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# In quest of a dropout theory: Examining the utility of an ecological approach through survey research

Tiffany G. Tyler

*University of Nevada, Las Vegas*

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IN QUEST OF A DROPOUT THEORY: EXAMINING THE UTILITY OF AN  
ECOLOGICAL APPROACH THROUGH SURVEY RESEARCH

By

Tiffany Gewan Tyler

Bachelor of Arts  
University of Southern California  
2000

Master of Science  
California State University, Northridge  
2004

A dissertation submitted in partial fulfillment  
of the requirements for the

**Doctor of Philosophy in Educational Psychology**  
**Department of Educational Psychology**  
**College of Education**

**Graduate College**  
**University of Nevada, Las Vegas**  
**August 2011**

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**Tiffany Gewan Tyler**

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**Doctor of Philosophy in Educational Psychology**

William Cross, Co-Chairperson

W Paul Jones, Co-Chairperson

Dale-Elizabeth Pehrsson, Co-Chairperson

Sterling Saddler, Graduate Faculty Representative

Ronald Smith, Ph. D., Vice President for Research and Graduate Studies  
and Dean of the Graduate College

**August 2011**

## ABSTRACT

### **In Quest of a Dropout Theory: Examining the Utility of an Ecological Approach through Survey Research**

by

Tiffany Gewan Tyler

Dr. William Cross, Dr. Dale-Elizabeth Pehrsson, and Dr. W. Paul Jones, Examination  
Committee Co-Chairs  
Professors of Counselor Education and Educational Psychology  
University of Nevada, Las Vegas

This study examined the utility of Bronfenbrenner's Ecological Theory as a metatheory of dropout. Using the NELS: 1988 dataset, the present study examined the relationship between dropout attributions and Bronfenbrenner's construct, the microsystem. Attention was given to accounting for students' attributions regarding their identity (e.g., demographic and profile characteristics) with environmental and regional contexts as possible moderators. In particular, the present study examined the responses given as reasons for dropout in view of how those responses could be categorized with Bronfenbrenner's theoretical structure and the extent to which the resulting categorization could predict dropout, considering related demographic variable.

This study entailed two distinct, but related phases. The initial phase was an examination exploring the extent to which NELS: 1988 responses about reasons for dropout could be appropriately classified in the levels of microsystem, exosystem, mesosystem, macrosystem, and chronosystem in Bronfenbrenner's theory. During the second phase, the study examined whether applications of Bronfenbrenner's theory could predict dropout, when gender, race/ethnicity, urbanicity, and region were controlled. Using logistic regression analysis as a tool, the second phase of the study used outcomes

of the initial phase to investigate the utility of a factor apparently reflecting Bronfenbrenner's microsystem as a predictor of dropout. The dependent variable in this phase was dropout status. The independent variables were gender, race, geographic region, urbanicity, and Bronfenbrenner's theoretical level.

The results indicated applications of Bronfenbrenner's microsystem could predict dropout, when gender, region, urbanicity, and race/ethnicity were controlled. Further, the findings suggested Asian students were less likely than White students to dropout, while Latino students were more likely than African American students to dropout. Moreover, identifying as an American Indian was not a statistically significant predictor of dropout, while membership in all other racial/ethnic study groups was a statistically significant predictor of dropout. The findings also suggested attending a school in the northeast region of United States increased the likelihood of dropout.

*Keywords:* National Education Longitudinal Study of 1988.

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## PREFACE

In 2009, I attended an informal celebration of what would have been my high school graduation. As I sifted through the day's yearbooks, I was astonished by the number of activities and events in which I had participated. According to the yearbooks, I was a member of the journalism club and the women's basketball team, and a well known student. According to my transcripts, I was an honor student, above the 50<sup>th</sup> percentile on most assessments, and an attendee of a magnet school.

Each of these findings is startling, given the culmination of my high school career—dropout!

As a doctoral student in an educational psychology department, an educational consultant, and a licensed school counselor, I struggle with the paradox of my experience. How could I be seemingly connected to school, yet so disengaged?

As I scanned the room, I methodically evaluated each of my peers. Attendee by attendee, risk factor by risk factor, I asked myself, "Was I predisposed to dropout?" Did these students constitute a high risk peer group? Was I ever retained? Were they or I delinquents?

After painful reflection, I could only conclude that I knew the following with any degree of certainty:

1. I am the great-granddaughter of a sharecropper from rural Northern Louisiana.
2. I am the granddaughter of a southern nanny.
3. I was reared in a single female headed household.

4. My middle school was recently taken over by the state for failure to meet adequate yearly progress for several consecutive years.
5. In 2005, my area high school lost its accreditation.
6. As the Los Angeles riots erupted, I was living 14 blocks from the epicenter, in the last trimester of my first pregnancy.
7. I earned my diploma in four months from a local adult education school.
8. I transferred to the University of Southern California with a 3.98 grade point average from a local community college.
9. I graduated from the University of Southern California cum laude, with two baccalaureate degrees, in two years.
10. I graduated with distinction from a graduate program, earning a master degree in counseling with a specialization in school counseling.
11. I am a doctoral student who has spent the last five years of her doctoral program working three jobs, carrying a full course load, and raising two adolescent sons alone.
12. In May of 2000, my mother and I graduated from college for the first time.

Reflecting on these certainties, “my dozen truths,” I wondered what the totality of my educational experiences suggested about the nature of dropout. I also wondered how others’ experiences had informed their decision to leave school prematurely. I was reminded of my work as a student outreach specialist.

In fall 2001, I began my tenure as a student outreach specialist in a large urban high school in the western United States. The school district was comprised of a coastal community marked by the diversity and urban challenges of any metropolitan

community. As a student outreach specialist, I was tasked with the charge of engaging youth who met two of four criteria: poor attendance, poor academic performance, high incidence of disciplinary referrals, and a self-destructive behavior.

Much of my work was conducted under the auspices of a dropout prevention program, whose aim was the identification and support of students in danger of dropout. Each year, a small group of students were identified at the close of their middle school career and referred to the program. Some students were referred because they had only marginally demonstrated the competencies associated with readiness for high school, while others were referred because they were frequent visitors to the dean's office.

I quickly found that a referral for self-destructive behavior was a catch-all for a range of social behaviors and societal ills. I also discovered that being referred to the program for a high incidence of disciplinary referrals often reflected a complex interplay between factors like school culture, community norms, institutional practices, the student's level of coping, and the parent's ability to navigate the school system. However, I was most impacted by the range of experiences students presented. Their experiences left me feeling there was no contingency plan for ensuring graduation.

I contemplated the lives of the students who filled my special tutorial class for students in danger of school failure. Several of the school's most wealthy students and the school's most impoverished students sat side by side in this class, each hopeless, distressed, and in danger of dropout. What was I to make of this occurrence? Could I rule out socioeconomic status as a risk factor for dropout?

I pondered the plausibility of such an assertion. There is much research about the interplay of socioeconomic status and dropout (Hammond, Linton, Smink, & Drew,

2007). Moreover, the research suggests there is a negative relationship between dropout and socioeconomic status (Reimer & Smink, 2005). How then could I account for the breadth of experiences encompassed by my caseload? What support was there for understanding and addressing dropout?

I asked, “What do I really know about dropout?”

There was my experience as a dropout, my experience as a specialist assisting high school youth at risk for dropout, and a more recent experience.

In 2006, I was recruited by a Nevada state senator to oversee youth programs at a Nevada-based nonprofit organization. This nonprofit organization was an employment and training agency, funded by a workforce investment board to ensure indigent youth, ages 14-21, experiencing one or more barriers like dropout, homelessness, adjudication, or teen pregnancy, successfully complete high school and participate in career development activities.

Under the auspices of my work as Youth Program Manager, I launched a middle school credit recovery program. The program responded to an ever-increasing percentage of youth prematurely leaving school in Clark County, Nevada, as a result of the interplay between district policy and underperformance. The program provided intensive intervention services to overage middle school students experiencing several consecutive years of retention as result of the school district’s policy on middle school course completion.

During my tenure as program manager, I discovered the experiences of the credit recovery program participants were not unlike the experiences of the students I encountered during my tenure as a student outreach specialist. Moreover, I found the

reasons why students dropped out varied significantly. There was no single factor, challenge, or experience that could wholly account for why a student had dropped out.

This finding was troubling to me. As a school counselor and educational consultant, I was hard-pressed to identify strategies for mitigating dropout. Moreover, as a proponent of evidence-based practice, I desperately wanted to concretize the practice of dropout prevention. Resultantly, I began examining theoretical orientations and dropout prevention programs.

In fall 2007, with support from a colleague, I developed and piloted a dropout prevention model, “interagency case management.” This model was designed to address the myriad reasons why students dropout, by providing intensive team-based case management and wraparound services to students during the school day. Central to this model was a conceptualization of dropout rooted in the experiences of dropouts.

Reconciling my experience and the experiences of students and program participants with the dropout literature, I believe Bronfenbrenner’s Ecological Theory may offer a practical framework for conceptualizing dropout and dropout prevention (Hess, 2000). Many studies have been conducted in hopes of illuminating the phenomenon of dropout, each implicating a factor (Suh & Suh, 2007; Reimer & Smink, 2005; Hammond, Linton, Smink, & Drew, 2007; Philadelphia Education Fund, 2005; Smyth & Hattam, 2002). A decade ago, the field of developmental psychology was in a similar position.

According to Witherington (2007), “ a decade ago, developmental psychology could easily be characterized as a field in search of ontological unity, marked by increasingly particularistic, domain- and context-specific ‘minitheories,’ which offered a

narrowed focus on specific behavior in specific settings but at the price of an integrated developmental account” (p. 127). In response to the state of developmental psychology, Witherington (2007) called for a dynamic systems approach as a metatheory of developmental psychology. In the same vein, I call for a metatheory of dropout, a dynamic systems approach with the theoretical prowess to unify the seemingly disparate causes of dropout and the experiences of dropouts.

My experiences as a dropout, student outreach specialist, and program manager afford me several lenses for understanding and conceptualizing dropout. A metatheory of dropout will afford the world a lens for understanding and conceptualizing dropout! However, before one can proffer any theoretical model as a viable metatheory, an examination of its utility must be undertaken. In fall 2008, my first opportunity to examine the utility of Bronfenbrenner’s model presented itself.

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## CHAPTER 1

### INTRODUCTION

In fall 2008, the Center for Business and Economic Research (CBER), with support from a local workforce development agency, conducted focus groups to determine the causes of dropout in Clark County, Nevada. These focus groups were comprised of former Clark County students of African American and Latino descent, between the ages of 18-21. Among a series of questions, respondents were asked:

1. What do you think is the most important reason students do not complete high school in Clark County? What's the next most important reason?
2. Why did you not complete high school?
3. Did you ever receive services for special education?
4. Did anyone ever recommend that you be retained a grade?
5. What would you have needed to stay in school?
6. If you could make changes that would help kids who are having a hard time in school, what would they be?
7. What was school like for your parents? Other family members?

