orientation in my interviews. Students spoke about their community and school social networks in ways that suggested that these networks held norms consistent with this orientation, namely prioritizing the rural community over the desires of the individual. These norms did not appear to constrain the post-secondary decisions of the interviewed students, but these norms could have constrained the choices of some of their peers, indeed students reported that this was the case. In the Interpretation section, I provide some suggestions for schools regarding the theory of ruralness.

Point 5. The Social Organization and Structure of Schools

In my school analysis I found that schools which had a positive social organization (i.e. where the student body and teachers got along with each other) increased the likelihood that students with less educated parents went to college. I argued that this relationship existed because such an environment increased the capacity for information sharing between students and teachers, even though I was unable to analyze the nature of this relationship. Further, I found that schools which had guidance counselors who advised students about college and those that offered a Calculus course, increased the probability their students would matriculate to college. I argued that these

characteristics were important because they increased students' potential for college-related social capital.

However, I had a difficult time supporting these hypotheses in my interview analysis because the students reported that they attended high schools where they were sometimes discouraged from going to college - - or at least from going to the University of Michigan. The students did not report attending high schools with positive social organizations. Instead they were largely critical of their secondary school experience. Further, only one student reported that his guidance counselor was particularly knowledgeable about matriculation. Additionally, every student commented, in some way, about the curricular limitations (with regard to AP and honors classes) they faced in school. It seems that at least for the interviewed students, characteristics of their schools may not have improved their ability to matriculate in the way the school analysis would have led me to believe.

This is not to say that I found my prior hypotheses to be untrue. It is only to say that I was unable to substantiate them with my interview analysis. A subsequent investigation of schools that considers both the social-organization of high schools and the norms espoused by the school (i.e. go to college versus go to work) is warranted to determine how social organization and norms interact to inform matriculation decisions.

Point 6. School Size

School size continues to be a hot topic in rural education. Briefly, researchers have found that small schools limit curricular offerings (Kannapel & DeYoung, 1999; Lee, et. al., 2000; Miller, 1993). I found that small schools tend to err on the side of offering vocational education instead of advanced courses when deciding which classes

to offer. Large schools, on the other hand, have been found to have weaker school social-organizations (DeYoung, 1987; Fowler & Walberg, 1991). Lee and Smith (1997) found that there is a threshold effect for school size, such that medium sized schools are best able to support the education of their students. My findings are consistent with Lee and Smith (1997). I found that medium sized schools, which offer academically rigorous courses (as measured by the presence of a Calculus course) significantly improved the odds that their students would matriculate to college. Lee and Smith (1997) suggest that this is the case because medium sized schools are still small enough to give students and teachers the opportunity to develop personal relationships. However, they are also large enough, and in this case made the choice, to offer the advanced coursework students need to get to college. This finding has important implications for policy makers faced with decisions about school consolidation. I discuss these in the following Implications section.

Implications

One in four school aged children in the United States attends school in rural communities (Roscigno & Crowley, 2006). Only about 30% of those are currently expected to matriculate to college (USCB, 2005). As the unemployment rate continues to grow for those who do not go to college, students from rural areas are increasingly at risk for being unemployed (Carr & Kefalas, 2009). In the remainder of this chapter, I provide some of the implications of the key findings, I outlined above, in the hope of helping to increase access to higher education for students in rural America, particularly those whose parents have not gone to college. My findings can primarily be reduced to

suggestions for high schools, universities, researchers, and policy makers. Therefore, I divide this section into implications for these four groups.

High Schools

It seems that some rural communities and schools have norms that run counter to those that are consistent with college matriculation. In these schools and communities, students are encouraged to prioritize remaining in the community and entering the workforce immediately after high school. To an extent, this is an understandable expectation. Young people in their twenties and thirties are leaving rural communities at an unprecedented rate (Carr & Kefalas, 2009). This is especially true of educated individuals, who go on to college and perhaps graduate school, but rarely return to the community. Thus, rural communities lose their intellectually best and brightest (Lichter, McLaughlin, & Cornwell, 1995). In an effort to sustain the community, rural residents may encourage students to stay in the community and discourage them from moving away to go to college.

This process, however, is not terribly fair for students from rural areas. While it is not necessarily the case that all students need to go to college, I believe that all students should be able to make informed decisions about their future. This means that students ought to understand that going to college is an option. Further, they need to have tools available to them to make that option become a reality, if they so desire. In communities that hold norms counter to those associated with college matriculation, schools become an essential resource for expanding the life options of students. I believe that schools in rural areas, particularly high schools and middle schools, need to take a proactive stance when it comes to providing students with information about going to college, even if that

means going against the norms of the communities in which they are embedded. I appreciate that taking such a stance would be difficult. Parents and community members may become upset that the schools is going against their wishes. However, students deserve the right to choose their own life trajectories.

To that end, I have found two aspects of schooling that seem to be particularly useful for improving the probability that students will matriculate to college. These are: offering academically rigorous coursework and providing information to students that is directly linked to the matriculation process. I argue that schools interested in taking a pro-active stance about preparing students for college, ought to provide students with both of these items. I discuss each of these in the following two sections.

Academically rigorous coursework. School size plays an important role in the types of courses schools offer. Small schools have a difficult time providing a variety of course offerings because they do not have enough students to take, or teachers to instruct, a wide range of subject areas. Therefore, smaller schools have to make decisions about what courses they will offer. These decisions are largely based on the qualifications of the teaching staff, as well as the desires of the student body (Lee & Smith, 1997).

In my national analysis, I found that far more small schools offered vocational courses than offered AP courses. Indeed, only seven small schools offered AP courses but did not offer vocational courses. Further, in my interview analysis, I found that when students wanted to take academically rigorous courses, such as AP and honors courses, they often had to do so as independent studies. These independent studies sometimes took the form of individual students, or small groups of students, sitting in the back of a classroom primarily teaching each other, while the instructor taught another group of

students a different course. Although such courses provided students with the course prerequisites for college, it is unlikely that they provided the “learning” required to facilitate students’ success in college.

I argue that schools which take a pro-active stance on improving students’ chances of matriculation ought to reverse this arrangement. That is, when schools have to make decisions between offering vocational courses or academically rigorous courses, they should opt for the academic courses, even if that is not what the student body initially wants. I think that privileging academic courses is necessary because students’ college options can be restricted, or even barred, if they do not have the opportunity to take advanced curricular offerings (Bryk, Lee, & Holland, 1993; Gamoran, 1987). The same is not true for vocational courses. Taking vocational education courses may put students in better stead for their future occupations but not taking them, does not prohibit students from moving on to their desired career.

Thus, I argue that when schools make decisions about what courses to offer, they should err on the side of more rigorous coursework rather than on trade-based courses. This is not to say that vocational courses ought to be removed from schools altogether. I am only arguing that when schools have to choose between vocational and academic courses, they should opt for academic courses. Further, schools which have eliminated vocational courses could begin to offer those courses as independent studies, where students apprentice with individuals in the community. In this way, students will still have the opportunity to take vocational training, but the school can redirect its resources (both human and financial) toward college preparatory courses.

Making a change to the curriculum like this would certainly be challenging. There would likely be resistance from teachers (especially those teaching the vocational courses), students, and parents. There would also be the added expense of hiring and recruiting teachers, qualified to teach advanced courses, although, this cost would be somewhat off-set by the elimination of vocational classes. A curriculum change like this is necessary though, to help students become prepared for and be accepted to 4-year colleges. Further, this change would be consistent with recent state curriculum reforms, like those in Michigan, where students are being required to take more credits in academic subjects. Thus, making such a change could help schools better align themselves with similar reform efforts.

Guidance counselors and personnel who focus on post-secondary decisions.

Throughout my analyses, I have found that guidance counselors and teachers who provided students with information about college improved the chances that students would go to college, particularly students whose parents had not gone to college themselves. As a result of these findings, I argue that high schools should have a guidance counselor (or in the absence of a guidance counselor, a teacher or a community member) who is qualified to help students through the college matriculation process. A qualified individual would be able to advise students on a variety of issues, including: courses that would put students on target for going to college; career options; information about standardized testing; information on a variety of different types of college (i.e. 2-year, 4-year, public, private, in and out of state); what type of college to attend; information about financial aid, grants, and scholarships; and information about the application/matriculation process. The counselor/coordinator should be responsible for

providing explicit information to students and parents about each of these areas. Ideally this individual would begin to target students as soon as they entered high school, or maybe even before, helping them to choose among course options, and continue providing advice throughout the students' school career.

Counselors/coordinators should also be able to provide explicit information about college-going to parents. Perhaps most importantly, parents of low-income youth need information about financial aid, grants, and scholarships. However, they also need information about how to support their children's higher education ambitions. The students in my study reported that their parents actively encouraged them to go to college, but for the most part their parents did not know how to go about this other than impressing the import of higher education and monitoring report cards. It may be that these parents would have been aided by information like this which would have reinforced their children's educational endeavors.

However, many counselors/coordinators have not been trained to provide this type of information (NCES, 2003). Thus, I suggest that schools interested in taking a pro-active stance about college matriculation, should identify at least one individual (a guidance counselor, teacher, or community member) who is enthusiastic about improving matriculation rates. That individual should then attend a mandatory professional development training program held at a major state university during the summer months. Such a program would train counselors/coordinators about how to best advise students and parents about college matriculation. If the program was specially targeted for rural educators, it would also provide them with an opportunity to troubleshoot with other

professionals in similar circumstances about techniques that have proven particularly effective for them.

Higher Education Institutions

While my previous recommendations were directed at things that high schools could do to improve the matriculation rates of their students, I now turn to things that higher education institutions could do to increase the proportion of rural students that matriculate to their institution. Before I provide recommendations for these institutions, I will first establish the unique financial opportunity these institutions currently face. Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) is a federally funded, discretionary grant program, that is “designed to increase the number of low-income students who are prepared to enter and succeed in postsecondary education” (U.S. Department of Education, 2010). In 2010 alone, the federal government gave \$323,212,000 in awards to states, local education agencies (LEAs), and higher education institutions that had established programs to meet this goal.

Through this program, colleges and universities are encouraged to partner with individual schools and LEAs to create programs that will help improve the matriculation rate of low-income youth. The 2008 call for grant applications, provides higher education institutions with a variety of options for forming these partnerships. Among them are included, 1. funding for professional development programs that train teachers, guidance counselors, and/or community members on ways to effectively advise students about college matriculation, and 2. funding for programs aimed at providing low-income students opportunities to visit higher education institutions, including the opportunity to stay at the institution for summer classes and camps.

I have already discussed the training I believe counselors/coordinators need in order to effectively advise students about college-going. So here, I will only say that I encourage higher education institutions to form partnerships with rural LEAs (I encourage LEAs to do the same) and begin to develop professional development programs that will help rural educators meet the needs of their student bodies. These partnerships will be financially beneficial and may serve other purposes down the road (like opportunities for research, or an increase in the number of rural students attending the college). I will however, spend more time considering the second option for partnership in the following section.

Provide exposure to college campuses. Typically rural areas are not located within an easily accessible distance to a university. Therefore, students are not naturally exposed to such environments. However, as my analyses have shown, exposing rural high schools students to colleges can have a powerful effect on their post-secondary decisions. To provide this exposure, college personnel can either bring groups of students to their college, or they can travel to high schools and bring the college to students. GEAR UP can provide funding for either scenario.

I would encourage universities and high schools to devise programs to bring students to the university whenever possible. The experience of going to a major college campus seemed to really leave an impression on the interviewed students. Their time there, however brief, opened up a new world for them and I am not certain that this response would be similarly evoked by having a college representative come to a high school campus. I recognize though that there may be a multitude of reasons that bringing a group of students to a college campus is not possible, regardless of the funding

opportunity. Therefore, colleges and LEAs could partner and create a “college day”, or a series of college days where representatives from a variety of colleges come and speak to the student body about college life and the benefits of a college education. Attendance at such events ought to be mandatory in an effort to encourage all students to consider going to college.

These are just a few examples of the types of partnerships LEAs and higher education institutions could create that would help to increase the matriculation of rural youth. Forty-two states have already developed and implemented their state GEAR UP grants, and many of those (for reasons I will discuss in the next section) do not target rural youth. That does not mean though that the federal government will not finance programs for rural students. I think that it is in the best interest of rural youth, for LEAs and higher education institutions to help fill the void left by some states’ GEAR UP programs by partnering together to target low-income rural youth.

Policy Makers

I have two brief suggestions for policy makers that pertain to rural education in the United States. The first of these is related to school size and the second is related to funding. I outline each of these suggestions in the following sections.

School Size. As I outlined in my key findings and throughout my dissertation, rural schools are frequently faced with decisions about whether or not they should consolidate smaller schools into larger ones. Although the small school movement has many proponents, school consolidation has been prolific in some states. Education research however, has consistently pointed to the notion, that students in medium sized schools outperform those in large and small schools (Lee & Smith, 1997). I have found

the same here when it comes to college matriculation rates. Therefore, I urge those who are involved in policies and legal battles concerning school size in rural America to seriously consider the possibility of consolidating schools only to the point of establishing medium sized schools throughout rural areas. In that way, these schools will be positioned to have the best of both worlds: positive-social organizations and academically rigorous courses.

Funding. Throughout the country, numerous schools and education programs are insufficiently funded, especially in low-income communities. As a result, policy makers have to make difficult decisions about which programs to fund and who gets to receive those programs. The physical isolation and low population density of rural areas often result in their schools being left out of conversations about financial appropriation. From a pure numbers standpoint, there simply are not enough students within one rural area to “merit” a substantial financial expenditure.

As I reviewed information about different state’s GEAR UP programs, for example, I could not help but notice the number of state grants that only mentioned providing these discretionary funds to low-income urban areas. Michigan is a good case in point. The Michigan GEAR UP grant, targets students in three urban areas: Detroit, Flint, and Muskegon. There is no question that these areas are in need of any assistance they can receive from the federal government or elsewhere. Further, it makes sense to provide urban areas, which are home to far more students per square mile, large grants like these. In essence, these areas provide more “bang for your buck”, programs are able to target more students for less money.

I urge policy makers, however, to consider what is happening to students in rural America as well. Their matriculation rates are lagging behind the rest of the country and the difference between them continues to grow (U.S.D.A., 2010). Thus, I propose that when policy makers create tiered funding programs like GEAR UP - - where the state is given one large primary grant, and then individual entities (LEAs or universities) within the state are given smaller secondary grants - - the policy makers should create caveats for these secondary grants that provide preference for programs which fund communities not represented in the primary grant. In this way, the areas that serve the most students will still receive necessary money, but rural areas will stand a reasonable chance of receiving funding as well.

Researchers

My work has also led me to come to a series of implications for researchers. The three implications that I outline here are quite varied from one another. The first of these is a specific program recommendation. The program I outline could potentially provide students with the types of information that the students in my analyses received, by virtue of their social connections. The second implication deals with the use of mixed methodology. While the third implication outlines the limitations of my work. I outline each of these in the following sections.

The Internet. Researchers interested in developing programs to help improve the matriculation rate of rural youth face a few substantial obstacles. The first is that rural schools are separated by considerable distances. Frequently, an entire county will have only one high school. The distance between high schools makes disseminating information about any program difficult, because of the time and expense involved with

traveling to various schools. The second major obstacle, as I have already discussed, is financial. Any program targeted at helping students in rural America should be created with the understanding that it is difficult to find funding for programs aimed at rural schools because the per pupil expenditure is often too high. Researchers of rural education have turned toward internet technologies to help them confront these obstacles. The internet is a cost-effective alternative for disseminating information to teachers and students who are geographically isolated (Schafft, Alter, & Bridger, 2006).

I suggest that researchers develop a comprehensive online source that provides students, teachers, and parents with essential college-going information. Today's students are quite comfortable with internet technology. Each of the students that I interviewed reported finding information about college online, but their searches were labored in that they had to try to piece together information from a variety of sources in order to learn about applying to college. I believe that if students had one place they could turn to that provided them with the types of information the students in my analyses used to go to college; researchers may be able to improve the likelihood that students would matriculate. Some states, like West Virginia, have already turned to internet technologies to provide students with this sort of information

(<https://secure.cfwv.com/Default.aspx>).

The West Virginia website provides researchers with an excellent framework for developing their own web-based programs targeted at improving matriculation rates. This website provides students, teachers, and parents information about: career planning; academic planning in middle school, high school and college; information about different types of colleges; direct links to in-state colleges, and colleges nationally; financial aid

information; preparation for standardized tests; a program that helps students choose among colleges (i.e., what college is right for you); and a resume builder. I think it would also be useful for this website to include information about colleges and universities that have established programs which encourage kindergarten through twelfth grade students to go to college. I could also provide links to possible grants for schools and teachers, which could help personnel, establish their own college preparation school programs. Further, the website could provide educators opportunities for professional development throughout the school year through webinars.

One of the benefits of such a website is that it is useful for all students, including those from rural, suburban, and urban areas. As I have noted, the first-generation students in my analysis were not necessarily exposed to a variety of people who provided them with social capital, relative to college matriculation. Rather, these students seemed to have “lucked” into relationships with individuals who could provide them with vital information about college. A website such as this removes the necessity of luck in providing students with some of this college related capital, because it makes the behaviors, typically associated with matriculation, transparent to all students.

However, making a website available does not ensure that individuals will use it or will know how to use it. Thus, I return to the idea of a professional development seminar for counselors and school coordinators. During this seminar, school personnel can be trained on how to make the best use of the website. Students also need the opportunity to understand how to use this technology. Counselors and/or coordinators should introduce a website such as this to students early on in middle school, so that students can start enrolling in classes that will set them up for college preparatory classes,

and continue to encourage its use throughout high school. Schools could even create mandatory in-school workshops, led by the counselor, where students go through areas of the website collectively. In so doing, schools would ensure that all students have at least some basic understanding of the matriculation process. I should mention here that funding for the creation of the West Virginia website and the professional development that ensued from its creation was provided in part by GEAR UP.

I believe that parents should be introduced to such a website when their children are still quite young, primarily for the purpose of financial planning. Students from low-income families can see tuition as a barrier to their ability to gain a college education (Plank & Jordan, 2007). Therefore, I believe that the high school counselor ought to attend open houses at the local elementary and middle schools. There, they can have a presentation about college financing for parents. During the presentation, they can direct parents to the website and demonstrate how to use this resource. By using this technology, schools may be better able to provide all students with the type of explicit information they need to help them get to college.

Methodology. The following implication is more commentary for researchers than anything else. Had I not embarked on a mixed-methods study, I would not have understood just how important parents who had not gone to college were in the matriculation of their children. I could have also very easily made incorrect assumptions about the reasons certain items in my quantitative analyses came to be important for students' matriculation. Moreover, I would likely have omitted certain key variables from my quantitative analyses had I not previously recognized them in my qualitative findings. Thus in this application, and likely in many others, taking a mixed-

methodological approach can provide great benefits for researchers. I am not suggesting that researchers set out to create a mixed-methods study and then establish a series of questions that support the methodology. Rather, I am suggesting that researchers ask the questions they are interested in, and if those questions require mixing quantitative and qualitative methodologies, ask them anyway.

There is no question that mixing methods is time consuming. Researchers who want to employ this methodology need to understand not only quantitative and qualitative techniques, but they need to be constantly thinking about the ways that their analytic strategies inform one another. This is a different skill set than the one I had heretofore acquired. Prior to conducting this dissertation analysis, I considered research questions individually, and once I had addressed the question to the best of my ability, I was finished with the analysis.

Through the process of mixing methods, I began to see research questions not as succinct entities but instead as interlocking pieces of a puzzle. There were times when the links that I found between studies surprised and excited me. There were also times when I hoped I would not find any more connections because with every emerging link, I went back to each of my data sources to see if I could substantiate or inform my finding. Doing so required quite a bit more of my time than I had anticipated.

Once the analysis procedure was complete, I then struggled with the most effective way to tell this story. Is it really a mixed methods study if I have separated my results into three different chapters based on my analyses? How can I effectively describe a specific example of my iterative process in Chapter 3, when this process arose as a result of my qualitative findings, which I do not discuss until Chapter 6? These types

of questions kept coming about as I tried to write this mixed methods dissertation, and yes, I do believe that it truly is mixed methods. They were challenging and at times frustrating. However, looking back, I am keenly aware that the story I have been able to tell is far richer as a result of these efforts and I am glad for it.

Limitations. In some ways, my dissertation analysis was quite large and encompassing, but in others it was not. Here I describe the limitations of my research questions and findings and speculate on areas of improvement. At the beginning of this dissertation, I justified the use of certain parameters I put on my sampling procedure. Namely, that I only considered students from rural areas, and that I was only interested in matriculation to 4-year colleges. I stand by these justifications. However, future researchers may want to expand upon what I have presented here by including these groups.

By only considering rural students, for example, I was not able to determine whether my findings were uniquely rural or if some were perhaps shared across first-generation college-goers. Further, by studying only those students who went to 4-year colleges, I was not able to understand whether and how the matriculation process might be different for those who attended community colleges. Community colleges are plentiful in rural areas and rural high school students often take community college classes as part of their high school curriculum. Thus, in a future study, it might be useful to look at differences between those students who attend 2-year versus 4-year colleges.

I also only interviewed students who attended an elite college. I did not interview students from rural areas who attended a less selective 4-year institution. As a result, I do not know how and whether their high school experiences may have been different than

those of the interviewed students. Of particular interest in this regard is whether equally intellectually qualified students chose to go to a less selective institution that was closer to home because they subscribed to a ruralness orientation. Or perhaps students, equally qualified to the interview group, lack the social capital that came to be important for the interviewed group? A future study might take up these issues.

The final limitation that I describe here has to do with my understanding, or lack thereof, of students who did not go to college. I did not interview youth who were work-bound. As a result, I do not know why they do not matriculate. Did their parents hold lower educational expectations for them? Did they not have encounters with encouraging community members? Are they less qualified? Are they uninterested in academics? I simply cannot address these questions with this study. Therefore, I created a plan for my work in the future that I hope will help me address these limitations. I outline this plan in the following section.

Future Work

I was able to successfully address my research questions with my dissertation analyses. However, my findings caused me to develop new avenues of interest for future research. In these final pages of my dissertation I articulate my ideas and provide the rationale for each of them.

I would like the opportunity to build on my dissertation work and conduct a comparative analysis of schools located in rural areas with a focus on the differences and similarities in schooling opportunities for youth in rural communities with divergent occupational structures (agrarian versus logging for example). In this analysis, I propose investigating two separate questions:

1. How are students' post-secondary decisions influenced by the occupational structure and constraints of the rural community?
2. Does the structure and social organization of schools inform the post-secondary decisions of youth differently based on whether their schools are located in rural, urban, or suburban areas?

My interest in Research Question 1 stems from my dissertation finding that students' decisions to matriculate to college were related to a desire for financial success and that many interviewed students spoke about going to college in reaction to the economic conditions of their communities. My interview sample came from areas with similar economic structures, but I wonder whether students may talk about their decisions differently if they live in rural areas with different economies and different economic stability.

My interest in Research Question 2 also stems from my dissertation work. I studied students who attended schools in rural areas and compared them to each other. Now I would like to expand my analysis of the social organization and structure of schools to compare students in rural, suburban, and urban areas. I believe that such an analysis will allow me to see whether my dissertation findings measure phenomena that are uniquely rural or if instead these phenomena are important for the college matriculation of all youth. If I find, as I believe I will, that there are certain phenomena that are uniquely rural, I will pose a third research question aimed at seeing if I can describe the ways those phenomena work in individual schools to influence post-secondary choices.

3. How are these phenomena articulated in individual rural schools?

To answer Questions 1 and 3, I would like to complete in-depth studies in about six schools located in rural areas. These schools would be evenly mixed between types

of rural areas, such that I might have three schools located in logging communities and three schools located in agrarian communities. I would like to embed myself in each rural community and school for a time, so I can get information, other than student reports, about how communities and schools function with regard to matriculation.

To answer my first question, I would like to interview groups of students from all of grades 9 to 12 about their post-secondary plans at three different time points throughout the year. I believe that by interviewing students of various ages I will be able to capture the pathways by which students in these communities come to make their post-secondary choices. Further, interviewing students at multiple time points will give me the opportunity to confirm that students' statements are indeed accurate reflections of their beliefs and not indicative of something else.