In total, six focus groups were conducted, with 63 participants responding.

Myriad variables, interactions, and contextual factors were identified. Respondents cited student-teacher interactions, class and school size, parental work hours, pregnancy, grading practices, immigration policy, social milieu, peer pressure, lack of transportation, and proficiency exams as causes of dropout. Moreover, several respondents noted there were “multiple reasons,” or a “mixture of things,” that resulted in their dropping out of school.

More importantly, their responses could be organized into several broad categories. The CBER (2008) identified four broad categories: personal, distractions, schools, and unstable family. However, a review of respondents' attributions suggests a broader classification is needed, particularly when attributions like social milieu, immigration policy, and transportation can be construed as "distractions" are considered.

In light of the CBER study (2008) and the disparate factors implicated in dropout (Hammond, Linton, Smink, & Drew, 2007), the dropout literature could greatly benefit from a metatheory of dropout. Overton (2007) defines metatheory as "a set of coherent interlocking principles that both describe and prescribe what acceptable conceptual and observational exploration is" (p. 154). Further, Overton (2007) argues:

In any field, logical consistency and conceptual coherence are fundamental features of the body of *systematized* empirical knowledge that is scientific knowledge. Metatheories are the source this consistency and coherence because they establish the field's the most basic categories and constructs. Consequently, a precise clarification of the metatheories operating within any field is critical. (p. 155)

Similarly, the present study argues for a dropout metatheory that is needed to bring coherence to the dropout literature. This metatheory should describe dropout phenomena, establish basic dropout constructs and categories, and prescribe what constitutes effective dropout prevention.

Abrams and Hoggs (2004) characterized metatheory as a theory which "places specific research questions within a broader framework and encourages integration of theorizing for a range of disparate phenomena" (p. 98). Further, Abrams and Hoggs

(2004) maintained a metatheory establishes “parameters for predictions by specific theories and contexts (p. 98). Consistent with Abrams and Hoggs (2004) conceptualization of metatheory, the present study examined the utility of Bronfenbrenner’s Ecological Theory as a metatheory in hopes of accounting for disparate dropout phenomena and integrating existing dropout literature. While not exhaustive, the present study provides an essential step in the identification of a metatheory of dropout.

### **Context of Study**

The present study occurred during a period Bridgeland, DiLulio, & Morison (2006) characterized as a dropout epidemic in America. Over the course of the study, nearly 1.2 million students dropped out of school each year (Alliance for Excellent Education, 2009). Further, the Alliance for Excellent Education (2009) projected 7,000 students dropped out of school every day during the course of the present study. Responding to this dropout epidemic, the present study explored the possibility that Bronfenbrenner’s Ecological Theory could serve as a metatheory to synthesize the literature on dropout.

Prior to the present study, the CBER study (2008) was conducted, identifying several broad categories of dropout attributions. In exploration of the utility of Bronfenbrenner’s Ecological Theory as metatheory of dropout, the present study sought to identify a comparable group of respondents to examine their attributions and the utility of Bronfenbrenner’s theory. A longitudinal study launched by the National Center of Education Statistics, the National Education Longitudinal Study of 1988 (NELS: 88), offered an appropriate group of respondents.

In 1988, the National Center of Education Statistics launched NELS: 88, a national longitudinal study that surveyed students on a range of topics, including student perceptions of the reasons why students dropout. In total, approximately 25,000 students were surveyed over a twelve-year period, including over 2,000 respondents identifying as dropouts (Curtin, Ingels, Wu, Huer, & Owings, 2002). Data collected during the study included data on late and early predictors of dropout (Curtin et al., 2002). Moreover, the study sample represented each of the major national geographic regions, racial/ethnic groups, and gender types. However, while the present study hoped to examine the utility of Bronfenbrenner's Ecological Theory in its entirety, the dropout questionnaire employed in NELS: 88 only supported an examination of the utility of one of Bronfenbrenner's constructs, the microsystem. Consequently, the present study examined whether applications of Bronfenbrenner's microsystem could account for dropout attributions.

### **Purpose of the Study**

While previous studies examined the nature of dropout, few studies posited theoretical orientations simultaneously accounting for factors like gender, race/ethnicity, urbanicity (e.g., urban, suburban, rural), and geographic region. In recognition of the limited theories addressing dropout attributions across the aforementioned characteristics, the purpose of this study was to examine Bronfenbrenner's Ecological Theory as a metatheory of dropout accounting for students' attributions regarding their identity (e.g., demographic and profile characteristics) with environmental and regional contexts as possible moderators.

Using the National Education Longitudinal Study of 1988 (NELS: 88), this study examined the relationship between dropouts' attributions for dropout and Bronfenbrenner's construct, the microsystem. The microsystem is one of five systems implicated in human development by Urie Bronfenbrenner (1994). Historically, the microsystem has included the influence of the family, peer group, school, and workplace on human development (Bronfenbrenner, 1994). Most recently, the microsystem has also included the influence of the individual (Bronfenbrenner & Morris, 2007). Beyond examining the utility of microsystem, particular attention was given to accounting for dropout attributions within the context of gender, race/ethnicity, school environment, and geographical region.

### **Research Question**

Beginning in 1988, the National Education Longitudinal Study now has five waves or data points. Moreover, the study included a significant dropout respondent sample. Using data collected during NELS: 1988, the present study sought to determine whether applications of Bronfenbrenner's microsystem could account for dropout attributions across multiple contexts. In particular, this study examined the following research questions:

1. Controlling for gender, can applications of Bronfenbrenner's microsystem predict dropout?
2. Controlling for race/ethnicity, can applications of Bronfenbrenner's microsystem predict dropout?
3. Controlling for urbanicity, can applications of Bronfenbrenner's microsystem predict dropout?

4. Controlling for geographic region, can applications of Bronfenbrenner's microsystem predict dropout?

### **Significance of Study**

There is a paucity of studies examining the utility of a particular theoretical model as a metatheory of dropout. Patterson, Hale, and Stessman (2007) undertook case studies of urban high schools, in hopes of understanding the contextual factors that inform the dropout phenomena, while Murray and Naranjo (2008) conducted case studies of youth with special needs to examine factors and processes associated with school persistence. Altenbaugh, Engel, and Martin (1995) examined the experiences of early school leavers through in-depth interviews. In the same vein, Thornburgh (2006) interviewed youth in the rural community to illuminate the experiences of non-completers in America.

While many studies identify factors associated with dropout (Suh & Suh, 2007; Reimer & Smink, 2005; Hammond, Linton, Smink, & Drew, 2007; Philadelphia Education Fund, 2005; Smyth & Hattam, 2002), a thorough examination of the research suggests there are few studies examining Bronfenbrenner's Ecological Theory as a metatheory of dropout. This study attempted to address this dearth by examining the relationship between dropouts' attributions for dropout and Bronfenbrenner's microsystem.

Moreover, the present study holds significant implications for the discourse on dropout and dropout prevention because of its generalizability. This study employed a weighted sample, representing several segments of the dropout population. These segments included the experiences of males and females, five racial groups, every region of the nation, and students in urban, suburban, and rural schools. As a result, much can

be gleaned about the nature of a model sufficiently accounting for the experiences of dropouts across gender, race, region, and school environment.

Following is a list terms associated with the present study.

### **Definition of Terms**

Dropout—a student who was enrolled at any time during the previous year who is not enrolled at the beginning of the current school year and who has not completed school (Stillwell & Hoffman, 2008).

Averaged Freshman Graduation Rate (AFGR)—an estimate of the number of regular diploma recipients in a given year divided by the average membership in grades 8, 9, and 10, reported 5, 4, and 3 years earlier, respectively (Stillwell & Hoffman, 2008).

Cohort rate—measures what happens to a group of students over a period of time (Reimer & Smink, 2005)

Dropout—a student who was enrolled at any time during the previous year who is not enrolled at the beginning of the current school year and who has not completed school (Stillwell & Hoffman, 2008).

Event dropout rate—the proportion of students who dropout in a single year; the number of students who drop out of a given grade divided by the number of students enrolled in that grade at the beginning of that school year (Stillwell et al., 2008).

Graduates—students who are reported as diploma recipients (Stillwell & Hoffman, 2008).

Graduation rate—the number of students in a cohort who should have graduated (Reimer & Smink, 2005).

Microsystem—one of five systems implicated in human development by Urie Bronfenbrenner (Bronfenbrenner, 1994).

Status rate—the percentage of young adults, ages 16-24, who are not enrolled in school and who have not completed a high school diploma or obtained a GED (Reimer & Smink, 2005).

Urbanicity—the degree to which a geographical unit is urban (The Urban Community, 2004).

## CHAPTER 2

### LITERATURE REVIEW

The Alliance for Excellent Education (2007) speculates that more than 12 million students will leave school prematurely during the next decade, resulting in a \$3 trillion loss in revenue. According to the Association for Career and Technical Education (2007), only two-thirds of ninth graders can be reasonably assured of an on-time graduation. Nationally, during the 2005-2006 school year, over 579,000 students left school prematurely (Stillwell & Hoffman, 2008). Further, the American Youth Policy Forum (2006) estimates dropouts cost the public \$24 billion in crime and welfare benefits, annually. Moreover, without a significant change in trajectory, twelve million students will leave school prematurely by 2017 (Association for Career and Technical Education, 2007), with a disproportionate percentage of students from minority backgrounds represented among these ranks. These findings underscore the importance of examining dropout.

In light of these disconcerting findings, attention should be given to understanding the nature of dropout. Understanding this phenomenon should lead to the mitigation of dropout. A critical step in the process of mitigating dropout is the development of an organizing framework or metatheory, whereby interventionists such as school counselors can identify and effectively target the causes of dropout. To date, many factors have been implicated in the phenomenon of dropout; however the development of a metatheory or broad organizing framework is essential.

## **Literature Review Process**

In preparation for the present study, an extensive search of recent dropout prevention literature was conducted. The search included a review of dropout prevention literature employing qualitative methodologies, an ecological perspective, and the narrations of participants of color. The search resulted in the identification of few studies examining the utility of an ecological approach (Jozefowics-Simbeni, 2008; Hess, 2000; Jung, 1999; Lee & Ip, 2003). While previous studies have examined the nature of dropout (Fine, 1991; Altenbaugh, Engel, & Martin, 1995; Murray & Naranjo, 2008; Patterson, Hale, & Stessman, 2007; Thornburgh, 2006; Beekhoven & Dekkers, 2005; Gallagher, 2002; Brown & Rodriguez, 2009), few studies have examined the role of systems in the dropout phenomenon (Wing-Lin & Ip, 2003). Moreover, the utility Bronfenbrenner's ecological model as a metatheory of dropout is largely unexamined.