Additionally, I will take these interview opportunities to talk with students about their relationships with teachers and school personnel, so I can begin to answer Research Question 3. To further answer my third question, I would like to interview groups of teachers and school administrators about the structure and social organization of their schools. Specifically, I am interested in seeing if I can uncover whether and how teachers make choices about which students to mentor. I also want teachers to tell me what about their school increases or constrain their ability to form meaningful partnerships with students. I would also expect to ask questions about what teachers and administrators want their students to achieve educationally and occupationally.

Finally, completely unrelated to these three questions, I am concerned about the impact that the reversal of higher education race-based affirmative action policies will have on students from rural areas. In my analyses I found that minority youth were more

likely to matriculate to college than were non-minority youth. I believe that this finding can be attributed in part to affirmative action policies. Historically, these policies have allowed both rural and minority students to have greater access to higher education, but now that states like California and Michigan have deemed race-based policies to be unconstitutional, I tend to believe that rates of college matriculation for minority youth from rural areas will drop in these states. I would like to assess whether my hypothesis is correct. If it is, then rural researchers interested in promoting access to higher education for all need to start paying more attention to the unique matriculation challenges minority youth from rural areas are likely to face in the wake of these decisions.

By continuing on with questions like the ones I have posed here, I hope to be better able to serve youth and schools in rural areas. Obtaining some form of higher education is becoming increasingly important in today's world and I do not want to leave residents of rural communities behind. I realize that there is resistance to the notion of encouraging college-going because of the fear that matriculation leads to the brain drain and ultimately the erosion of rural communities. However, it is not fair to expect youth to go unemployed in the interest of a close-knit community.

Appendix A: Technical Notes

Chapter 3

1. Post-positivist researchers do not believe that knowledge is value-free, instead they emphasize that theory and practice are entwined making knowledge somewhat context specific. Whereas positivists believe that knowledge is infallible truth, post-positivists recognize that the goal of science is to try to achieve truth, but ultimately all research can do is come closer to approximating true knowledge (Lincoln & Guba, 2000).
2. This is also referred to as a component model in the literature (Greene & Caracelli, 1997).
3. This is also referred to as an integrated model in the literature (Greene & Caracelli, 1997).
4. Cognitive tests, as well as all of the questionnaires, were created and developed by a series of contractors working in conjunction with the U.S. Department of Education, Office of Educational Research and Improvement. The primary contractor for NELS:88 was The National Opinion Research Center (NORC). This organization designed the sample, collected and prepared the data, and created the student and parent surveys. Westat Inc. and the Educational Testing Services created the principal surveys and cognitive tests.
5. I should note that the measures included in the NELS:88 dataset were not necessarily meant to assess social capital. Thus many of the measures I use are actually proxies for the idea of social capital rather than direct measures of this construct. However, I incorporated the best items I could find to measure the constructs of norms and information sharing. Throughout my discussion of these items, I justify my reasoning for using them.
6. Typically in regression researchers have to dummy code each of their categorical variables. This means that they have to create a 2-level variable coded '1' or '0'. When there are g levels, or groups, to the categorical variable, where g is greater than 2, the researcher breaks the variable into $g - 1$ variables, where each of the $g - 1$ categories are coded '1' and all other categories coded '0'. The single category that is left out of the variable creation becomes the comparison group for all other variables. In binary logistic regression the regression itself takes care of this dummy coding, the researchers have only to indentify which category they wish to use as the comparison. For my regression analysis I used the middle category as the comparison group for all 3-level categorical variables. In the case of my 4-level variables, there was no category that conceptually fit

the notion of a middle category. Therefore, I made the comparison group for college exam participation, 'took neither the ACT nor the SAT', and for region, 'Northeast' was the comparison group.

7. The Barron's Guide defines 'most competitive' as colleges that generally "require a high school class rank in the top 10-20% and grade averages of A to B+. Median freshman test scores at these colleges are generally between 655 and 800 on the SAT1 and 29 and above on the ACT." Additionally most admit less than one third of applicants (Barron's Guide, 2001).

8. The Barron's Guide definition of a highly competitive college is as follows. "Colleges in this group look for students with grade averages of B+ to B and accept most of their students from the top 20% to 35% of the high school class, Median freshman test scores at these colleges range from 620 to 654 on SAT I and 27 or 28 on the ACT. These schools generally accept between one third and one half of their applicants" (Barron's Guide, 2001).

9. Ideally, I would have measured the presence of an AP curriculum, but there were very few schools that offered AP courses. This is typical in rural America because schools are too small to be able to provide AP courses as an option. Therefore, I measured an advanced mathematics course.

10. Once a researcher is satisfied with the model she creates, including the main effects and interactions, as I was here, Hosmer and Lemeshow (2000) suggest assessing the model's goodness-of-fit to see how well the model predicts the outcome. I had far more than 400 students, which meant that I had a sufficient sample size to accurately conduct goodness-of-fit tests (Hosmer & Lemeshow, 2000).

The most common statistic used to report results from binary logistic regressions is the Odds Ratio. Using this statistic, I could describe the likelihood that an independent variable would influence a student's matriculation to a 4 year college. I also needed to assess the fit of my regression model. To do so, I employed the following series of statistics associated with binary logistic regressions. The Hosmer and Lemeshow Test Chi Square statistic is an indicator of the statistical significance of the model's ability to predict the dependent variable. The model is a poor fit if the statistic is below .05. The Nagelkerke R Square statistic is a measure of how well the model predicts the dependent variable on a scale from 0, does not predict, to 1, fully predicts. Finally, the Percentage Correctly Predicted statistic is the probability that the college matriculation of students in this study is accurately predicted by the regression model. The Percentage Correctly Predicted statistic is often criticized for inflating the power of the model. One way to counter this statistic is to use subset validation. However, the sample size for this dissertation was not large enough to create such a subset.

11. Considering all of these areas, any comparisons made using the complete regression model were in consideration of a student whose: parents had some college; had a family income of \$35,000-49,999; was male; was White or Asian; came from a family of 4;

lived in the Northeast; expected to need some college for work, anticipated achieving some college; had parents who expected him to achieve some college; had an average score on the connection to community scale and the connection to family scale; felt it was of average importance to be financially secure and to have a family; had some friends with a full time job, and some friends going to a 4-year college; took neither the SAT nor the ACT; did not take Algebra 1 by 10th grade; had an average math score; participated in 1-2 extracurricular activities; had a high school counselor and favorite teacher who did not expect him to go to college; and had average relationships with his teachers.

12. Essentially, HLM creates separate analyses for each primary group, here for each school, and then uses the outcome, here the log odds, as the dependent variable for the next level of data analysis. In this way, HLM is able to account for the co-dependencies of students within the same school.

13. There are a variety of sampling models one can use within generalized linear modeling, but the model that best suited the purpose of this dissertation was the Bernoulli model. In the Bernoulli model, the outcome variable is binary and only measured once. My outcome measure was ‘went to a 4-year college’ or ‘not’, thus the Bernoulli model was most appropriate.

14. To answer these questions, I chose to model the intercept and the slope of parental education as outcomes. I freed the Level-1 variables of interest (parental education) by group mean centering the variable and allowing error terms to be associated with it. This means that I allowed the relationship between parents’ education and college matriculation, to be different based on the school the student attends. I fixed four control variables at Level-1 through grand mean centering, race, gender, and mathematics course enrollment. By fixing these variables, the school-effects estimates that I modeled in Level-2 were adjusted for these student characteristics.

I then investigated how school characteristics explained college matriculation. I employed a between-school model to do this, using school-level predictors to explain why college matriculation patterns were different based on the school the students attended. This model had predictors at both levels. My Level-1 model remained the same as it was in the within school analysis, but I added predictors at Level-2. I constrained all Level-2 variables using grand-mean centering. Below I present the between-school model.

Level-1:

$$n_{ij} = \beta_{0j} + \beta_1(\text{female}) + \beta_{2j}(\text{parent education}) + \beta_{3j}(\text{less than Algebra 1}) + \beta_{4j}(\text{more than Algebra 1}) + \beta_{5j}(\text{minority}) + r_{ij}.$$

Level 2:

$$\begin{aligned} \beta_{0j} = & \gamma_{00} + \gamma_{01}(\text{medium school}) + \gamma_{02}(\text{large school}) + \gamma_{03}(\text{aggregate family income}) \\ & + \gamma_{04}(\text{high minority school}) + \gamma_{05}(\text{aggregate parents' education}) + \gamma_{05}(\text{aggregate math achievement}) \\ & + \gamma_{07}(\text{calculus class}) + \gamma_{08}(\text{medium school by calculus class}) + \gamma_{09}(\text{large school by calculus class}) \\ & + \gamma_{10}(\text{vocational ed. classes}) + \gamma_{11}(\text{aggregate counselor advises college}) + \gamma_{12}(\text{counselor advised college by large school}) \\ & + \gamma_{16}(\text{counselor advised college by medium school}) + \gamma_{13}(\text{positive student-teacher relationships}) + \mu_{0j} \end{aligned}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20} + \gamma_{2j}(\text{positive student-teacher relationships}) + \mu_{2j}$$

$$\beta_{3j} = \gamma_{30}$$

$$\beta_{4j} = \gamma_{40}$$

The slope of parent education varied. Further, I modeled student-teacher relationships on this slope, so that I could determine whether having a positive relationship with a teacher, affect the relationship between parents' education and college matriculation.

Although the steps in HLM and HGLM analyses are relatively similar, their results and statistics are reported differently. Typically in HLM, researchers present two statistics along with their FUM statistics: reliability estimates and intraclass correlation coefficients (ICC). In HGLM, the reliability estimate is not as important because dichotomous outcomes are neither normally distributed nor linear. As a result this estimate is typically much lower. ICC, which is the ratio of level-2 variance, also does not make sense with a nonlinear, dichotomous outcome because the level-1 variance is heteroscedastic (Raudenbush & Bryk, 2002).

Researchers using a Bernoulli model in HGLM rely on neither reliability estimates nor ICC's. They consider the significance of individual variables within the model and the percent of variance the addition on these variables explain. Additionally, with Bernoulli models, researchers report their findings in log odds rather than unit changes. Log odds ratios are more appropriate than probability statistics because probability is not a linear function of covariates. Therefore, I present my HGLM results in log odds, where a number less than 1 indicates a negative relationship between the independent variable and the outcome, and a number greater than 1 indicates a positive relationship between them. Through my HGLM analysis I was successfully able to identify school characteristics, and particularly social-organizational characteristics, that were important to the college matriculation of rural youth.

15. This is the school year immediately preceding the school year in which I conducted my student interviews. At the time of my FOIA request, the University did not have this information available for students enrolled during the 2007-2008 school year.

16. 181 of these students were in their senior year during the 2006-2007 school year and would have likely graduated by the time I requested interviews. However I included these students in my search because I wanted to include every individual who fit the study's criteria.

17. This number is slightly higher than the number of students with available CIRP data. This increase (n=10) is likely attributable to students who entered the University after their freshman year. The CIRP survey is only administered to incoming freshman.

18. Nineteen of these twenty-four students were seniors during the 2006-2007 academic year. Their e-mail addresses may have no longer been valid because they graduated.

Chapter 5

1. 6.4% of schools offered neither vocational education nor Calculus. 6.6% offered Calculus but not vocational education. 30.8% offered vocational education but not Calculus, and 56.2% offered both.

2. An aggregate of at least five students' responses is a weak measure of the belief of the entire student body. However, in the interest of maintaining a representative sample, I relied on the responses of these randomly chosen students.

3. I was interested in determining how related school size was to social organization. There was a correlation between school size and positive student-teacher relationships. Even though this relationship was significant its magnitude was quite small, -.123.

4. This variable is measured at the 10th grade modal year. Transcripts were only collected on a portion of students in the 12th grade year, thus there the 10th grade measure had less missing data.

5. I treated parents' education as a continuous measure for my HGLM analyses, so I could model the slope of parents' education and matriculation. Thus, when I refer to parents' education, I say things like 'students with more or less educated parents' rather than first-generation college-goers.

6. The intercept in this analysis is interpreted as the odds of college-going for small schools that did not offer Calculus or vocational courses, had small proportions of minority students, average family income, average parental education, average student-teacher relationships, and average counselor encouragement.

Chapter 6

1. CIRP is a national database, but I am only using CIRP data from the University of Michigan. I indicate this smaller sample by using the CIRP/UM distinction.