## **Causes of Dropout**

### **Risk Factors and Dropout Indicators**

There are innumerable sociodemographic factors implicated in the phenomenon of dropout (Hammond, Linton, Smink, & Drew, 2007). Through an extensive literature review and meta-analysis, Hammond, Linton, Smink, and Drew (2007) identified over 20 risk factors, including:

- Having a disability or emotional disturbance
- High number of work hours
- Parenthood
- High-risk peer group
- High –risk social behavior

- Being highly socially active outside of school
- Low achievement
- Retention or overage for grade
- Poor attendance
- Low educational expectations
- Lack of effort
- Low commitment to school
- No extracurricular participation
- Misbehavior
- Early aggression
- Low socioeconomic status
- High family mobility
- Low education level of parents
- Large number of siblings
- Not living with both natural parents
- Family disruption
- A sibling who has dropped out
- Low contact with school
- Lack of conversations about school

Further, Hammond et al. (2007) noted the abovementioned risk factors could be organized into four domains: individual, family, school, and community. They (2007) also found that considering multiple dropout factors increased dropout prediction accuracy. Moreover, these researchers identified that students often cited factors across

domains and complex interactions between factors as reasons for dropping out. These findings further bolster the need for coherence in the literature and underscore the benefits of positing a metatheory of dropout. Hammond et al. (2007) identified a plethora of factors associated with dropout. They noted the implications of chronic or mental illness, early marriage, low occupational aspirations, need for autonomy, sexual involvement, pressures to seek employment, change in educational services or placement, school dissatisfaction, having siblings that dropped out, and substance abuse. However, they did not proffer a meta-theory of dropout (Hammond et al., 2007). In keeping with this research, the present study includes multiple factors and three of the above mentioned domains: the individual, family, and school. Moreover, the present study extends Hammond et al.'s work by examining the utility of a metatheory that includes several of the factors identified by Hammond and colleagues (2007).

In a technical report detailing facts and findings associated with dropout, Reimer and Smink (2005) also identified several dropout factors. Reimer and Smink (2005) distinguished the factors as alterable variables or status variables. In the case of status variables, they noted such factors as age, gender, socioeconomic background, ethnicity, native language, region, mobility, ability, disability, parental employment, school size and type, and family structure. Reimer and Smink also identified several alterable variables, including grades, behavior, absenteeism, school policies, school climate, parenting, sense of belonging, attitudes toward school, retention, educational support in home, and stressful life events (Reimer & Smink, 2005). The present study incorporates several of the status and alterable variables noted by Reimer and Smink (2005), namely gender, ethnicity, sense of belonging, and attitudes toward school.

Classifying the variables or factors associated with dropout as alterable or status can be useful as a preliminary classification, because it provides a broad framework for conceptualizing dropout prevention efforts. However, this broad classification system collapses a number of distinct variables into two broad categories, thus limiting the type and quality of dropout intervention. Moreover, this classification does not address a number of interactions and contextual factors noted in the literature. Furthermore, this classification does little to aid interventionists such as school counselors with the identification of appropriate targets for intervention.

A more effective classification system might identify the agents at play such as the individual, the family, the school, policy, the relationship between the school and the family. This could assist interventionists in developing comprehensive dropout prevention strategies that reflect the causes of dropout. The present study attempts to address the limitations of Reimer and Smink's classification by proffering the multisystemic approach reflected in Bronfenbrenner's Ecological Theory.

Reimer and Smink's (2005) research is one aspect of a large body of research examining dropout. A host of studies have identified other risk factors, contextual variables, and interactions associated with dropout. Neild, Balfanz, and Herzog (2007) found that exhibiting poor attendance, poor behavior, or failing grades in Math or English in sixth grade reduced the probability of on-time graduation to ten percent.

Characterizing the period preceding the present study as a high school graduation crisis, Neild, Balfanz, and Herzog (2007) conducted a retrospective cohort study following 14,000 Philadelphia students over a six year period. Beginning with the cohort's six grade year, the researchers examined test scores, report cards, behavior

marks, attendance records, special education status, English language learner status, and demographic categories, for “signals” that indicated a student had a 75% or greater probability of dropping out of high school (Neild, Balfanz, Herzog (2007). Moreover, Neild, Balfanz, and Herzog (2007) identified three challenges for educators and policymakers addressing the high school graduation crisis (p. 28):

1. Figuring out which signals to look for and when to look for them
2. Developing a set of structures and practices within schools that enable educators to review data and pinpoint those students who are sending signals
3. Determining the help that students need, on the basis of the signals they send and their responses to previous interventions

The present study aids educators and policymakers in addressing the high school graduation crisis by examining a prospective metatheory that may serve as a structure for conceptualizing signals and intervention.

Utilizing the National Longitudinal Survey of Youth database, Suh and Suh (2007) examined 180 prospective indicators of dropout. Employing multiple regression analysis, 16 statistically significant indicators were identified: low socioeconomic status, suspensions, student expectations, an enrichment risk index, absenteeism, family composition, a physical environment index, sexual experience, dual headed households, peers, urbanicity, region, perception toward teachers, number of school altercations, and bullying (Suh & Suh, 2007). The present study extended Suh and Suh’s (2007) work by examining the utility of a metatheory that might account for the aforementioned indicators. In particular, the present study included urbanicity, region, and suspension.

Brown and Rodriguez (2009) illuminated the role of educational neglect, social alienation, and intellectual alienation in dropout. In a qualitative study employing semi-structured in-depth interviews, Brown and Rodriguez (2009) examined the schooling experiences of two Latino male high school students with low income. Through their examination (Brown & Rodriguez, 2009), multiple factors were identified, including low academic expectations, menial curriculum, lack of caring, gendered and racialized stereotypes, and overburdened staff. Moreover, Brown and Rodriguez (2009) called for understanding the impact of the local context in student disengagement:

Uncovering ‘the influences of the local context’ requires process-oriented and humanistic approaches to research that account for participants’ own experiences and understandings and allow the researcher to ‘experience for herself both the ordinary routines and conditions under which participants conduct their lives, and the constraints and pressures to which such living is subject. In the absence of more research that employs such methodological approaches, we will remain limited in our understandings of why students leave school and, thus, limited in our capacity to develop effective interventions into the problem of school dropout (p. 240).

The present study extended Brown and Rodriguez’s (2009) work by proffering a metatheory that includes a system reflecting the local context in which behavior occurs. Furthermore, Brown and Rodriguez’s (2009) and the other aforementioned studies underscore the need for a metatheory of dropout, because the totality of the studies highlight over 20 disparate causes of dropout.

Reports indicate there is a relationship between urbanicity and dropout. During a technical report on public school graduates and dropouts, the Institute of Education Sciences noted dropout rates were highest in large cities (Stillwell & Hoffman, 2008). Similarly, the Schott Foundation for Public Education (2008) notes the graduation crisis is most pervasive in large metropolitan areas. In the case of the western region of the United States, the event dropout rate for grades 9-12 in large cities was almost triple the national average, while the averaged freshman graduation rate was 22.4 percentage points lower than the national average (Stillwell & Hoffman, 2008).

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Sadly, none of the previously mentioned studies or reports offer a theoretical framework or posit a metatheory of dropout simultaneously accounting for urbanicity, bullying, changes in educational placement, the mismatch between home and school culture, and the interaction between retention and work. Moreover, the factors implicated by the aforementioned studies are only a portion of the factors identified to date. Statistics also suggest there is a relationship between district size and dropout rates. According to the Institute of Educational Sciences, during the 2005-06 school year,

averaged freshman graduation rates were highest in districts whose enrollment did not exceed 1,000 students. Furthermore, districts enrolling 50,000 or more students had the highest dropout rates in the West (Stillwell & Hoffman, 2008). These findings do not bode well for a district like Clark County School District, whose total student enrollment was 308,554 students during the 2007-2008 school year (Nevada Annual Reports of Accountability, 2008).

Socioeconomic background has also been implicated in the phenomenon of dropout. Residing in poor neighborhoods, low levels of education and female-headed households are factors associated with dropout (Hammond et al., 2007). Also, statistics bear out the relationship between dropout and socioeconomic status. Students from low-income families have a higher event dropout rate than students from middle-income and high-income families (Reimer & Smink, 2005). Startlingly, the event dropout rate for low-income families is six times greater than the event dropout rate for high-income families (Reimer & Smink, 2005).

### **Interactions**

Several studies implicate interactions in the dropout phenomena. In a qualitative study employing focus groups, interviews, and document review, Patterson, Hale, and Stessman (2007) examined how school culture and structure contributed to the dropout rate among Latino students with low income. In total, the experiences of 68 stakeholders were encapsulated, including students, educational personnel, parents, and family members. In a school where the averaged freshman graduation rates was 53.6%, Patterson, Hale, and Stessman (2007) found incongruence between school culture, instruction, and students' home culture resulted in dropout in urban settings. While the

present study does not include the interaction found by Patterson, Hale, and Stessman (2007), Bronfenbrenner's Ecological Theory includes a construct reflective of the interaction between home and school, the mesosystem. Consequently, proffering Bronfenbrenner's Ecological Theory offered an opportunity to bring further coherence to the literature by positing a theory that could account for the interaction found by Patterson, Hale, and Stessman (2007).

Entwistle, Alexander and Olson (2005) found that an interaction between age, nature of work, nature of transition into work, and retention resulted in dropout. In a quantitative study employing multinomial regression analysis with secondary data, Entwistle, Alexander, and Olson (2005) explored how work and work transitions affect dropout. Using the Beginning School Study dataset, a panel comprised of 800 Baltimore students whose cumulative dropout rate was greater than 40%, the researchers tested a model that included: race, gender, retention, standardized test scores, socioeconomic status, age, and school engagement. The present study included race/ethnicity and gender. Accordingly, the present study extends Entwistle, Alexander, and Olson's (2005) study by examining a metatheory theory that encapsulates the interaction and several of the study variables.

In the same vein, Van Dorn, Bowen and Blau (2006) also identified an interaction impacting dropout. Using NELS and census data, Van Dorn, Bowen and Blau (2006) found when individual, family, school, and neighborhood characteristics were controlled, White students were more likely to dropout than African American students. Van Dorn, Bowen, and Blau (2006) undertook the study to examine the impact of neighborhood racial and ethnic diversity, consolidated inequality, individual factors, school factors, and

family factors on dropout. Employing hierarchical logistic regression analysis, the study variables included region, urbanicity, gender, race/ethnicity, academic achievement, family risk, grade point average, and school size. The present study employed a similar methodology and included several variables noted in Van Dorn, Bowen, and Blau's (2006) study, namely gender, race/ethnicity, region, and urbanicity. More importantly, constructs taken from Bronfenbrenner's Ecological theory have been conceptualized as including phenomena like diversity, inequality, particularly the exosystem (Hess, 2000) and the macrosystem (Jung, 1999).