2. I contacted the Associate Director of the Office of Financial Aid to determine what this scholarship may have been. She informed me that the award was called the Michigan Tradition Scholarship. Following the advent of Proposition 2 in Michigan (which made race-based affirmative action unlawful), the University explored a variety of ways to maintain the diversity valued among the student population. The Office of Undergraduate Admissions used target neighborhood clusters identified by the College Board to identify zip codes where the University did not routinely receive 5 or more applications (in-state) and the applications of students from these geographically underrepresented areas were then forwarded to the Office of Financial Aid for consideration for this award. Three additional factors also determined eligibility for the award. The students had to meet one of the factors in order to be offered the scholarship. The factors were: single parent family, or low SES (income below \$60,000), or first-generation college applicants. The scholarship has since been discontinued because even though the program did provide some degree of geographic diversity it did not provide much assistance furthering economic diversity.

3. *Chrissy's story.* Chrissy is a single child. Her father worked as a semi-skilled mechanic and her mother was a homemaker. Chrissy did not receive a scholarship to come to the University of Michigan, and her parents, who according to her had always just had enough to pay the bills, did not have money set aside to pay for her college tuition. Chrissy had relied on financial aid since she came to the University of Michigan, but the year of the interview she made a mistake in her request for money that left the family \$3,000 short. According to Chrissy, her mother did not want her to drop out of school, so instead her mother funded that \$3,000 by putting it on two credit cards, which she could not pay back.

Immediately prior to our interview, Chrissy met with a liaison for a company that hires students for the summer to go door to door selling products. This liaison told her that she could earn up to \$25,000 during the summer in sales. An amount that would allow her to pay off the money her mother had put on credit cards and provide her with money for rent, food, and bills during the next year of school. However, Chrissy had also been awarded a travel scholarship to take an intern position in Germany working for a company in her field, engineering, for the summer. She wanted to take the opportunity in Germany, but understood that if she took that position she would not be able to pay back her mother and she would not make any money to put towards her next year bills which meant that she would have to work full-time while in school to make ends meet.

With deadlines looming, Chrissy was going to have to make a decision in the next few days. She said that in making her decision, “what I’m trying to do is not look at the money; I’m trying to look at what the experience would bring me”. Later Chrissy said that in saying this, she was trying to explain that she wanted to expand her understanding of the world by going to a foreign country and not have her life choices constrained by money. However, she felt guilt and unease about not taking a job that could provide her with financial security during the next school year. I believe that her increased use of monetary terminology in her interview was caused by this decision weighing on her mind at the time of the interview. Ultimately, though, Chrissy’s desire to see the world outweighed her concern for money. She chose to go to Germany and worked full-time as a waitress the following school year.

Appendix B: List of Variables

I. Binary Logistic Regression

1. *Coding*- Typically in regression researchers have to dummy code each of their categorical variables (Shavelson, 1996). This means that they have to create a 2-level variable coded '1' or '0'. When there are g levels, or groups, to the categorical variable, where g is greater than 2, the researcher breaks the variable into $g - 1$ variables, where each of the $g - 1$ categories are coded '1' and all other categories coded '0'. The single category that is left out of the variable creation becomes the comparison group for all other variables. In binary logistic regression, the analysis takes care of dummy coding categorical variables that have three or more levels, with the researcher setting the default for which category is used as the comparison group (Cohen, Cohen, West, & Aiken, 2003). This category, either the first or the last coded category has to remain the same for every categorical variable. In this analysis, I have categorical variables ranging from two to four levels. I decided to make the comparison category, or the category left out of the analysis, the last coded category. In the case of my 4-level variables, there was no category that conceptually fit the notion of a middle category. Therefore, I made the comparison group for college exam participation, 'took neither the ACT nor the SAT', and for region, 'Northeast' was the comparison group. The coding of my independent variables reflects this procedure.

2. *Demographic Variables*
 - a. Matriculated to College- Dummy coded outcome variable, matriculated to a 4 year college, 1=yes, 0=no. To create this measure I used data from the 3rd and 4th Follow-Up surveys. If the data did not agree at the two time points, I used the highest ranked college as the default. That is, if a student was enrolled in a community college in the 3rd Follow-Up, but in a 4 year college at the 4th Follow-Up, I coded that student as having matriculated to a 4 year college.
 - b. Parent's Level of Education- Three level categorical, parent's highest level of education variable, 1=parent has a high school degree or less, 2=parent has a bachelor's degree or more, 3=parent has some college. To create this variable, I used data from the Base Year and 2nd Follow-Up surveys. Parents' often had different levels of education, with for example, the mother having a Bachelor's degree while the father had obtained a graduate degree. In these instances, I coded for the highest level of

parental education. When one parent had missing data on level of education, I coded for the parent who had existing data.

- c. Family Income- Four level categorical family income variable, 1=family income under \$20,000, 2=family income \$20,000-\$34,999, 3=family income \$35,000-\$49,999, 4=family income \$50,000 or more.
- d. Female- Two level categorical gender variable, 1=female, 2=male.
- e. Minority- Two level categorical race variable, 1=Black/Hispanic/Native American, 2=White/Asian.
- f. Family Composition- Three level categorical family composition variable, 1=three or fewer family members, 2=five or more family members, 3=four family members.
- g. Region- Four level categorical region variable, 1=lives in the Midwest, 2=lives in the South, 3=lives in the West, 4=lives in the Northeast.

3. *Expectations*

- a. Parents' educational expectation for student- Three level categorical variable indicating the degree of education parent desires for her child to achieve, 1=high school degree or less, 2=bachelor's degree or more, 3=some college.
- b. Education level student expects to need for desired job- Three level categorical variable indicating the degree of education the respondent expects to need for the job he desires to have at the age of 30, 1= high school degree or less, 2=bachelor's degree or more, 3=some college.
- c. Education level student expects to achieve- Three level categorical variable indicating the degree of education the respondent expects to achieve, 1= high school degree or less, 2=bachelor's degree or more, 3=some college.

4. *Community Connections*

- a. Community Connectedness- This is a continuous composite measure I created by adding 'important to help others in community' and the reverse coded variable 'important getting away from this area'.
- b. Family Connectedness- This is a continuous composite measure I created by adding 'important living near parents, friends' and the reverse coded variable 'important getting away from parents'.
- c. Important to be financially secure- Factor measuring how the student feels about his future. The factor included the 10th grade variables: 'chances student will be able to own a home', 'chances student will have job that pays well', and 'chances student will have a job he enjoys'. Data was on a five point, very low/very high scale. The factor has an Eigen-value of 2.359 and Cronbach's Alpha of .864.
- d. Personal life most important- Factor measuring what the student feels is most important in the future. The factor included the 10th grade variables:

‘important having children’, ‘important finding right person to marry’, and ‘important having strong friendships’. Data was on a three point, not important/very important scale. The factor has an Eigen-value of 1.70 and Cronbach’s Alpha of .606.

5. *Community Connection Interactions*

- a. Parent BA by financial security- I dummy coded the 3 level variable, ‘parents level of education’ into 2 dummy variables: parent has a high school degree or less, 1=yes, 0=else; and parent has a bachelor’s degree or more, 1=yes, 0=else. I then created the interaction term ‘parent has a bachelor’s degree or more by financial security’ by multiplying the dummy coded, ‘parent has a bachelor’s degree or more’ with the ‘important to be financially secure’ factor.
- b. Parent HS by financial security- I created the interaction term ‘parent has a high school degree or less by financial security’ by multiplying the dummy coded, ‘parent has a high school degree or less’ with the ‘important to be financially secure’ factor.
- c. Female by financial security- I created a dummy coded female variable, 1=female, 0=male. I then multiplied the dummy coded female variable with the ‘important to be financially secure factor’ to create the interaction term, ‘female by financial security’.
- d. Female by want family- I multiplied the dummy coded female variable with the ‘important to have family and friends’ factor to create the interaction term, ‘female by want family’.

6. *Peer Networks*

- a. Number of friends who work full time- Three level categorical variable indicating the number of friends the student has that work full time, 1=No friends have full time job, 2=All friends have full time job, 3=Some friends have full time job.
- b. Number of friends who are going to a 4 year college- Three level categorical variable indicating the number of friends the student has that are going to a 4 year college, 1=No friends going to a 4 year college, 2=All friends going to a 4 year college, 3=Some friends going to a 4 year college.

7. *Academic Behaviors*

- a. Took at least Algebra I- Two level categorical variable, student took at least Algebra I by the end of 10th grade, 1=yes, 2=no.
- b. Math Achievement- Standardized Math Test Achievement, Grade 12, z-scored.
- c. Took College Entrance Exam- Two level categorical variable indicating whether student took the SAT and/or ACT, 1=yes, 2=no.
- d. Number of extracurricular activities the student participated in during high school- Four level categorical variable about the number of extracurricular activities the student participated in during high school, 1=no

participation, 2=participated in three to four activities, 3= participated in five or more activities, 4=participated in one to two activities. To create this variable I recoded F2S30AA-F2S30BK into 1=yes, 0=no. I then summed these variables, creating a continuous extracurricular participation variable. The continuous variable was highly skewed, so I split it into a four level categorical variable with around 25% of students falling within each category.

8. *Academic Networks*

- a. HS counselor wants R to go to college- Two level categorical variable, 1=yes, 2=0, indicating whether the student believes his/her high school guidance counselor wants the student to go to college after high school. I created the variable using the 10th grade variable, F147E, when there was missing data, in imputed valid data on the same measure from the 12th grade.
- b. Positive Student/Teacher Relationship- Factor measuring the academic network the student is embedded in. The factor included the 10th grade variables: ‘teachers are interested in students’, ‘most teachers listen to students’, ‘the teaching is good at this school’, ‘teachers praise the student’s hard work’, and ‘students get along well with teachers’. Data was on a four point, agree/disagree scale. I reverse coded the variables so that 4=strongly agree and 1=strongly disagree. The factor has an Eigenvalue of 2.572 and Cronbach’s Alpha of .759.
- c. Favorite Teacher wants R to go to college- Two level categorical variable, 1=yes, 2=0, indicating whether the student believes his/her favorite high school guidance teacher wants the student to go to college after high school. I created the variable using the 10th grade variable, F147F, when there was missing data, in imputed valid data on the same measure from the 12th grade.

II. HGLM

1. *Student Level Variables*

- a. Matriculated to a 4-year college- Dummy coded matriculation status variable, 1=matriculated to a 4-year college, 0=did not matriculate to a 4-year college.
- b. Female- Dummy coded gender variable, 1=female, 0=male.
- c. Minority- Dummy coded race variable, 1=Black/Hispanic/Native American, 0=White/Asian.
- d. Course Enrollment- Dummy coded course enrollment variables, with 2 variables presented in the tables, ‘Less than Algebra 1’ and ‘More than

Algebra 1', both are in comparison to students who took Algebra 1 by the 10th grade modal year.

- e. Parents' Education- Continuous measure for greatest number of years of education completed by the student's most highly educated parent, z-scored.

2. *School Level Variables*

- a. Average Level of Parents' Education- Aggregate measure of the continuous parents' education variable.
- b. 50% of Student Body from a Minority Group- School-wide percent of the student body who is from a minority race group. Dummy coded 1=50% or more of student body is a minority, 0=less than 50% of student body is a minority.
- c. Average Family Income- Aggregate measure of school average family income.
- d. Average Math Achievement- Aggregate measure of school average standardized math test achievement, Grade 12.
- e. Calculus Course- Dummy coded variable, school has a Calculus course, 1=yes, 0=no.
- f. Vocational Courses- Dummy coded variable, school has vocational courses, 1=yes, 0=no.
- g. Medium School- Dummy coded school size variable, 1=600-999 students, 0=other. The middle category, in this case, 'medium school', is typically the comparison group in categorical variables that have been turned into dummy coded variable, I wanted to model the positive interaction between medium sized schools and calculus course offerings. Therefore, I made small schools the comparison group in this analysis.
- h. Large School- Dummy coded school size variable, 1=1,000 or more students, 0=other.
- i. Pre-Kindergarten to 12th Grade- Dummy coded school composition variable, 1=school includes grades Pre-K to 12, 0=other.
- j. 6th to 12th Grade- Dummy coded school composition variable, 1=school includes grades 6 to 12, 0=other.
- k. 10th to 12th Grade- Dummy coded school composition variable, 1=school includes grades 10 to 12, 0=other.
- l. Positive Student-Teacher Relationships- Aggregate measure of school social organization created using student report measures that I factored at the student level. The student level data was on a four point, agree/disagree scale. I reverse coded the variables so that 4=strongly agree and 1=strongly disagree. I then averaged these factor scores at the school level. The factor included the 10th grade variables: 'teachers are interested in students', 'most teachers listen to students', 'the teaching is good at this school', 'teachers praise the student's hard work', and 'students get along well with teachers'. The factor has an Eigen-value of 2.479 and Cronbach's Alpha of .741.