Each of the aforementioned studies found that outcomes and other interactions were significant and should be incorporated in any theory purporting to explain dropout (Patterson et al., 2007; Entwisle et al., 2005; Van Dorn et al., 2006). However, few dropout theory accounts for those interactions and those factors (Hess, 2000), further bolstering the case for a metatheory of dropout.

Clearly, factors associated with dropout have been identified. However, what remains unclear is how one can succinctly account for the myriad factors that have been documented as contributing to dropout. Each of the aforementioned factors and interactions warrant intervention and could likely be targeted. Unfortunately, no systematic process or organizing framework has been posited for identifying and targeting each of the factors and interactions in the aforementioned studies. Fortunately, recent empirical undertakings suggest an ecological approach could be useful (Jozefowics-Simbeni, 2008; Hess, 2000; Jung, 1999; Lee & Ip, 2003).

## **Survey Research**

The value of conducting the present study was also supported by theoretical and methodological approaches undertaken in recent studies. In April 2006, the Massachusetts Department of Education released a report detailing findings compiled from a statewide survey examining the nature of dropout in Massachusetts. The open-ended survey was comprised of four questions (Massachusetts Department of Education, 2006):

1. Based on what you've seen in your district, why are students in your community dropping out of high school? Please be as specific as you can, and if possible, include the number of students who dropped out for each reason in the 2003-2004 school year.
2. What steps has your school or district taken to improve high school retention and graduation rates?
3. What do you see as the biggest challenge in decreasing the state's dropout rate?
4. What steps do you think the Department of Education can take to help curb this problem statewide?

In total, 105 respondents completed the survey. The respondent pool was comprised of school and district leadership; i.e. principals and superintendents, throughout the state. The five most common responses were organized into five broad categories: (1) lack of academic success, (2) family/personal issues, (3) economics, (4) truancy, and (5) unknown. Other responses were lack of educational alternatives, mobility, mandated assessments, lack of funding, transportation, school size, grade retention, expulsion, transportation, and lack of support services. These findings suggest

that even when viewed through the lens of other stakeholders, dropout is a complex phenomenon requiring a broad conceptual framework.

Similarly, Aviles, Guerrero, Howarth, and Thomas (1999) conducted focus groups in Minnesota examining the dropout phenomenon through the lens of Latinos who dropped out. In total 72 respondents participated, ranging in age from 16 to 24 years.

Participants responded to three questions:

1. What were some reasons you dropped out of school?
2. What could have prevented you from dropping out?
3. What would you say to a brother, sister, relative, or friend who was considering quitting school?

Consistently, absenteeism, teacher and staff expectations, perceptions of racism, and pregnancy surfaced as attributions (Aviles et al., 1999).

In a study comprised of data analysis, focus groups, and interviews, the Community Foundation in Jacksonville (2008) examined the dropout phenomenon in a county with a 35.7% dropout rate. Conducted in Duval County, Florida, the study noted absenteeism, retention, and suspensions were major indicators of school disengagement. Further, the Community Foundation in Jacksonville (2008) also found students were susceptible to dropout regardless of their ethnic/racial makeup.

In June 2009, the National Center for Education Statistics released an exploratory report examining the nature of dropout experiences across three cohorts, (Dalton, Glennie, & Ingels, 2009). Utilizing survey data compiled from three longitudinal studies, including the National Education Longitudinal Study of 1988, Dalton et al. (2009) discussed the characteristics dropouts.

While the abovementioned studies represented the experiences of various ethnic groups and were conducted in locations of various levels of urbanicity (Bridgeland et al., 2006; Aviles et al., 1999; The Community Foundation in Jacksonville, 2008), these studies did not yield a metatheory of dropout. The present study responded to this paucity, while illuminating the responses of a national sample.

### **Dropout Narrations and Ecological Approaches**

Hess (2000) proffers the experience of Mexican American youth in the American educational system. In his study regarding Mexican American youth and drop out through an ecological lens (Hess, 2000), Hess notes:

Bronfenbrenner's Ecological Model of Human Development provides a promising framework for organizing our knowledge and highlighting the importance of interactions between individual, environmental, and sociocultural factors (p. 269). Bronfenbrenner's Ecological Model acts as a conceptual lens through which one can closely view the direct effects of individual-setting relationships while examining broader societal interactions" (p. 269).

Using Bronfenbrenner's Ecological Model as a framework, Hess (2000) demonstrates how an ecological perspective may sufficiently account for a number of factors implicated in dropout among Latinos, including national educational policy, local funding issues, family-school relations, hiring practices, bilingual education programs, and media.

In the same vein, Jung (1999) tested a multisystemic model of dropout. Using Henggler's Multisystemic Perspective of Adolescent Behavior as framework, Jung (1999) developed and tested a multisystemic dropout model. Jung's study was accomplished by undertaking logistic regression analysis with a dataset derived from the

National Education Longitudinal Study of 1988 (NELS: 88). In keeping with this precedence, the present study examined Bronfenbrenner's Ecological Model as a multisystemic dropout model by examining the relationship between dropout attributions and Bronfenbrenner's microsystem.

The need for the present study becomes evident when one examines the precedent of articulating the experiences of those who drop out. One case in point is a recent publication by Bridgeland, Dilulio and Morison (2006). Consonant with understanding the nature of dropout through the lens of dropouts, their study regarding the perspectives of dropouts reports the findings gathered from a series of focus groups and interviews conducted in Philadelphia and Baltimore. Comprised of dropouts, ages 16-25, the focus groups participants identified a host of dropout attributions. The most salient attributions were boredom, absenteeism, peer group influence, lack of structure, and low school performance. Additionally, participants identified such factors as employment, teen parenting, and low motivation.

Consistent with Hess' examination (2000), Valerius examined the nature of dropout using an ecological developmental lens in 2005. In a study that included self-report, Valerius (2005) examined the phenomena of dropout across multiple domains or levels; i.e. neighborhood, family, peer, and academic, via secondary data analysis from a longitudinal study. Valerius' findings suggested graduation is best conceptualized as a "broad multilevel challenge."

In 2003, Lee and Ip examined the phenomenon of dropout in Hong Kong and the influence of three systems: family, school, and peers. Utilizing an ecological perspective, Lee and Ip (2003) examined narrations resulting from 30 in-depth interviews with

dropouts and non dropouts. Lee and Ip (2003) found the family system had a distal effect on dropout, while the peer system had an immediate effect. Further, they found the school system had a predisposing effect on dropouts. Lee and Ip (2003) concluded that dropout prevention should include a focus on (1) “strengthening the interdependence of the family system,” (2) parent education, (3) school climate, (4) equitable school policy and practices, (5) increasing a student’s commitment to school, (6) a strength-based approach to peer engagement, and (7) coping.

With a similar area of study, Brown and Rodriguez (2009) examined narrations resulting from semi-structured in-depth interviews with Latino youth in the Northeast region of the United States. Using a “participant-centered perspective” Brown and Rodriguez examined how and why youth dropout. Particularly germane was Brown and Rodriguez’s (2003) assertion that many studies treat “dropout, individual, institutional, and structural factors as discrete, which undermines the inherent sociological nature of dropout.” Further, Brown and Rodriguez (2003) argued for utility of a “structure-culture-agency framework,” in recognition of the manner in which each of these “dimensions operate in relation to one another.” Moreover, consistent with Fine’s work (1991), themes of alienation and institutional neglect surfaced during Brown and Rodriguez’s (2009) analysis. Brown and Rodriguez (2003) conclude their discussion by calling for studies that “uncover the influences of the local context,” while employing “process-oriented and humanistic approaches.”

The studies of Lee and Ip (2003) and Brown and Rodriguez (2009) hold significant implications for the discipline of counselor education and the dropout prevention literature. First, each study highlights the insight that may be gleaned from

the narrations of dropouts. Further, Lee and Ip (2003) demonstrate how these insights can inform dropout prevention practice. Moreover, Lee et al. (2003) and Brown et al. (2009) illustrate the need and utility of applying specific theoretical orientation. Unfortunately, there are few studies examining the utility of ecological approaches in the dropout prevention literature. The present study examined the utility of utilizing by using survey data derived from NELS: 88.

### **Bronfenbrenner's Ecological Theory**

In "Ecology of Human Development," Urie Bronfenbrenner offers his ecological theory, a systems-focused theory. In Bronfenbrenner's Ecological Theory, the environment is conceptualized as a "set of nested structures," whose center is an individual's most salient contexts, such as home, school or other settings like a detention center, in the case of an incarcerated youth (Bronfenbrenner, 1979, pg. 3). In total, Bronfenbrenner argues five systems inform the development of individuals: the microsystem, the mesosystem, the exosystem, the macrosystem, and the chronosystem.

Also, central to Bronfenbrenner's ecological theory is the interaction between these contexts. Bronfenbrenner maintains the interplay between contexts or settings can be defining intersections, with the power to influence development. Even more profound, Bronfenbrenner asserts an individual's development is also impacted by events in contexts or settings in which they are not physically present. One case in point is the decisions rendered by school boards that dictate policy and practices of schools. While students are not present when decisions are rendered, their academic progress can be significantly impacted by these decisions. In 1998, California voters approved a proposition restricting the provision of bilingual education. Many argue this decision

profoundly impacted the educational experiences of English-language learners (Bali, 2001).

Another germane aspect of Bronfenbrenner's ecological theory is the construct "ecological transitions" (Bronfenbrenner, 1979). As defined by Bronfenbrenner, ecological transitions are "shifts in roles or settings that occur throughout the lifespan (Bronfenbrenner, 1979). Bronfenbrenner maintains that with each shift in role or setting, a change in expectations occurs. He posits this change in expectations is akin to reciprocal determinism, whereby an individual acts and is acted upon by the environment. Moreover, Bronfenbrenner underscores the importance of modeling.

Each aspect of Bronfenbrenner's Ecological Theory holds implications for understanding human development. One might argue it holds implications for understanding other phenomena. As late as 2008, researchers have called for the use of ecological approaches in dropout prevention (Jozefowics-Simbeni, 2008). Jozefowics-Simbeni (2008) noted the "accumulation of individual, social, school, and environmental risks factors, and the interaction among such factors increase dropout risk." Accordingly, Jozefowics-Simbeni (2008) maintains an ecological approach to dropout prevention is requisite to any earnest attempt to mitigate dropout in secondary schools.

Consonant with Jozefowics-Simbeni's point, Hess (2000) examined the phenomenon of dropout among Mexican American youth. Hess (2000) argued, while "the interplay between the personal attributes of the student, family, peers, school, and society are considered the most important factors contributing to high school completion, often there is no systematic framework used to facilitate the organization and integration of these variables." In recognition of this challenge, the present study explored the utility

of Bronfenbrenner's Ecological Theory as a systematic framework for the organization and integration of dropout factors.

Bronfenbrenner's work (1994) operationalized each level of his ecological model. Lee and Ip (2003), Hess (2000), and Jung (1999) also operationalized Bronfenbrenner's ecological model in recent studies. This present study utilized the variables operationalized by Bronfenbrenner (1994), Hess (2000), Jung (1999), and Lee and Ip (2003), as a guide for operationalizing Bronfenbrenner's levels (see Appendix B).

Further, Jung's examination of Henggler's Multisystemic Perspective of Adolescent Behavior served as an exemplar for the undertaking of the present study. In keeping with Jung (1999) and recent methodological undertakings, the present study examined the relationship between dropout attributions and Bronfenbrenner's microsystem, by conducting secondary analysis using NELS: 88 survey research.

### **The Microsystem**

As previously noted, the microsystem is one of five systems implicated in human development by Urie Bronfenbrenner (1994). The microsystem is best conceptualized as the immediate contexts or settings in which the individual habitats. These settings typically include the family, school, peer group, community, and work (Bronfenbrenner, 1994). Historically, the microsystem has included the influence of the family, peer group, school, and workplace on human development (Bronfenbrenner, 1994). Most recently, the microsystem has also included the influence of the individual (Bronfenbrenner & Morris, 2007).

Over time, the conceptualization of the microsystem has evolved. Lee and Ip (2003) conceptualized the microsystem as including: school climate, commitment to

school, school regulations/rules, peer type, peer culture, peer functioning, family interdependence, family homeostasis, family adaptability, relationship with classmates, perception of school curriculum, and schooling experience. Hess (2000) interpreted the microsystem as including: home language, student's first language, level of acculturation, parenting style, teaching strategies, teacher expectations, academic interventions, school policies, alienation, peer rejection, extracurricular activities, family processes, school practices, and peer relationships. Jung (1999) had a much narrower conceptualization of the microsystem: family, peer, and teachers. Most recently, Bronfenbrenner and Morris (2007) expanded the microsystem to include personal dispositions, resources, and demands.

In the present study, the microsystem is conceptualized as reflecting each of the aforementioned conceptualizations. However, the present study's questionnaire only included the following applications of Bronfenbrenner's microsystem:

1. Work
2. Attitudes toward school, teachers, and students
3. Desires to have a family and becoming a parent
4. Wanting to travel
5. Supporting one's family or caring for a family member
6. Suspension or expulsion from school
7. Friends who dropped out
8. Inability to complete school work or failing school
9. Marrying or planning to marry
10. Alienation

11. Changing schools
12. The interaction between school and work
13. Substance or alcohol abuse

### **Summary**

In summary, the present study contributes to the literature on several fronts. First, by many accounts, dropout is a pervasive persisting concern and its economic and social impact is deleterious. Second, few studies have examined the phenomenon of dropout from an ecological perspective; however the literature suggests dropout is generally a complex interplay of factors that could be categorized by systems. Thirdly, while a few studies have employed an ecological approach in their examination of dropout, these studies have not yielded a metatheory of dropout. Consequently, the benefits of the proposed study are three-fold.

Consistent with Abrams and Hoggs (2004) characterization of metatheory as a theory which “places specific research questions within a broader framework and encourages integration of theorizing for a range of disparate phenomena” (p. 98), the present study responded to the paucity of studies accounting for the myriad factors associated with dropout. Second, in keeping with Overton’s (2007) definition of metatheory, the present study proffered a framework for organizing dropout prevention efforts, by identifying systems and interactions that may be strategically targeted for intervention. Third, the study extended the literature on ecological approaches to dropout.



## CHAPTER 3

### METHOD

The intent of this study was to examine the potential utility of Bronfenbrenner's Ecological Theory as a dropout metatheory. Using the NELS: 1988 dataset as a data source, there were two distinct, but related phases in this study. The initial phase was an examination exploring the extent to which NELS: 1988 responses about reasons for dropout could be appropriately classified in the levels of microsystem, exosystem, mesosystem, macrosystem, and chronosystem in Bronfenbrenner's theory. Conclusions from the initial phase were then used in the second phase of the study, examining the following research questions:

1. Controlling for gender, can applications of Bronfenbrenner's theory predict dropout?
2. Controlling for race/ethnicity, can applications of Bronfenbrenner's theory predict dropout?
3. Controlling for urbanicity, can applications of Bronfenbrenner's theory predict dropout?
4. Controlling for geographic region, can applications of Bronfenbrenner's theory predict dropout?

#### **Data Source**

In 1988, the National Center of Education Statistics (NCES) launched a longitudinal study, the National Education Longitudinal Study of 1988. The National Education Longitudinal Study now has five waves or data points. The study surveyed students regarding student perceptions of reasons why they dropped out. In total,

approximately 25,000 students were surveyed over a twelve year period, including approximately 2,000 respondents identifying as dropouts (Curtin et al., 2002). The study population represented each of the major national geographic regions, racial/ethnic groups, and gender types. Using data collected during wave three of NELS: 1988, the present study sought to determine whether applications of Bronfenbrenner's theory could account for dropout attributions across multiples contexts.

### **Selection**

The selection process in NELS: 1988 was comprised of a two-stage probability sampling design, which included freshening to address the natural attrition occurring during the study. Consistent with the study population, the sample included 12,144 respondents of various racial/ethnic groups and gender types. Moreover, 16% of respondents had dropped out of high school one or more times. The study sample included respondents from four geographic regions: Northeast, Midwest, South, and West. In addition, respondents attending schools with varying levels of urbanicity, such as urban, suburban, and rural, were included.

### **Weighting**

The weighting protocol in NELS: 1988 was comprised of a four-step process: (1) development of a classification scheme, (2) establishment of the design weight, (3) adjustment for nonresponse, and (4) multidimensional raking. The classification scheme was derived from the respondents' status during data collection. In total, eight classifications were utilized:

1. Eligible, dropout as of survey date;
2. Eligible, in school, in expected grade;

3. Eligible, in school, not in expected grade;
4. Ineligible
5. Out of scope (deceased or out of country);
6. Eligible, freshened, dropout as of survey date;
7. Eligible, freshened, in school; and
8. Ineligible freshened

Subsequent to the classification scheme, a design weight was established reflecting the selection probability of each case. Next, this weight was adjusted for nonresponse by multiplying by the inverse of the cases' probability of selection. The product of the inverse response rate and the design weight served as a preliminary adjusted rate. Using a procedure referred to as multidimensional raking (Curtin et al., 2002), this adjusted rate was then further adjusted to meet overall and marginal targets for the sums of weights until the sum of weights for each marginal category; i.e. Male, Female, West, South, Asian, Black, were equal to the corresponding sum of the final base-year weights for each marginal category.

### **Instrumentation**

The data used in this secondary data analysis study was collected in NELS: 1988 using an instrument titled, "Second Follow-Up: Not Currently in School Questionnaire." This questionnaire was developed by the National Center for Education Statistics, in collaboration with an expert panel and several governmental entities. Prior to administration, the instrument was field tested to ensure its utility for predicting future outcomes. The analysis in the present study was focused on the demographic variables

and responses to Question 9A of the NELS: 1988 questionnaire about dropout. Question 9A and the response alternatives are displayed below:

Here are some reasons other people have given for leaving school. Which of these would you say applied to you?

- a. I got a job.
- b. I didn't like school.
- c. I couldn't get along with my teachers.
- d. I couldn't get along with other students.
- e. I wanted to have a family.
- f. (FOR FEMALES ONLY) I was pregnant.
- g. I became the father/mother of a baby.
- h. I had to support my family.
- i. I was suspended from school.
- j. I did not feel safe at school.
- k. I wanted to travel.
- l. My friends had dropped out of school.
- m. I had to care for a member of my family.
- n. I was expelled from school.
- o. I felt I didn't belong at school.
- p. I couldn't keep up with my schoolwork.
- q. I was getting poor grades/failing school.
- r. I got married or planned to get married.
- s. I changed schools and didn't like my new school.

- t. I couldn't work and go to school at the same time.
  - u. I had a drug or alcohol problem.
  - v. Other (DESCRIBE BELOW)
- 

### **Phase One: Procedures**

The present study began with a tiered process comprised of an extensive literature review, the development and evaluation of a coding scheme, and an exploratory factor analysis. The literature review was conducted to identify examples of each level of Bronfenbrenner's Ecological Theory: microsystem, exosystem, mesosystem, macrosystem, and the chronosystem (see Appendix B). A preliminary coding scheme was developed and applied to the alternatives provided as possible responses to Question 9A in the NELS: 1988 questionnaire, the reasons for leaving school (see Appendix C).

The preliminary coding scheme was then applied to Question 9A by two independent evaluators. The evaluators reviewed the coding scheme, and then assigned the possible responses to Question 9A to one of the levels in Bronfenbrenner's theory: the microsystem, the exosystem, the mesosystem, the macrosystem, the chronosystem, and other (see Appendix C). Next, inter-rater reliability analysis utilizing the Kappa statistic was conducted to ensure the coding scheme was sufficiently reliable.

A second approach in phase one, identifying the extent to which Bronfenbrenner's theoretical constructs were reflected in attributions for dropout in the NELS: 1988 data, involved an exploratory factor analysis. The dropout respondents' responses to Question 9A were subjected to an exploratory factor analysis. The purpose of this analysis was to identify the number of distinct factors evident in the data, and through examination of the

responses associated with the factors, the number of Bronfenbrenner's theoretical levels which were reflected.

### **Phase Two: Procedures**

The final phase of the study used outcomes of the initial phase to investigate the utility of a factor apparently reflecting Bronfenbrenner's microsystem as a predictor of dropout. The dependent variable in this phase was dropout status. The independent variables were gender, race, geographic region, urbanicity, and the factor representing the microsystem. Logistic regression was the analysis tool used for this phase.

### **Data Analysis**

The analyses in the two phases of this study included inter-rater reliability analysis, exploratory factor analysis, logistic regression analysis, and the use of several related statistics. The related statistics were: the Kappa statistic, the Keiser-Meyer-Olkin Measure of Sampling Adequacy, and Bartlett's Test of Sphericity, Cronbach's alpha, the Hosmer-Lemeshow statistic, Cox & Snell R Square, and Nagelkerke R-Square. The purpose of each is described below.

The inter-rater reliability analysis was conducted on the coding scheme. Determining reliability and validity is necessary when study variables are derived from an instrument or questionnaire employing constructs (Martin, 2000). Inter-rater reliability analysis was conducted using the Kappa statistic to examine the efficacy of the coding scheme identifying responses associated with levels of Bronfenbrenner's Ecological Theory.

The Kappa statistic is a measure of inter-rater agreement derived from the difference between observed and expected agreement (Viera & Garret, 2005). The

Kappa statistic is generally reported as a value ranging from 1 to -1, whereby 1 indicates perfect agreement, 0 indicates what is expected by chance, and -1 indicates total disagreement (Viera & Garret, 2005).