- m. Guidance Counselor Encourages College- Aggregate measure of school social organization created using 10th grade student report measure (F1S47E) 'guidance counselor's desire for student in the future', 1=encouraged college, 0=did not encourage college.

Appendix C:
A Model Predicting the College Matriculation of Rural Youth (n=2855)

Independent Variable	Model 1: Parent Ed.	Model 2: Demo. Info.	Model 3: Expectation	Model 4: Ruralness	Model 5: Peer Network	Model 6: Academic Behavior	Model 7: Academic Networks
Parents' ed., HS degree less	0.467***	0.554***	0.771*	0.757*	0.746*	0.866	0.839
Parents' ed., BA or more	4.363***	3.740***	2.839***	2.948***	2.693***	2.346***	2.270***
Family income under 20,000		0.574***	0.670*	0.716	0.747	0.944	0.946
Family income 20,000-34,999		0.775*	0.920	0.954	1.041	1.156	1.079
Family income 50,000 +		1.207	1.061	1.063	1.110	1.169	1.151
Female		1.466***	1.054	1.019	0.909	0.873	.869
Minority		1.056	0.898	0.917	0.994	1.604**	1.626**
Number of Older Siblings		0.902*	1.030	1.036	1.000	1.021	1.020
Number of Younger Siblings		0.896*	0.979	0.986	1.024	1.002	1.021
Lives with Mother		0.789**	0.665**	0.653***	0.624***	0.645**	0.618**
Lives with Father		0.458***	0.484**	0.484**	0.485*	0.479*	0.523*
Other family composition		0.262***	0.533	0.540	0.560	0.639	0.656
Lives in Midwest		0.491***	0.299***	0.285***	0.326***	0.438***	0.444**
Lives in South		0.947	0.579**	0.581**	0.644*	0.550**	0.541**
Lives in West		0.694**	0.441***	0.423***	0.508**	0.601*	0.605*
Parents' expect HS or less			0.689	0.662	0.738	0.759	0.672
Parents' expect BA or more			2.066***	1.981**	1.941**	1.822**	1.801**
Expect need HS/less for job			1.635	1.670	1.839	2.322*	2.175
Expect need BA/more for job			7.085***	7.424***	6.627***	5.491***	5.564***
Expect to get HS/less			0.208**	0.224***	.238*	0.317	0.372
Expect to get BA/more			4.542***	3.954***	3.371***	2.120***	2.291***
Important live in Community				0.986	0.970	0.940	0.951
Important live near Family				1.167**	1.145*	1.205**	1.245*
Important to be financially secure				1.315***	1.281***	1.136	1.162*
Important to have family				1.141*	1.112	1.094	1.143*
No friends have full time job					1.335	1.171	1.191
All friends have full time job					0.270***	0.336***	0.330***
No friends going 4 yr college					0.254***	0.477	0.402
All friends going 4 yr college					1.989***	1.791***	1.856***
Took at least Algebra 1						1.986***	1.915**
Average Math Score						1.064***	1.066***
Took College Entrance Exam						5.018***	5.208***
0 extracurricular activity						0.667	0.621*
3-4 extracurricular activities						1.447*	1.450*
5 + extracurricular activities						2.038***	2.149***
HS counselor wants R to go to college							1.858***
Positive Student/Teacher Relationship							0.731**
Parent HS by S-T Relationship							1.395*
Parent BA by S-T Relationship							0.995
Constant	0.644***	0.901	0.079***	0.085***	0.087***	0.001***	0.001***

Chi Square and Percent Predicted Statistics for a Model Predicting the College Matriculation of Rural Youth (n=2,855)

Independent Variable	Model 1: Parent Ed.	Model 2: Demo. Info.	Model 3: Expectations	Model 4: Ruralness	Model 5: Peer Networks	Model 6: Academic Behaviors	Model 7: Academic Networks
X ²	449.31***	162.45***	1065.72***	45.36***	188.35***	294.178**	37.227***
PCP	69.3%	70.2%	82.1%	82.0%	84.8%	87.3%	87.1%

Note: I have reported the numerical results as odds ratios. Any odds ratio under 1 means that grouping of students is less likely to go to college than the comparison group. Whereas, a ratio over 1 means that grouping of students is more likely to go to college than the comparison group. In Model 1 then, you can see that a student whose parent has a high school degree or less is about one half as likely to go to college as a student whose parent has attained some post secondary education. A student whose parent has a bachelors degree or more is more than four times as likely to go to college as a student whose parent has attained some post secondary education.

Appendix D: Interview Protocol

1. Additional Demographic Information- All of the interviewed students reported being high achieving in high school, as represented by the fact that each was either the valedictorian or salutatorian of their high school. The students came from a variety of rural areas in Michigan, ranging from lower Michigan to the Upper Peninsula.

Seven had parents who had completed a high school degree or less. Five had parents who attended some post secondary education. One student had a mother who had a high school degree and a father who had a bachelor's degree. When this student was two years old, his father was permanently disabled in an industrial fire. As a result of smoke inhalation and lack of oxygen to his brain, the father has lived the remainder of his life in a near vegetative state. He requires 24 hour care, which is provided by his wife and other family members. No one else in the student's extended family has gone to college. He has not privy to information regarding the college application process or the college experience from his father because his father is incapable of communicating with more than basic sounds. He also has not reaped the economic benefits of having a parent graduate college. He frequently referenced that financially his family operated on a hand to mouth basis. As a result I argue that this student functions as a first-generation college-goer.

11 of the students had biological parents who were still married to each other. One male student was raised by his single father from infancy. The parents of one female student divorced while she was a toddler and both remarried soon thereafter. Her parents shared joint custody of her and lived within 5 miles of each other, but her primary residence was with her mother and step-father.

Two students had lived outside of their rural Michigan community at some point in their lives. Of those, one had lived in rural Alaska, and the other had lived in rural Iowa. 12 of the students lived in the same communities their parents grew up in.

The students had between 0 and 4 siblings. When a student had an older sibling, the older sibling had not gone to college.

2. For my gender analysis of students' use of words related to the concept of money, I went through the individual interviews and created a list of words the students used when they talked about finances. The following words constitute that list: money, wealth, rich, poor, finances, pay, cost, work, and job. I coded each time the student used one of these

words, created a total score for each students, and then averaged the score among men and among women.

Appendix E:
List of Rural Michigan Counties

- | | |
|--------------------|------------------|
| 1. Alcona | 39. Montmorency |
| 2. Alger | 40. Newaygo |
| 3. Alpena | 41. Oceana |
| 4. Antrim | 42. Ogemaw |
| 5. Arenac | 43. Ontonagon |
| 6. Baraga | 44. Osceola |
| 7. Barry | 45. Oscoda |
| 8. Benzie | 46. Otsego |
| 9. Branch | 47. Presque Isle |
| 10. Cass | 48. Roscommon |
| 11. Charlevoix | 49. Saint Joseph |
| 12. Cheboygan | 50. Sanilac |
| 13. Chippewa | 51. Schoolcraft |
| 14. Clare | 52. Shiawassee |
| 15. Crawford | 53. Tuscola |
| 16. Delta | 54. Wexford |
| 17. Dickinson | 55. Mecosta |
| 18. Emmet | 56. Menominee |
| 19. Gladwin | 57. Missaukee |
| 20. Gogebic | 58. Montcalm |
| 21. Grand Traverse | |
| 22. Gratiot | |
| 23. Hillsdale | |
| 24. Houghton | |
| 25. Huron | |
| 26. Ionia | |
| 27. Iosco | |
| 28. Iron | |
| 29. Isabella | |
| 30. Kalkaska | |
| 31. Keweenaw | |
| 32. Lake | |
| 33. Leelanau | |
| 34. Luce | |
| 35. Mackinac | |
| 36. Manistee | |
| 37. Marquette | |
| 38. Mason | |

Appendix F
Recruitment E-mail

Are you from a rural Michigan area?

Are you one of the first people in your family to go to college?

If you answered yes to both of these questions, I'd like to interview you.

My name is Sarah Tucker and I'm a graduate student at the University of Michigan. I'm conducting a study about first generation college students from rural areas. I am interested in knowing who and what helped you decide to come here. I am hoping that your interviews will help me help other rural high school students get to college as well. If you are interested in participating, I would like to interview you for an hour at a location that is convenient for you. Please reply to this e-mail, so we can set up a time to meet or so I can answer any questions you may have.

Sincerely,

Sarah Tucker

Appendix G:
Informed Consent

This study is an attempt to understand how rural students decide whether or not to go to college and what influences those decisions. In agreeing to participate, you are agreeing to allow me to interview you about those factors in your life that influenced your decision and ability to go to college, and to audiotape this interview. These interviews will include questions about your schools, families, and communities. The interview will take no longer than 1 hour.

This study poses only a minimal risk for participation, which means that answering the interview questions should not cause you harm or discomfort. However, if at ANY time you decide that you do not want to answer some or all of the questions in the interview, please inform me and we will either skip the question or stop the interview. You will not be identified in any reports on this study. Records will be kept confidential to the extent provided by federal, state, and local law.

If you agree to participate, please print your name and your telephone number below. If you have any questions about the study please feel free to contact me, Sarah Tucker, or my faculty advisor, Dr. Carla O'Connor. Our contact information is provided below.

I'm delighted to have you on board!

Sincerely,

Sarah A. Tucker
Doctoral Candidate
University of Michigan
(734) 276-4209
tuckers@umich.edu

Dr. Carla O'Connor
Faculty Advisor
University of Michigan
(734) 647-0606

Printed Name

Signature

Telephone number

E-mail address (if you have one)

Date

Appendix H:

Interview Guide

Let me tell you a little bit about why I asked to interview you and what I'm interested in. This interview will be part of my dissertation work. I've been investigating college students who come from rural areas. I am particularly interested in rural areas because I am from West Virginia and many of my friends and relatives did not go to college. Through my research, I have found that rural students from around the country are also unlikely to go to college. First-generation college students from rural areas are even less likely to go to college. But as you are evidence, there are rural students who do go to college. I want to interview you to see if I can start to understand how students like you beat all the statistics, and end up in college. Do you have any questions so far?

I. Question of Interest

I want to start off with you imagining that you are writing a book about your life. In this section of the book, you want to tell your readers about how you go to college. What would you tell them?

1. Family Network Sub-questions: (The student will likely answer most of these items while answering the primary question. If not, make sure that I get answers to the following sub-questions.)
 - a. Who did you live with while you were growing up?

- b. What is your dad's highest degree of education?
- c. What does your dad do for a living?
- d. What is your mom's highest degree of education?
- e. What does your mom do for a living?
- f. How many siblings do you have?
 - i. If so, what do your siblings do?
 - ii. What are your older siblings' highest degrees of education?
 - iii. What do your younger siblings want to do?
- g. Where were you born?
- h. Have you ever moved?
 - i. If so, from where to where?
- i. What did your parents tell you about going to college?
- j. What did your siblings tell you about going to college?
- k. Are there any other family members that were particularly important in your life?
 - i. If yes, who and why?
 - ii. What if anything did they tell you about college?

2. High School Network Sub-questions:

- a. Where did you go to high school?
- b. How many students were in your class?
- c. What classes did you take?
- d. Did you participate in any extracurricular activities?
 - i. If yes, which ones?

- ii. If yes, to what degree did you participate?
- iii. Were you particularly invested in any of them?
 - 1. If so, which and why?
- e. Were any school personnel particularly important in your life?
 - i. If yes, who and how so?
 - ii. What if anything did they tell you about college?
- f. How would you describe your group of high school friends?
 - i. What are they doing now?

II. Question of Interest

Imagine that you are still writing that book and you want to tell your readers about the community you grew up in. What would you tell them about your community and your life there?

1. Additional Non-Kin Network Sub-questions:

- a. Does anyone we haven't already talked about stand out to you as being particularly important in your life?
 - i. If so, who and how?
- b. Do you remember ever talking to community members about going to college?
 - i. If so what did you talk about?
- c. What do you think you would have to do in order to be considered successful in your community?

III. Question of Interest

I realize that your answer to my next question may change if I ask you in six months, but how do you see yourself in 10 years? PROMPTS: Where do you live? What are you doing (work, school)? Who do you live with?

If you had to order the goals you just told me about from the most important to the least important, how would you order them?

IV. Question of Interest

Looking back now, what do you think would have been helpful for you in learning about how to get to college and what it means to be in college?

Appendix I:

Coding Scheme

I created a coding scheme as a way of understanding how students experienced those things that influenced them to go to college. The following items emerged as the major categories of interest.

Student Expectations and Aspirations: Students' discussions about their goals for their future.

Motivation: Students' comments about why they perceive they have set their goals the way they have.

Expectations and Aspirations of Others: The student's commentary about the educational and occupational goals others hold for him. Remarks about how the student experiences the expectations and aspirations others have for him.

Social Networks/Role of Others: Students' discussions about those groups of people or individuals who were particularly important in the life of the student. I paid particular attention to the way those groups or individuals became important either positively or negatively in students' college going process.

Defining Moments: Marks any time the student talks about a life event (conversation, travel experience, tragedy, etc.) that shaped the way they viewed their future.

Differentiation of Self: The student's assessment of why she is unique and how she experiences that uniqueness.

College Transition/Rite of Passage: The student's depiction of their feelings surrounding starting college, including both their feelings about home and the University.

I then coded the data within each category for 1) conditions, 2) strategies, and 3) consequences (Strauss, 1987). Thus, for the differentiation of self category for example, I coded for 1) why is this an example of differentiation (condition), 2) what strategy did the student use to determine she was different, and 3) what happened as a result of this differentiation (consequences).

I also looked within the categories with consideration of gender differences. I found that there were differences between men and women when it came to: student

expectations and aspirations; motivations; defining moments, and differentiation of self.

References

- Adelman, C. (2001). *Answers in the Toolbox: Academic Intensity, Attendance Patterns and Bachelor's Degree Attainment*. Retrieved 05-13-07. From <http://www.ed.gov/pubs/Toolbox/toolbox.html>.
- Adelman, C. (2002). The relationship between urbanicity and educational outcomes. In W. Tierney & L. Hagedorn (Eds.), *Increasing access to college: Extending possibilities for all students*. Albany: State University of New York Press.
- Arnold, M.L., Newman, J.H., Gaddy, B.B., & Dean, C.B. (2005). A look at the condition of rural education research: Setting a direction for future research. *Journal of Research in Rural Education*, 20(6). Retrieved April 02, 2008 from <http://www.umaine.edu/jrre/20-6.htm>.
- Asher, H. (1979). *Causal Modeling*. Sage University Paper Series on Quantitative Applications in the Social Sciences, 07-003. Beverly Hills: Sage Publications.
- Attinasi, L. C. (1989). Getting In: Mexican Americans' perceptions of University attendance and the implications for freshman year persistence. *The Journal of Higher Education*, 60(3), 247-277.
- Barron's Educational Series, I. (2000). *Barron's profiles of American colleges 2001*.
- Baron, S., Field, J., & Schuller, T. eds. (2000). *Social capital: Critical perspectives*. New York: Oxford University Press.
- Bauch, P. (2001). School-community partnerships in rural schools: Leadership renewal, and a sense of place. *Peabody Journal of Education*, 72(2), 204-221.
- Beeson, E., & Strange, M. (2003). *Why rural matters 2003*. Washington, DC: Rural School and Community Trust.
- Bickel, R., Banks, S., & Spatig, L. (1991). Bridging the gap between high school and college in an Appalachian state: A near-replication of Florida research. *Journal of Research in Rural Education*, 7(2), 75-87.
- Bickel, R., Howley, C., Williams, T., & Glascock, C. (2001). High school size, achievement equity, and cost: Robust interaction effects and tentative results. *Education Policy Analysis Archives*, 9(40), pp.
- Blackwell, D., & McLaughlin, D. (1998). Do rural youth attain their educational goals? *Rural Development Perspectives*, 13(3), 37-44.
- Blau, P., & Duncan, O. D. (1967). *The American Occupational Structure*. New York: John Wiley and Sons, Inc.
- Boissevain, J. (1974). *Friends of Friends: Networks, Manipulators, and Coalitions*. New York: St. Martin's Press.
- Bourdieu, P. (1985). The Forms of Capital. In J. G. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education* (pp. 241-258). New York: Greenwood.
- Bourdieu, P. (1986). The Forms of Capital. In J. Richardson (ed.), *Handbook of Theory and Research for the Sociology of Education*. New York: Greenwood, 241-248.

- Bowles, S. (1972). Schooling and Inequality from Generation to Generation. *Journal of Political Economy*, 80(3 Part 2), S219-251.
- Brand, J. & Halaby, C. (2006). Regression and matching estimates of the effects of elite college attendance on educational and career achievement. *Social Science Research*, 35, 749-770.
- Brewer, D.J., Eide, E.R., & Ehrenberg, R.G. (1999). Does it pay to attend an elite private college? Cross-cohort evidence on the effects of college type on earnings. *Journal of Human Resources*, 34, 104-123.
- Brooks-Gunn, J., Duncan, G., & Aber, J. (1997). *Neighborhood poverty: Context and consequences for children* (Vol. 1-2). New York: Russell Sage.
- Bryk, A., Lee, V.E., & Holland, P.B. (1993). *Catholic Schools and the Common Good*. Cambridge, MA: Harvard University Press.
- Budge, K. (2006). Rural leaders, rural places: Problem, privilege, and possibility. *Journal of Research in Rural Education*, 21(13).
- Burnell, B. (2003). The "real world" aspirations of work-bound rural students. *Journal of Research in Rural Education*, 18(2), 104-113.
- Burt, R.S. (1992). *Structural holes, the social structures of competition*. Cambridge, MA: Harvard University Press.
- Cabera, A., & LaNasa, S. (2000). Overcoming the tasks on the path to college for America's disadvantaged. *New Directions for Institutional Research*, 107(Fall), 31-43.
- Cadwallader, M. T. (1992). Migration and residential mobility: Macro and micro approaches. Madison, WI: University of Wisconsin Press.
- Carnevale, A.P., & Rose, S.J. (2004). Socioeconomic status, race/ethnicity, and selective college admissions. In R.D. Kahlenberg ed., *America's untapped resource low-income students in higher education* (pp. 101-156). New York: Century Foundation Press.
- Carr, P. & Kefalas, M. (2009). *Hollowing Out the Middle*. Boston: Beacon Press.
- Calhoun, C., LiPuma, E., & Postone, M., eds. (1993). *Bourdieu: Critical Perspectives*. Chicago: University Press.
- Chambers, J. (1981). An analysis of school size under a voucher system. *Educational Evaluation and Policy Analysis*, 3(29-40).
- Chenoweth, E., & Galliher, R. (2004). Factors influencing college aspirations of rural West Virginia high school students. *Journal of Research in Rural Education*, 19(2).
- Choy, S. (2001). *Students Whose Parents Did Not Go to College: Postsecondary Access, Persistence and Attainment*. Retrieved from: http://nces.ed.gov/pubs2001/2001072_Essay.pdf.
- Choy, S., Horn, L., Nunez, A.-M., & Chen, X. (2000). Transition to college: What helps at-risk students whose parents did not attend college. *New Directions for Institutional Research*, 107(Fall), 45-63.
- Cobb, R. A., McIntire, W. G., & Pratt, P. A. (1989). Vocational and educational aspirations of high school students: A problem for rural America. *Research in Rural Education*, 6(2), 11-16.

- Cohen, J., Cohen, P., West, S., & Aiken, L. (2003). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences* (3rd edition ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Coladarci, T., & Hancock, J. (2002). *The limited evidence regarding effects of grade-span configurations on academic achievement: What rural educators should know*. ERIC Document Reproduction Service No. ED467714.
- Coleman, J. S. (1987). The Relations between School and Social Structure. In M. Hallinan (Ed.), *The Social Organization of Schools: New Conceptualizations of the Learning Process*. New York: Plenum Press.
- Coleman, J. S. (1988). Social Capital in the Creation of Human Capital. *The American Journal of Sociology*, *94*, S95-S120.
- Coleman, J.S. (1991). *Parental involvement in education*. Washington, DC: U.S. Government Printing Office.
- Conklin, M.E., & Dailey, A.R. (1981). Does consistency of parental educational encouragement matter for secondary school students? *Sociology of Education*, *54* (pg. 254-262).
- Cooper, C.R. (2001). Bridging multiple worlds; Inclusive, selective, and competitive programs, Latino youth, and pathways to college. Affirmative development of ethnic minority students. *The CEIC Review: A Catalyst for Merging Research, Policy, and Practice*, *9*, 14-15, 22.
- Cooper, C. R. (2002). Five bridges along students' pathways to college: A developmental blueprint of families, teachers, counselors, mentors, and peers in the Puente Project *Educational Policy*, *16*(4), 607-622.
- Cresswell, Clark, Gutmann, & Hanson (2003). Advanced mixed methods research designs. In C. Teddlie, A. Tashakkori (eds.), *Handbook of Mixed Methods in Social and Behavioral Research*. Thousand Oakes, CA: Sage Publications.
- Crockett, L., & Bingham, C. R. (2000). Anticipating adulthood: Expected timing of work and family transitions among rural youth. *Journal of Research on Adolescence*, *10*(2), 151-172.
- Crockett, L., Shanahan, M., & Jackson-Newsom, J. (2000). Rural Youth: Ecological and Life Course Perspectives. In R. Montemayor, G. Adams & T. Gullotta (Eds.), *Adolescent Diversity in Ethnic, Economic, and Cultural Contexts*. Thousand Oaks, CA: Sage Publications.
- Croninger, R. G., & Lee, V. E. (2001). Social capital and dropping out of high schools: Benefits to at-risk students of teachers' support and guidance. *Teachers College Press*, *103*(4), 548-581.
- DeYoung, A. (1987). The Status of American Rural Education Research: An Integrated Review and Commentary. *Review of Educational Research*, *57*(2), 123-148.
- DeYoung, A. (1995). Constructing and staffing the cultural bridge: The school as change agent in rural Appalachia. *Anthropology and Education Quarterly*, *26*(2), 168-192.
- DeYoung, A. (2002). *Dilemmas of Rural Life and Livelihood: Academics and Community* (No. ED 471920). Arlington, VA: ACCLAIM.
- DeYoung, A., & Lawrence, B. (1995). On Hoosiers, Yankees, and Mountaineers. *Phi Delta Kappan*(October), 104-112.

- Denzin, N. K. (1989). *The Research Act: A Theoretical Introduction to Sociological Methods* (3rd ed.). Englewood Cliffs, N.J.: Prentice Hall.
- Donaldson, G. A. (1986). Do you need to leave home to grow up? The rural adolescent's dilemma. *Research in Rural Education*, 3(3), 121-125.
- Dornbusch, S. m., Flagrow, K. L., & Lin, I. (1996). The social structure of schooling. *Annual Review of Psychology*, 47, 401-429.
- Duncan, C. (1999). *Worlds Apart*. New Haven: Yale University Press.
- Duncan, C. (2001). Social capital in America's poor rural communities. In S. Saegert & J. P. Thompson (Eds.), *Social capital and poor communities* (pp. 60-86). New York: Russell Sage Foundation.
- Duncan, O. D., Featherman, D. L., & Duncan, B. (1972). *Socioeconomic Background and Achievement*. New York: Seminar Press.
- Dunne, F. (1977). Choosing smallness: An examination of the small school experience in rural America. In J. Sher (Ed.), *Education in rural America: A reassessment of conventional wisdom* (pp. 81-124). Boulder, CO: Westview.
- Eccles, J., Barber, B., Stone, M., & Hunt, J. (2003). Extracurricular Activities and Adolescent Development. *Journal of Social Issues*, 59(4), 865-889.
- Elder Jr., G. H., & Conger, R. D. (2000). *Children of the Land*. Chicago: The University of Chicago Press.
- Entwisle, D., Alexander, K., & Olson, L. (2005). First grade and educational attainment by age 22: A new story. *The American Journal of Sociology*, 110(5), 1458-1502.
- Epstein, J., & Sanders, M. (2000). Connecting home, school and community: New directions for social research In M. Hallinan (Ed.), *The Handbook of the Sociology of Education* (pp. 285-306). New York: Kluwer Academic/Plenum Publishers.
- Falsey, B., & Heyns, B. (1984). The college channel: Private and public schools reconsidered. *Sociology of Education*, 57(2), 111-122.
- Fanning, J. (1995). *Rural school consolidation and student learning*. ERIC Document Reproduction Service No. ED 384484.
- Farmer, T. W., Dadisman, K., Latendresse, S. J., Thompson, J., Irvin, M. J., & Zhang, L. (2006). Educating out and giving back: Adults' conceptions of successful outcomes of African American high school students from impoverished rural communities. *Journal of Research in Rural Education*, 21(10).
- Ferguson, K. (1991). Interpretation and genealogy in feminism. *Signs: Journal of Women in Culture and Society*, 16(2), 322-339.
- Flora, J. (1998). Social capital and communities of place. *Rural Sociology*, 63(4), 481-506.
- Fowler, W., & Walberg, H. (1991). School size, characteristics, and outcomes. *American Educational Research Journal*, 13(2), 189-202.
- Gaeffe, P. (2009). Social capital: the dark side. In G. T. Svendsen & G. L. H. Svendsen (eds.), *Handbook of Social Capital: The Troika of Sociology, Political Science, and Economics*. Edward Elgar: Northampton, MA.
- Gamoran, A. (1987). The stratification of high school learning opportunities. *Sociology of Education*, 60(3), 135-155.
- Gardner, J.A. (1987). *Transition from high school to postsecondary education: Analytic studies*. Washington, DC: Center for Education Statistics.