After the coding scheme was developed and evaluated, the exploratory factor analysis was conducted. Factor analysis is a statistical technique utilized to identify factors, or hypothetical constructs, associated with a measure (Sowell, 2001). Norris and Lecavalier (2010) note “exploratory factor analysis is used when there is little supporting evidence for the factor structure, or when the research goal is to identify the number of common factors and the pattern of factor loadings” (p. 9).

The present study employed factor analysis to identify the factors or constructs that could be yielded from Question 9A. The factor analysis protocol included principal component analysis, a Keiser-Meyer-Olkin Measure of Sampling Adequacy, and Bartlett’s Test of Sphericity. Subsequent to the exploratory factor analysis, one of the resulting factors (the microsystem factor) was examined using the Cronbach’s alpha statistic.

Cronbach’s alpha is a statistic used to measure internal consistency and reliability (Cronbach & Shavelson, 2004). It is typically used as a measure of the extent to which a group of items reflects a single one-dimensional latent construct (Rosenbaum, 1989). Accordingly, the present study employed the Cronbach Alpha statistic to ensure the factor derived from the exploratory factor analysis reflected one construct characterized by high internal consistency.

The principal component analysis identified the factors underlying Question 9A. The Keiser-Meyer-Olkin Measure of Sampling Adequacy was applied to ensure the items

noted in Question 9A were factorable. Factorability is a minimum criterion for the use of factor analysis (Fabrigar, Wegener, MacCallum, & Strahan, 1999). The Keiser-Meyer-Olkin Measure of Sampling Adequacy tested the factorability of the items in Question 9A by ensuring the partial correlations between the items were small.

The Bartlett's Test of Sphericity was applied to ensure the factor model derived from Question 9A was appropriate. Bartlett's Test of Sphericity examines the appropriateness of the factor model by ensuring that correlation matrix associated with items are not an identity matrix, whereby diagonals are 1.0 and all others correlations are zero (Fabrigar et al., 1999). Ensuring the items are factorable and the correlation matrix is not an identity matrix are critical steps in the use of factor analysis (Norris & Lecavalier, 2010).

In the second phase of the study, a logistic regression analysis was conducted to examine the potential utility of Bronfenbrenner's ecological model as a metatheory of dropout. As a part of the logistic regression analysis protocol, the Hosmer-Lemeshow statistic, the Cox & Snell R-square statistic, and Nagelkerke statistics were also employed. The Hosmer-Lemeshow statistic is a statistical test typically used when the data is obtained from a random survey (Hosmer & Lemeshow, 2000). The test examines the "goodness of fit" of logistic regression models (Hosmer & Lemeshow, 2000). The Cox and Snell R-square statistic and the Nagelkerke statistic are also statistical tests of "goodness of fit" employed with logistic regression analyses (Draper & Smith, 1998). Cox and Snell R-squared and Nagelkerke R-squared are pseudo r-squares intended to approximate r-squared, a coefficient of determination indicating how well future

outcomes are likely predicted by a model (Draper & Smith, 1998). Accordingly, the present study included the Hosmer-Lemeshow statistic, the Cox & Snell R-square statistic, and Nagelkerke statistic to examine the goodness of fit of the present study's logistic regression model.

### **Summary**

The present study was a secondary analysis of data obtained in the National Education Longitudinal Study of 1988 (NELS: 88) dataset. The intent of the present study was to examine responses given as reasons for dropout in view of how those responses could be categorized with Bronfenbrenner's theoretical structure and the extent to which the resulting categorization could predict dropout, considering related demographic variables.

Several analyses were performed: (1) a coding of responses with a template of Bronfenbrenner's theoretical structure, (2) an inter-rater reliability analysis of the coding system, (3) an exploratory factor analysis, and (4) a logistic regression analysis. Particular attention was given to accounting for students' attributions regarding their identity (e.g., demographic and profile characteristics) with environmental and regional contexts as possible moderators.

## CHAPTER 4

### RESULTS

The present study was a secondary analysis of data obtained in the National Education Longitudinal Study of 1988 (NELS: 88) dataset. The intent of the present study was to examine the responses given as reasons for dropout in view of how those responses could be categorized with Bronfenbrenner's theoretical structure and the extent to which the resulting categorization could predict dropout, considering related demographic variables. The present study entailed two distinct, but related phases.

The initial phase was an examination exploring the extent to which NELS: 1988 responses about reasons for dropout could be appropriately classified in the levels of microsystem, exosystem, mesosystem, macrosystem, and chronosystem in Bronfenbrenner's theory. A preliminary coding scheme was developed and applied to the responses. The preliminary coding scheme was then applied to Question 9A by two independent evaluators. The evaluators reviewed the coding scheme, and assigned the possible responses to Question 9A to one of the levels in Bronfenbrenner's theory; e.g. microsystem, exosystem, mesosystem, macrosystem, and chronosystem. Then, inter-rater reliability analysis utilizing the Kappa statistic was conducted to ensure the coding scheme was sufficiently reliable.

A second approach in phase one to classify the dropout responses in the levels of Bronfenbrenner's theory was an exploratory factor analysis. The purpose of the exploratory factor analysis was to identify the number of distinct factors evident in the data, and through examination of the responses associated with the factors, the number of Bronfenbrenner's theoretical levels which were reflected. Identifying the extent to which

Bronfenbrenner's theoretical constructs were reflected in attributions for dropout, the dropout respondents' responses to Question 9A were subjected to an exploratory factor analysis. Conclusions from the initial phase were then used in the second phase of the study, examining the following research questions:

1. Controlling for gender, can applications of Bronfenbrenner's theory predict dropout?
2. Controlling for race/ethnicity, can applications of Bronfenbrenner's theory predict dropout?
3. Controlling for urbanicity, can applications of Bronfenbrenner's theory predict dropout?
4. Controlling for geographic region, can applications of Bronfenbrenner's theory predict dropout?

Using logistic regression analysis as a tool, the second phase of the study used outcomes of the initial phase to investigate the utility of a factor apparently reflecting Bronfenbrenner's microsystem as a predictor of dropout. The dependent variable in this phase was dropout status. The independent variables were gender, race, geographic region, urbanicity, and Bronfenbrenner's theoretical level.

Accordingly, several analyses were performed during the course of the present study: (1) an inter-rater reliability analysis of the coding system, (2) an exploratory factor analysis, and (3) a logistic regression analysis. Following is an overview of the results of these analyses.

### **Inter-rater Reliability Analysis**

In examination of the coding scheme developed, inter-rater reliability analysis was conducted to ensure the coding scheme was sufficiently reliable. The inter-rater reliability analysis was conducted employing the Kappa statistic to determine the consistency among raters. The inter-rater reliability for the raters was .92 ( $\rho < .00$ ), 95% CI (91.85, 92.15), a high measure of agreement.

The raters agreed Question 9A's items could be representative of two levels from Bronfenbrenner's model: the microsystem and mesosystem. The results of their coding are displayed in Appendix C. The raters also agreed the coding scheme should include an additional category titled other, to enable classification of items not consistent with any level of Bronfenbrenner's model. In total, the raters agreed 11 items were representative of the microsystem, only one item was representative of the mesosystem, and the remaining 11 items were best classified as other. In light of the limited number of items classified as mesosystem-related items and the large percentage of items classified as other by the raters, an exploratory factor analysis was conducted for further exploration of the number of Bronfenbrenner's theoretical levels reflected in the Question 9A responses by the dropouts.

### **Factor Analysis**

An exploratory factor analysis was conducted on the 21 alternatives in Question 9A for which responses were elicited from both males and females in the "Second Follow-Up Questionnaire NELS 88: Not Currently in School" using principal component analysis. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity both indicated the items were adequately related for the factor analysis. The

Kaiser-Meyer-Olkin Measure of Sampling Adequacy was .989. This score was well above the recommended value of .6, indicating that the sample was factorable. Similarly, the Bartlett's Test of Sphericity was significant ( $\chi^2(210) = 1142024.61, p < .00$ ), indicating that the factor model was appropriate.

The results are displayed in Table 1, and, in contrast to the ratings that suggested three levels of Bronfenbrenner's theory, only one factor emerged. The single factor explained 98.42% of the variance from the items in Question 9A.

The alpha coefficient for the 21 items comprising the factor was .999, suggesting the items had high internal consistency. Evident in Table 1 are high communalities for the items, suggesting that the responses to the items from question 9A were highly related.

The results of the factor analysis were inconsistent with aspects of the coding scheme. In particular, nine of the items categorized as "other" and the item categorized as "mesosystem" by the raters, all loaded on a single factor with the items categorized as "microsystem" by the raters.

There was remarkable internal consistency in the responses to Question 9A, clearly indicating that a single factor was being measured by the responses. Moreover, although not completely consistent with the content analysis by the raters, the literature, including Bronfenbrenner and Morris's (2007) most recent iteration, suggests that all 21 of these items could be appropriately categorized as reflections of the microsystem. While the present study hoped to examine the utility of Bronfenbrenner's Ecological Theory in its entirety, neither the coding scheme nor exploratory factor analysis supported the examination of the entire theory utilizing Question 9A.

Table 1

*Results of Exploratory Factor Analysis Conducted Using Items from the “Second Follow-Up Questionnaire NELS 88: Not Currently in School, Question 9A.*

	Factor 1: Microsystem
I got a job.	.992
I didn't like school.	.994
I couldn't get along w/ teachers.	.995
I couldn't get along w/ other students.	.997
I wanted to have a family.	.994
I became a parent.	.993
I had to support my family.	.995
I was suspended from school	.998
I did not feel safe at school.	.997
I wanted to travel.	.998
My friends had to drop out of school.	.998
I had to care for a family member.	.997
I was expelled from school.	.996
I couldn't keep up w/ my school work.	.996
I felt I didn't belong at school.	.996
I was failing school.	.996
I got married or planned to get married.	.996
Changed schools & didn't like new one.	.998
Couldn't work/go to school at same time.	.995
I had a drug/alcohol problem.	.997
I had other problem.	.912
% of Total Variance	98.42

Consequently, the present study's focus was narrowed to an examination of Bronfenbrenner's microsystem.

Identifying the responses to Question 9A as the microsystem was supported by the factor analysis, appears consistent with the literature about Bronfenbrenner's

theoretical structure, and is also partially supported by the coding scheme using content analysis. Therefore, the single factor derived from the factor analysis was employed in the logistic regression analysis as the variable reflecting Bronfenbrenner's microsystem to address the research questions in phase two of the present study.