- Goodenow, C., & Grady, K. E. (1993). The relationship of school belonging and friends values to academic innovation among urban adolescent students. *Journal of Experimental Education*, 62, 60–71.
- Granovetter, M.S. (1974). *Getting a job: A study of contacts and careers*. Cambridge, MA: Harvard University Press.
- Grant, R., & Sugarman, J. (2004). Ethics in Human Subjects Research: Do Incentives Matter. *Journal of Medicine and Philosophy*, 29(6), 717-738.
- Graeff, P. (2009). Social capital: The dark side. In G. Svendsen & G. Svendsen (eds.), *Handbook of Social Capital: The Troika of Sociology, Political Science, and Economics*. Edward Elgar: Northampton, MA.
- Greene, J.C., & Caracelli, V.J. (eds.) (1997). *Advances in mixed-method evaluation. The challenges and benefits of integrating diverse paradigms*. San Francisco: Jossey-Bass Publishers.
- Guba, E.G., & Lincoln, Y.S. (1989). *Fourth generation evaluation*. Newbury Park, CA: Sage.
- Guba, E.G., & Lincoln, Y.S. (1994). Competing paradigms in qualitative research. In N.K. Denzin & Y.S. Lincoln (Eds.), *Handbook of Qualitative Research*. New York: Sage Publications.
- Haas, T., & Nachtigal, P. (1998). *Place value*. Charleston, WV: Appalachia Educational Laboratory, Inc.
- Haller, E., & Virkler, S. (1993). Another look at rural-nonrural differences in students' educational aspirations. *Journal of Research in Rural Education*, 9(3), 170-178.
- Halvorsen, A., Lee, V., & Andrade, F. (2009). A Mixed-method study of teachers' attitudes about teaching in urban and low-income schools. *Urban Education*, 44 (pg. 181-224).
- Hansen, D. O., & Ross, P. (1980). *Education, significant others and farm-reared adolescents* Paper presented at the Annual Meeting of the North Central Sociological Society.
- Hansen, T. D., & McIntire, W. G. (1989). Family Structure variables as predictors of educational and vocational aspirations of high school seniors. *Research in Rural Education*, 6, 39-50.
- Hao, L. (1994). *Kin Support, Welfare, and Out-of-Wedlock Mothers*. New York: Garland.
- Hartwig, F., & Dearing, B.E. (1979). *Exploratory Data Analysis*. Sage University Paper Series on Quantitative Applications in the Social Sciences, 07-003. Beverly Hills: Sage Publications.
- HERI. (1985). Cooperative Institutional Research Program (CIRP) [United States]: Freshman Survey, 1985 (Publication no. <http://dx.doi.org/10.3886/ICPSR02419>). from American Council on Education.
- Hearn, J. C. (1984). The Relative Roles of Academic, Ascribed, and Socioeconomic Characteristics in College Destinations. *Sociology of Education*, 57(1), 22-30.
- Hearn, J.C. (1991). Academic and nonacademic influences on the college destinations of 1980 high school graduates. *Sociology of Education*, 64, 158-171.
- Hektner, J. M. (1995). When moving up implies moving out: Rural adolescent conflict in the transition to adulthood. *Journal of Research in Rural Education*, 11(1), 3-14.

- Hill, L. (2008). School Strategies and the “College-Linking” Process: Reconsidering the Effects of High Schools on College Enrollment. *Sociology of Education*, 81(1).
- Hofferth, S., & Iceland, J. (1998). Social Capital in Rural and Urban Communities *Rural Sociology*, 63(4), 574-598.
- Howe, K. R. (1988). Against the quantitative-qualitative incompatibility thesis, or, Dogmas die hard. *Educational Researcher*, 17, 10–16.
- Howley, C. (1996). Compounding Disadvantage: The Effects of School and District Size on Student Achievement in West Virginia. *Journal of Research in Rural Education*, 12(1), 25-32.
- Howley, C., & Howley, A. (2004). School Size and the Influence of Socioeconomic Status on Student Achievement: Confronting the Threat of Size Bias in National Data Sets. *Education Policy Analysis Archives*, 12(52).
- Hsiao, K. P. (1992). First-generation college students. Retrieved 06/15/07, 2007
- Hsung, R., Lin, N., & Breiger, R. (2009). *Contexts of Social Capital; Social Networks in Markets, Communities, and Families*. Routledge: New York.
- Ianni, F. A. (1989). *The Search for Structure: A Report on American Youth Today*. New York: Free Press.
- Israel, G. D., Beaulieu, L. J., & Hartless, G. (2001). The influence of family and community social capital on educational achievement. *Rural Sociology*, 66(1), 43-68.
- Jaccard, J. (2001). *Interaction effects in logistic regression*. Thousand Oaks, CA: Sage Publications.
- Jencks, C. (1977). *Who gets ahead? The determinants of economic success in America*. . New York: Basic Books.
- Johnson, M., Elder, G. H., & Stern, M. (2005). Attachments to family and community and the young adult transition of rural youth. *Journal of Research on Adolescence*, 15(1), 99-125.
- Johnson, R.B., & Onwuegbuzie, A.J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26.
- Kannapel, P., & DeYoung, A. (1999). The rural school problem in 1999: A review and critique of the literature. *Journal of Research in Rural Education*, 15(2), 67-79.
- Karen, D. (2002). Changes in access to higher education in the United States: 1980-1992. *Sociology of Education*, 75(3), pp. 191-210.
- Khattari, N., Riley, K. W., & Kane, M. B. (1997). Students at risk in poor, rural areas: A review of the research. *Journal of Research in Rural Education*, 13(2), 79-100.
- King, J. E. (1996). *The decision to go to college: Attitudes and experiences associated with college attendance among low-income students* (No. HE029240). Washington: D.C.: The College Board.
- Kingston, P.W., & Smart, J.C. (1990). The economic pay-off of prestigious colleges. In P.W. Kingston & Lionel S. Lewis (eds.), *The high status track: Studies of elite schools and stratification*. New York: SUNY Press.
- Lee, V., Smerdon, B., Alfeld-Liro, C., & Brown, S. (2000). Inside large and small high schools: Curriculum and social relations. *Educational Evaluation and Policy Analysis*, 22(2), 147-171.

- Lee, V. E., & Burkam, D. (2003). Dropping out of high school: The Role of School Organization and Structure *American Educational Research Journal*, 40(2), 353-393.
- Lee, V. E., & Smith, J. B. (1997). High School Size: Which Works Best and for Whom? *Educational Evaluation and Policy Analysis*, 19(3), 205-227.
- Leithwood, K., & Jantzi, D. (2009). A Review of Empirical Evidence About School Size Effects: A Policy Perspective. *Review of Educational Research*, 79(1), 464.
- Lewis, S.L., & Kingston, P.W. (1989). The best, the brightest, and the most affluent: Undergraduates at elite institutions. *Academe*, 75, 28-33.
- Lichter, D. T., McLaughlin, D. K., & Cornwell, G. (1995). Migration and the loss of human resources in rural America. In L. J. Beaulieu & D. Mulkey (Eds.), *Investing in people: The human capital needs of rural America* (pp. 235-256). Boulder, CO: Westview.
- Lillard, D. & Gerner, J. (1999). Getting to the ivy league: How family composition affects college choice. *Journal of Higher Education*, 70, 706-730.
- Lincoln, Y.S., & Guba, E.G. (2000). Paradigmatic controversies, contradictions, and emerging confluences. In, N. Denzin and Y. Lincoln (eds.) *Handbook of Qualitative Research*. Thousand Oakes: Sage Publications.
- Lindsay, P. (1982). The effect of high school size on student participation, satisfaction, and attendance. *Educational Evaluation and Policy Analysis*, 4, 57-64.
- London, H. B. (1989). Breaking Away: A Study of First-Generation College Students and Their Families. *American Journal of Education*, 97(2), 144-170.
- Mann, R. (2005). Report: Analysis of High School Achievement and College Readiness For students in Illinois.
- Marsh, H. W., & Kleitman, S. (2003). School Athletic Participation: Mostly gain with little pain. *Journal of Sport and Exercise Psychology*, 25, 205-228.
- Massey, D.S., Charles, C.Z., Lundy, G.F., & Fischer, M.J. (2003). *The source of the river: The social origins of freshmen at America's selective colleges and universities*. Princeton, NJ: Princeton University Press.
- Mauthner, N. S., & Doucet, A. (2003). Reflexive Accounts and Accounts of Reflexivity in Qualitative Data Analysis *Sociology*, 37(3), 413-431.
- Mayer, S. E., & Jencks, C. (1989). Growing up in a poor neighborhood: How much does it matter. *Science*, 243, 1441-1445.
- McClelland, K. (1990). Cumulative disadvantage among the highly ambitious. *Sociology of Education*, 63, 102-121.
- McCracken, J. D., & Barcinas, J. D. (1991). Differences between rural and urban schools, student characteristics, and student aspirations in Ohio. *Journal of Research in Rural Education*, 7(2), 29-40.
- McDermott, M. D. (1997). *Educational experiences and academic achievement of rural students as compared to suburban and urban students in the United States*. Unpublished Dissertation, Iowa State University, Ames, Iowa.
- McDonough, P. M. (1997). *Choosing colleges: How social class and schools structure opportunity*. Albany: State University of New York Press.
- McGrath, D. J., Swisher, R. R., Elder, G. H., & Conger, R. D. (2001). Breaking new ground: Diverse routes to college in rural America. *Rural Sociology*, 66(2), 244-267.

- McGuffey, C. W., & Bown, C. L. (1978). The Relationship of school size and rate of school plant utilization to cost variations of maintenance and operation. *American Educational Research Journal*, 15, 373-378.
- Miller, B. (1993). Rural distress and survival: The school and the importance of "community". *Journal of Research in Rural Education*, 9(2), 84-103.
- Miller, S. (2003). Impact of mixed methods and design on inference quality. In A. Tashakkori, & C. Teddlie (Eds.), *Handbook of Mixed Methods in Social and Behavioral Research*. Thousand Oakes, CA: Sage Publications.
- Morse, J.M. (1991). Approaches to qualitative-quantitative methodological triangulation. *Nursing Research*, 40(2), 120-123.
- Morse, J.M. (2003). Principles of Mixed Methods and Multimethod Research Design. In A. Tashakkori, & C. Teddlie (Eds.), *Handbook of Mixed Methods in Social and Behavioral Research*. Thousand Oakes, CA: Sage Publications.
- Nadel, W., & Sagawa, S. (2002). *America's forgotten children: Child poverty in rural America*. Washington, DC: Save the Children.
- National Center for Education Statistics. (2001). *Common core of data: "Public elementary/secondary school universe survey, 1999-2000"*. Washington, DC: Department of Education. Retrieved on June 8, 2009 from <http://nces.ed.gov/pubs2001/overview/table05.asp>.
- National Center for Education Statistics. (2003). *High school guidance counseling*. Washington, DC: Department of Education. Retrieved on June 8, 2009 from <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2003015>.
- Nelson, E. (1985). *School Consolidation*. Washington, D.C.: Office of Educational Research and Improvement. ERIC Document Reproduction Service No. ED282346.
- Nunez, A. & Cuccaro-Alamin, S. (1998). *First-generation students: Undergraduates whose parents never enrolled in postsecondary education. Statistical Analysis Report. Postsecondary education descriptive analysis reports*. ERIC Document Reproduction Service No. ED 420235.
- Oakes, J. (2003). Critical conditions for equity and diversity in college access: informing policy and monitoring results. *University of California All Campus Consortium on Research for Diversity* Retrieved June 2, 2007
- Oakes, J. (2005). *Keeping Track: How Schools Structure Inequality*. New Haven: Yale University Press.
- Onyx, J., & Bullen, P. (2000). Measuring social capital in five communities. *Journal of Applied Behavioral Science*, 36, 23-42.
- Owings, J. (1998). *Who goes to America's highly ranked "national" universities?* Washington, DC: U.S. Department of Education.
- Parker, T. (2009). *State Fact Sheets: Michigan*. Retrieved November 01, 2009, from <http://www.ers.usda.gov/statefacts/MI.HTM>.
- Patton, M. Q. (2002). *Qualitative Research and Evaluation Methods* (3 ed.). Thousand Oaks, CA: Sage Publications.
- Patulny, R. (2009). The sociability of nations: international comparisons in bonding, bridging and linking social capital. In G. T. Svendsen & G. L. H. Svendsen (eds.), *Handbook of Social Capital: The Troika of Sociology, Political Science, and Economics*. Edward Elgar: Northampton, MA.

- Perna, L. (2000). Differences in the decision to attend college among African Americans, Hispanics, and Whites. *The Journal of Higher Education*, 71(2), 117-141.
- Perna, L., & Titus, M. (2005). The Relationship Between Parental Involvement as Social Capital and College Enrollment: An Examination of Racial/Ethnic Group Differences. *The Journal of Higher Education*, 76(5), 485-518.
- Persell, C.H., Catsambis, S., & Cookson, P.W. (1992). Differential asset conversion: Class and gendered pathways to selective colleges. *Sociology of Education*, 65(3), pp. 208-225.
- Phelan, P., Davidson, A. L., & Yu, H. C. (1993). Student's Multiple Worlds: Navigating the Borders Family, Peer and School Cultures. In P. Phelan & A. L. Davidson (Eds.), *Renegotiating Cultural Diversity in American Schools* (pp. 51-87). New York: Teachers College Press.
- Plank, S., & Jordan, W. (2001). Effects of information, guidance, and actions on postsecondary destinations: A study of talent loss. *American Educational Research Journal*, 38(4), 947-979.
- Portes, A., & Landolt, P. (1996). "The downside of social capital." *The American Prospect* 26
- Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology*, 24.
- Putnam, R. (1993). The prosperous community: Social capital and public life. *The American Prospect* 13: 35-42.
- Putnam, R. (1996). The strange disappearance of civic America. *The American Prospect*. 24: 34-48.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd edition ed.). Newbury Park, CA: Sage Publications.
- Reid, J. N. (1989). The rural economy and rural youth: Challenges for the future. *Journal of Research in Rural Education*, 6(2), 17-23.
- Reynolds, D.R. (1999). *There goes the neighborhood: Rural school consolidation at the grass roots in early twentieth-century Iowa*. Iowa City: University of Iowa Press.
- Richling, B. (1985). You'd never starve here: return migration to rural Newfoundland. *Canadian Review of Sociology and Anthropology*. 22: 236-249.
- Riehl, R. (1994). The Academic Preparation, Aspirations, and First-Year Performance of First-Generation Students. *College and University*, 70(1), 14-19.
- Ritchey, P. N. (1976). Explanations of migration. *Annual Review of Sociology*, 2, 363-404.
- Rodriguez, R. (1981). *Hunger of memory: The education of Richard Rodriguez*. New York: The Dial Press.
- Rojewski, J. W. (1999). Career-related predictors of work-bound and college-bound status of adolescents in rural and nonrural areas. *Journal of Research in Rural Education*, 15(3), 141-156.
- Rossi, P., Lipsey, M., & Freeman, H. (2004). *Evaluation: A Systematic Approach* (7th ed. ed.). Thousand Oaks: Sage Publications.
- Rudkin, L., Elder, G.H., and Conger, R. (1994). Influences on the migration intentions of rural adolescents. In Elaine G. Porter, John Lewko, and Geoffrey Tesson (eds.), *Sociological studies of children*, (Volume 6: Macro-micro connections in the pathways to adulthood, pp. 87-106). Greenwich, CT: JAI Press.

- Sanders, M. G., & Jordan, W. J. (2000). Student-teacher relations and academic achievement in high school. In M. G. Sanders (Ed.), *Schooling students placed at risk: Research, policy, and practice in the education of poor and minority adolescents* (pp. 65–82).
- Schafft, K. A., Alter, T. R., & Bridger, J. C. (2006). Bringing the community along: A case study of a school district's information technology rural development initiative. *Journal of Research in Rural Education, 21*(8). Retrieved April 04, 2010 from <http://jrre.psu.edu/articles/21-8.pdf>.
- Schonert, K., Elliott, J., & Bills, D. (1991). Rural Iowa youth: A descriptive summary of postsecondary persistence five years after high school. *Research in Higher Education, 32*(3), 269-288.
- Schuller, T., Baron, S., & Field, J. (2000). Social capital: a review and critique. In S. Baron, T. Schuller, & J. Field (eds.) *Social Capital: Critical Perspectives*. New York: Oxford University Press.
- Schwandt, T. A. (2000). Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics, and social constructionism. In N. K. Denzin & Y. S. Lincoln, *Handbook of qualitative research* (pp. 189–213). Thousand Oaks, CA: Sage.
- Serigianti, P. A., Wilson, J. L., Peterson, A. C., & Vicary, J. R. (1990). Self-image and educational plans of adolescents from two contrasting communities. *Journal of early Adolescence, 10*, 37-55.
- Sewell, W. H., Haller, A. O., & Ohlendorf, G. W. (1970). The Educational and Early Occupational Status Attainment Process: Replication and Revision. *American Sociological Review, 35*, 1014-1027.
- Shavelson, R. (1996). *Statistical Reasoning for the Behavioral Sciences*. (3rd ed.) Boston: Allyn & Bacon.
- Silverman, D. (1993). *Interpreting Qualitative Data: Methods for Analyzing Talk, Text and Interaction*. London: Thousand Oaks.
- Singh, K., & Dika, S. (2003). The educational effects of rural adolescents' social networks. *Journal of Research in Rural Education, 18*(2), 114-128.
- Smith, M., Beaulieu, L., & Seraphine, A. (1995). Social capital, place of residence, and college attendance. *Rural Sociology, 60*(3), 363-380.
- Snyder, T. (1987). *Digest of education statistics*. ERIC Document Reproduction Service No. ED 282359.
- Song, M., & Parker, D. (1995). Commonality, difference, and the dynamic of discourse in in-depth interviewing. *Sociology of Education, 29*, 241-256.
- Stanley, L., Comello, M. L., Edwards, R., & Marquart, B. (2008). School Adjustment in Rural and Urban Communities: Do Students from "Timbuktu" Differ from Their "City Slicker" Peers? *Journal of Youth and Adolescence, 37*, 225-238.
- Stern, J. (1994). *The condition of education of rural schools*. Washington, DC: Office of Educational Research and Improvement, US Department of Education.
- Strauss, A. (1987). *Qualitative Analysis for Social Scientists*. New York: Cambridge University Press.
- Strauss, A., & Corbin, J. (1998). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* (2 ed.). Thousand Oaks, CA: Sage Publications.

- Streifel, J., Foldsey, G., & Holman, D. (1991). The financial effects of consolidation. *Journal of Research in Rural Education*, 7(2), 13-20.
- Svendsen, G. & Svendsen, G. (2009). *Handbook of Social Capital: The Troika of Sociology, Political Science, and Economics*. Edward Elgar: Northampton, MA.
- Tashakkori, A., & Teddlie, C. (Eds.). (2003). *Handbook of Mixed Methods in Social and Behavioral Research*. Thousand Oakes, CA: Sage Publications.
- Teachman, J. (1987). Family background, educational resources, and educational attainment. *American Sociological Review*, 52(4), 548-557.
- Teachman, J., Paasch, K., & Carver, K. (1997). Social capital and the generation of human capital. *Social Forces*, 75(4), 1343-1359.
- Terenzini, P., Springer, L., Yaeger, P., Pascarella, E., & Nora, A. (1996). First-Generation College Students: Characteristics, Experiences, and Cognitive Development. *Research in Higher Education*, 37(1), 1-22.
- Thayer, P. B. (2000). Retention of students from first-generation and low income backgrounds. *Opportunity Outlook*(May), 2-8.
- Thomas, S.L. (2003). Longer-term economic effects of college selectivity and control. *Research in Higher Education*, 44, 263-299.
- Tinto, V. (1993). *Leaving College: Rethinking the Causes and Cures of Student Attrition* (2nd ed.). Chicago: University of Chicago Press.
- Toutkoushian, R., & Curtis, T. (2005). Effects of Socioeconomic Factors on Public High School Outcomes and Rankings. *The Journal of Educational Research*, 98(5), 259-271.
- Tym, C., McMillion, R., Barone, S., & Webster, J. (2004). First-generation college students: A Literature review.
- U.S. Bureau of Labor Statistics (2009). *Local Area Unemployment Statistics*. Retrieved November 01, 2009 from: <http://www.bls.gov/lau/>.
- U.S. Census Bureau (2009). *1947, and 1952 to 2002 March Current Population Survey, 2003 to 2008 Annual Social and Economic Supplement to the Current Population Survey*. Retrieved March 30, 2010 from <http://www.census.gov/population/www/socdemo/educ-attn.html>.
- USDA (2010). State Fact Sheets: United States. Washington, DC: Economic Research Service. Retrieved February 6, 2010 from <http://www.ers.usda.gov/StateFacts/US.HTM>.
- University of Michigan (2008). About Michigan, Freshman Class Profile. Retrieved June 08, 2008 from <http://www.admissions.umich.edu/about/>.
- Useem, M., & Karabel, J. (1986). Pathways to top corporate management. *American Sociological Review*, 5, 184-200.
- Vargas, J. H. (2004). *College Knowledge: Addressing Information Barriers to College*. Boston, MA: The Education Resources Institute.
- Wall, E., Ferrazzi, G., & Schryer, F. (1998). Getting the goods on social capital. *Rural Sociology* 63(2), pp. 300-322.
- Wallace, L., & Diekroger, D. (2000). *The ABCs in Appalachia: A Descriptive View of Perceptions of Higher Education in Appalachian culture*. Paper presented at the Annual Conference of the Women of Appalachia: Their Heritage and Accomplishments.

- Weiss, R. S. (1994). *Learning from strangers: The art and method of qualitative interview studies*. New York: The Free Press.
- Wenk, D., & Hardesty, C. (1991). *Family and household effects on the educational attainment of young adults*. Washington, DC.
- Whitener, L. A. (2005). Policy options for a changing rural America. *Amber Waves*, 3(2).
- Wilson, K. L., & Portes, A. (1975). The Educational Attainment Process: Results from a National Sample. *The American Journal of Sociology*, 81(2), 343-363.
- Woelfel, J., & Haller, A. O. (1971). Significant others, the self-reflexive act and the attitude formation process. *American Sociological Review*, 36(1), 74-87.
- Yan, W. (2002). *Postsecondary enrollment and persistence of students from rural Pennsylvania*. Harrisburg, PA: Center for Rural Pennsylvania.
- Yang, S. W. (1981). *Rural youths' decisions to attend college: Aspirations and realizations*. Paper presented at the Annual Meeting of the Rural Sociological Society.
- Zekeri, A. A., Wilkinson, K. P., & Humphrey, C. R. (1994). Past Activeness, Solidarity, and Local Development Efforts. *Rural Sociology*, 59(2), 216-235.
- Zhou, M. & Bankston, C.L. (1996). Social capital and the adaptation of the second generation: The case of Vietnamese youth in New Orleans. In A. Portes (ed.). *The New Second Generation*. New York: Russell Sage Foundation.