### **Logistic Regression Analysis**

Logistic regression analysis was conducted to test whether the microsystem factor, predicted dropout within particular contexts, namely gender, race, school type, and geographic region. Characteristics of the sample are displayed in Table 2. In total, the sample included 12,144 respondents, 9.2% of whom had dropped out of high school one or more times (n=1,121), and 90.8% who had never dropped out (n=11,023). Approximately 47.6% of respondents were male and 52.4% were female. The sample represented several racial/ethnic groups, geographic regions, and varying degrees of urbanicity.

In the case of geographic region, 15.4% of respondents had attended schools in the Northeast, 23.7% attended schools in the Midwest, 28.6% attended schools in the South, and 17.2% attended schools in the West. In the same vein, respondents attended schools in areas with varying degrees of urbanicity. Urban school attendees comprised 23.4% of the sample, while suburban school attendees made up 40.6% of the sample. Further, 29.5% of respondents attended rural schools.

The sample included several racial/ethnic groups. African Americans comprised 10% of the sample, while Asian/Pacific Islander comprised 7% of the sample. The largest percentage of the sample was White, with 68.4% reporting as White, not Hispanic. Also

included in the sample were individuals reporting as Hispanic or Native American, which comprised 13.4% and 1.2% respectively.

Table 2

*Descriptive Data for Logistic Regression Analysis Sample*

Variable	N	%
<b>Race/Ethnicity</b>		
Asian/Pacific Islander	845	7.0
Hispanic	1,621	13.4
Black	1,173	10.0
White	8,307	68.4
Native American	145	1.2
<b>Gender</b>		
Male	5,782	47.6
Female	6,362	52.4
<b>Urbanicity</b>		
Urban	2,843	23.4
Suburban	4,962	40.6
Rural	3,579	29.5
<b>Geographic Region</b>		
Northeast	1,876	15.4
Midwest	2,873	23.7
South	3,469	28.6
West	2,092	17.2
<b>Dropout Status</b>		
Never Dropped Out	11,023	90.8
Dropped Out 1 or more Times	1,121	9.2

Utilizing the abovementioned sample, logistic regression analysis was employed to examine each of the research questions. The results of the logistic regression analysis were significant. The results of the Wald Statistic, displayed in Table 3, indicated the microsystem was a statistically significant predictor of dropout. Further, a Hosmer-

Lemeshow statistic was computed, resulting in a significant chi square, Tables 4 and 5.

An overall test of the model, a likelihood ratio chi-square test was statistically significant,

Table 6. Two R-squares, Cox and Snell R Square, and Nagelkerke R-Square are

displayed in Table 7. Race and region were statistically significant indicators of dropout,

Table 3, and the overall model had an accurate prediction rate of 96.8%, Table 8.

Table 3

*Results of Logistic Regression Analysis*

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>	Microsystem	-1.668	.034	2315.71	1	.000	.193
	Race/Ethnicity			24.71	5	.000	
	Asian/Pacific Islander	-2.161	.594	13.231	1	.000	.115
	Hispanic	-1.203	.528	5.197	1	.023	.300
	Black	-1.568	.538	8.507	1	.004	.208
	White	-1.729	.518	11.146	1	.001	.177
	American Indian	-1.247	.658	3.592	1	.058	.287
	Male	-.127	.114	1.236	1	.266	.881
	Geographic Region			14.079	4	.007	
	Northeast	.484	.195	6.183	1	.013	1.623
	Midwest	-.098	.227	.185	1	.667	.907
	South	.004	.200	.000	1	.986	.996
	West	.038	.187	.042	1	.838	.962
	Urbanicity			5.396	3	.145	
	Urban	-.399	.218	3.357	1	.067	.671
	Suburban	-.382	.210	3.297	1	.069	.683
	Rural	-.174	.212	.675	1	.411	.840
	Constant	-2.036	.535	14.474	1	.000	.131

Table 4

*Results of Hosmer-Lemeshow Test*

Step	Chi-square	df	Sig.
1	24.674	8	.002

Table 5

*Contingency Table for Hosmer-Lemeshow Test*

Step 1	No Dropout= .00		Dropout= 1.00		Total
	Observed	Expected	Observed	Expected	
1	1134	1131.77	5	7.23	1139
2	1280	1274.83	5	10.17	1285
3	1150	1145.32	5	9.68	1155
4	1370	1362.56	5	12.44	1375
5	1256	1250.84	7	12.16	1263
6	1057	1050.73	5	11.27	1062
7	1125	1125.48	14	13.52	1139
8	1201	1192.91	9	17.09	1210
9	1193	1196.44	26	22.56	1219
10	378	413.13	919	883.87	1297

Table 6

*Omnibus Tests of Model Coefficients*

Step 1	Chi-square	df	Sig.
Step	4414.49	14	.000
Block	4414.49	14	.000
Model	4414.49	14	.000

Table 7

*Model Summary*

Step	Cox & Snell R Square	Nagelkerke R Square
1	.305	.702

Table 8

*Classification Table for Hosmer-Lemeshow Test*

Observed			Predicted		Percentage Correct
			Dropout		
			.00	1.00	
Step 1	Dropout	.00	10887	257	97.7
		1.00	136	864	86.4
Overall Percentage					<b>96.8</b>

a. The cut value is .500

**Summary**

The study’s analyses included an inter-rater reliability analysis, a factor analysis, and a logistic regression analysis. The inter rater reliability analysis was conducted employing the Kappa statistic to determine the consistency among raters. The inter rater reliability for the raters was .92 ( $p < .00$ ), 95% CI (91.85, 92.15), a high measure of agreement. The raters agreed Question 9A’s items could be representative of Bronfenbrenner’s theoretical levels.

After the inter rater-reliability analysis, the factor analysis was conducted. The factor analysis yielded one factor. The factor was consistent with applications of Bronfenbrenner’s microsystem and had a high degree of internal consistency. The alpha coefficient for the 21 items comprising the factor was .999. The factor was titled the

microsystem and subjected to logistic regression analysis in examination of the present study's research questions.

A logistic regression analysis was used to test key research questions, the capability of the microsystem to predict dropout, after controlling for gender, race, urbanicity, and geographic region. The results of the Wald test indicated the microsystem was a statistically significant predictor of dropout. Moreover, race and region were indicated the factor representing Bronfenbrenner's microsystem was a statistically significant predictor of dropout with those variables controlled.

## CHAPTER 5

### DISCUSSION

#### **Overview of Study**

The present study examined the utility of Bronfenbrenner's Ecological Theory as a metatheory of dropout. Using the NELS: 1988 dataset, the present study examined the relationship between dropout attributions and Bronfenbrenner's construct, the microsystem. Attention was given to accounting for students' attributions regarding their identity (e.g., demographic and profile characteristics) with environmental and regional contexts as possible moderators. In particular, the present study examined the responses given as reasons for dropout in view of how those responses could be categorized with Bronfenbrenner's theoretical structure and the extent to which the resulting categorization could predict dropout, considering related demographic variable. Accordingly, the present study entailed two distinct, but related phases. The first phase included an examination exploring the extent to which NELS: 1988 responses about reasons for dropout could be appropriately classified in the levels of microsystem, exosystem, mesosystem, macrosystem, and chronosystem in Bronfenbrenner's theory. During the second phase, the following research questions were examined:

1. Controlling for gender, can applications of Bronfenbrenner's Theory predict dropout?
2. Controlling for race/ethnicity, can applications of Bronfenbrenner's Theory predict dropout?
3. Controlling for urbanicity, can applications of Bronfenbrenner's Theory predict dropout?

4. Controlling for geographic region, can applications of Bronfenbrenner's Theory predict dropout?

Several analyses were performed during the course of the present study: (1) an inter-rater reliability analysis of the coding system, (2) an exploratory factor analysis, and (3) a logistic regression analysis. Following is an overview of the study's findings.

### **Findings**

The study analyses resulted in several significant findings. The NELS: 1988 dataset included a follow-up questionnaire for participants who were not currently in school. One of the items on the questionnaire provided a list of 21 reasons others had given for leaving school and asked the survey participants to mark all that applied.

Two procedures were used in the present study to explore the possible utility of Bronfenbrenner's theoretical model as a classification scheme for the reasons given for dropout. First, a coding scheme for the 21 reasons was developed and applied by independent raters. High inter-rater reliability was found with 11 identified as representative of Bronfenbrenner's microsystem, one representing the mesosystem, and the remainder identified as "other." The outcome of this content analysis is displayed in Appendix C.

The next step in exploring categorization of the responses in Bronfenbrenner's model was a factor analysis of the actual responses by the participants as reasons for dropout, excluding the one alternative that was gender specific. In contrast to the content analysis, a single factor was evident in the analysis. The reasons for dropout that were classified as representing the mesosystem and "other" in the content analysis all loaded

strongly on the same factor as the reasons that had been classified as consistent with Bronfenbrenner's microsystem.

With additional review of the literature and the clear outcome of the empirical analysis, the reasons for leaving school given by dropouts in the survey all appear appropriately classified as representative of Bronfenbrenner's microsystem. The microsystem as defined by reasons given by dropouts for leaving school was then used with the broader NELS-88 dataset, including participants who did and did not leave school, to examine contributions of gender, race/ethnicity, urbanicity, and geographic region in predicting dropout. Particularly significant were the following findings as detailed in Chapter 4:

- The present study's overall model was statistically significant suggesting that this application of Bronfenbrenner's theory can predict dropout, when gender, race/ethnicity, urbanicity, and region are controlled. The probability of the model **not** predicting dropout was 0%.
- The present study's model accurately predicted whether a respondent had or had not dropped out 96.8% of the time. The model predicted whether a respondent had not dropped out 97.7% of the time and whether a respondent had dropped out 86.4% of the time.
- The present study's predictors explained 31% to 70% of the variance between respondents who had dropped out and respondents who had not dropped out.

- In the present study, the microsystem, race/ethnicity, and region were statistically significant predictors of dropout, when other predictors were controlled.
- In the present study, Asian respondents were less likely than White respondents to dropout, while Latino respondents were more likely than African American respondents to dropout.
- In the present study, attending a school in the northeast region of United States increased the likelihood of dropout, while attending schools in other regions of the country was not a statistically significant predictor of dropout.
- In the present study, identifying as an American Indian was not a statistically significant predictor of dropout, while membership in all other racial/ethnic study groups was a statistically significant predictor of dropout.
- In the present study, neither gender nor urbanicity were statistically significant predictors of dropout when other predictors were controlled.

### **Relationship with Other Studies**

In keeping with Hammond, Linton, Smink, and Drew's (2007) findings, the present study examined multiple factors, including attitudes toward school and work. They (2007) found including multiple factors increased dropout prediction accuracy. The present study included multiple factors, and the model correctly predicted 96.8% of all cases. They (2007) also found dropout factors could be organized into four domains: the individual, family, school, and community. The present study's results suggested factors

related to dropout could be incorporated into at least one level of Bronfenbrenner's Ecological Theory (Table 1).

Similarly, Reimer and Smink (2005) noted several status and alterable variables or factors associated with dropout in their study. The status variables included gender and ethnicity. The alterable variables included grades. Each of these alterable and status variables were included in the present study. However, in the case of the present study, gender was not a statistically significant predictor of dropout, while grades and ethnicity were.

Neild, Balfanz, and Herzog (2007) called for identifying signals that indicated a student was likely to dropout. Using the present study's model, educators and policymakers would be armed with a tool that accurately predicted students who drop out 86.4% of the time. The items representing the microsystem in this study offer 21 signals.

The present study also included aspects of Suh and Suh's study (2007). Suh and Suh (2007) examined 180 potential predictors of dropout and found a number of factors, including peers, region, suspensions, and urbanicity were statistically significant indicators of dropout. While urbanicity was not a statistically significant predictor of dropout in the present study, region, peers, and suspensions, as reflected in the model, were predictors of dropout.

In a technical report on public school graduates and dropouts, Stillwell and Hoffman (2008) identified a relationship between urbanicity and dropout. Specifically, they found dropout rates were highest in large cities. Conversely, in the present study, urbanicity was not a statistically significant predictor of dropout, when other predictors were controlled.

A number of interactions are also noted in the literature. Patterson, Hale, and Stessman (2007) found an interaction between home culture, school culture, instruction, and urban settings resulted in dropout. Entwisle, Alexander, and Olson (2005) found an interaction between age, nature of work, transition into work, and retention resulted in dropout. Van Dorn, Bowen, and Blau (2006) found when individual, family, school, and neighborhood characteristics were controlled, White students were more likely than African American students to dropout. In the present study, a model including Bronfenbrenner's microsystem, region, gender, and urbanicity was found to be a statistically significant, with a dropout prediction rate of 86.4% and an overall prediction rate of 96.8% (Table 8). However, when the other study predictors were controlled, urbanicity, gender, and identifying as Native American were not statistically significant predictors of dropout. This finding suggested there was an interaction occurring between the factors in the model.

In keeping with a number of studies employing ecological approaches or calling for the use of ecological approaches (Hess, 2000; Jung, 1999; Valerius, 2005; Lee & Ip, 2003; Brown & Rodriguez, 2009), the present study results indicated an ecological approach can predict dropout. In the present study, one of Bronfenbrenner's levels, the microsystem, was found to be a statistically significant predictor of dropout when other moderators were controlled. Unlike Valerius' study (2005) examining several domains, the present study was limited to one domain. However, both Valerius (2005) and the present study found family, peer, academic performance distinguished between dropouts and non dropouts.

## **Implications**

The present study's findings may hold significant implications for the dropout and dropout prevention literature. Most importantly, the findings suggest an ecological approach, Bronfenbrenner's microsystem may account for and/or predict dropout. Given this finding, consideration should be given to the ways in which applications of the microsystem impact student performance. Family, school, the peer group, and workplace are applications of the microsystem (Bronfenbrenner, 1994). Using the microsystem as a framework, comprehensive dropout prevention efforts might include strategies for mitigating the negative forces associated with each of these factors, as well as the strengths and/or protective factors associated with each factor.

Similarly, the differences in racial/ethnic probabilities found in the present study could inform the discourse on dropout and dropout prevention. The present study's findings suggested Asian respondents were less probable than many racial/ethnic groups to dropout. Identifying as a Native Indian was not a statistically significant predictor of dropout, in the present study. Hence, the study's findings provide a context for understanding the importance of Brown and Rodriguez's (2009) call for research methodologies that recognize the "inherent sociological nature of dropout." Consideration should be given to the ways in which racial/ethnic culture impact education outcomes. Bourdieu and Passeron (2000) argue the primacy of cultural habits and dispositions in educational outcomes.

Additionally, the present study underscored the benefit of employing survey research. Using survey research, the Massachusetts Department of Education (2006) examined the nature of dropout and found lack of academic success and family/personal

issues, among other factors, contributed to dropout. Through survey research, Aviles et al. (1999) found pregnancy, absenteeism, teacher expectations, and other factors resulted in dropout. Similarly, the Community Foundation in Jacksonville (2008) found students were susceptible to dropout regardless of racial/ethnic membership. The present study identified a statistically significant model predicting dropout with an overall accuracy rate of 96.8%, through analysis of information from survey research.

### **Recommendations**

In light of the present study's findings, dropout prevention efforts should incorporate strategies that simultaneously respond to the influence of family, peer, school, individual dispositions and desire, gender, region, and urbanicity. In particular, this study suggests that value of considering the ways in which culture and region interact with the microsystem to predispose certain individuals to dropout.

Given the racial/ethnic differences in dropout predictors, attention should also be given to exploring the contextual factors that may place groups at a disadvantage in the American educational system. One might explore the impact of ethnic identity development, the acculturation process, and/or the experiences of Native Americans residing on reservations to determine why membership in particular racial groups may not predispose individuals to dropout. Bronfenbrenner's macrosystem may offer a useful construct for exploring this phenomenon. Hess (2000) proffers the relationship between ethnic identity and school completion as an example of Bronfenbrenner's macrosystem. Further, researchers have demonstrated validity of methodology and related approaches. One case in point is Brown and Rodriguez's (2009) study examining the narrations

Latino youths in the Northeast region of the United States. During their study, themes of alienation and institutional neglect were identified.

In light of the relationship between region and dropout supported by the present study, researchers and interventionists should also give consideration to the ways in which best practices and school reform efforts can be adapted to particular regional contexts. While much attention has been given to the southern and western regions of United States, the present study findings suggested every region should be prepared to experience and ameliorate dropout, particularly northeastern United States.

### **Future Research**

While not exhaustive, this study provides an essential step in the identification of a meta-theory of dropout. Future studies should include a thorough examination of the remaining levels of Bronfenbrenner's Ecological Theory: the exosystem, mesosystem, macrosystem, and chronosystem. Moreover, future studies should explore the utility of ecological approaches by utilizing more recent accounts of dropout attributions and/or student experience. Future studies could include:

1. A study examining the impact of school climate, student perception of curriculum relevance, or school policies on graduation rates. (Microsystem Applications)
2. An examination of the home-school partnerships, parental workplace policies, or ethnic identity development and their impact on course completion. (Mesosystem Applications)

3. A study examining the relationship between community violence, school dress code policies, and their impact on student achievement. (Exosystem Application)
4. A study examining the impact of popular culture on indicators of school completion. (Macrosystem)
5. A study exploring school completion rates during a period spanning the pre and post compensatory education era in America. (Chronosystem)

APPENDIX A

SECOND FOLLOW-UP QUESTIONNAIRE NELS 88: NOT CURRENTLY IN  
SCHOOL (SELECTED ITEMS)

9A.  Here are some reasons other people have given for leaving school. Which of these would you say applied to you?

(CIRCLE ONE ON EACH LINE)

	Yes	No
a. I got a job .....	1	2
b. I didn't like school .....	1	2
c. I couldn't get along with my teachers .....	1	2
d. I couldn't get along with other students .....	1	2
e. I wanted to have a family .....	1	2
f. (FOR FEMALES ONLY) I was pregnant .....	1	2
g. I became the father/mother of a baby .....	1	2
h. I had to support my family .....	1	2
i. I was suspended from school .....	1	2
j. I did not feel safe at school .....	1	2
k. I wanted to travel .....	1	2
l. My friends had dropped out of school .....	1	2
m. I had to care for a member of my family .....	1	2
n. I was expelled from school .....	1	2
o. I felt I didn't belong at school .....	1	2
p. I couldn't keep up with my schoolwork .....	1	2

q.	I was getting poor grades/failing school	..... 1	..... 2
r.	I got married or planned to get married	..... 1	..... 2
s.	I changed schools and didn't like my new school	..... 1	..... 2
t.	I couldn't work and go to school at the same time	.... 1	..... 2
u.	I had a drug or alcohol problem	..... 1	..... 2
v.	Other (DESCRIBE BELOW)	..... 1	..... 2

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## APPENDIX B

### PRESENT STUDY'S OPERATIONALIZATION OF BRONFENBRENNER'S

#### ECOLOGICAL MODEL

Bronfenbrenner's Levels	Variables
Microsystem	<p>Family, school, peer group, and work place (Bronfenbrenner, 1994). Home, school, and workplace (Bronfenbrenner, 1977). School climate, commitment to schooling, and school regulations/rules, peer types, peer culture, peer functioning, family interdependence, family homeostasis, family adaptability, relationship with classmates, perception of school curriculum, and schooling experience (Lee &amp; Ip, 2003). Home language, student's first language, level of acculturation, parenting style, teaching strategies, teacher expectations, academic interventions, "push effects in the school environment, school policies like retention, bilingual and compensatory education programs, alienation and peer rejection, extracurricular activities, family processes, school practices, and peer relationships (Hess, 2000). Family, peer, teachers (Jung, 1999). The person, including disposition, resources, and demands (Bronfenbrenner &amp; Morris, 2007).</p>
Mesosystem	<p>Relations between home and school or school and work (Bronfenbrenner, 1994). Interactions among family, school, peer group, camp, and church (Bronfenbrenner, 1977). Bidirectional relationship between family and school, relationship between ethnic identity development and school completion, and home-school partnerships (Hess, 2000). Parent-teacher communication, parent attitude towards teacher, parental involvement in schooling (Jung, 1999).</p>
Exosystem	<p>Relation between child in home and parent's workplace, relation between school and neighborhood peer group (Bronfenbrenner, 1994). Mass media, agencies of government, informal social networks, communication and transportation facilities, distribution of goods &amp; services, the world of work (Bronfenbrenner, 1977). Economic situations, educational policies, local funding issues, economically disadvantaged neighborhoods, educational reform, school-business partnerships, and school-to-work programs (Hess, 2000). Parent's work environment and sibling reputation at school (Jung, 1999).</p>
Macrosystem	<p>Culture or subculture, particularly customs, opportunity structure, life course options, bodies of knowledge, and material resources (Bronfenbrenner, 1994). Ethnic communities (Jung,</p>

	1999). Economic, social, educational, legal and political systems (Bronfenbrenner, 1977). School systems, national policies and laws, segregation, and unequal employment opportunities (Hess, 2000).
Chronosystem	Changes over time in family structure, SES, employment, or residence (Bronfenbrenner, 1994)

APPENDIX C

CODING SCHEME

**Microsystem**

(Family, School, Peer Group, or Workplace)

I got a job.
I didn't like school.
I couldn't get along with teachers.
I couldn't get along with students.
I had to support my family.
I was suspended from school.
I didn't feel safe at school.
My friends had to drop out of school.
I had to care for a family member.
I was expelled from school.
I couldn't keep up with my school work.
<p style="text-align: center;"><b>Mesosystem</b> (Relationship between home and school or Relationship between school and work)</p>
I couldn't work/go to school at the same time
<p style="text-align: center;"><b>Other</b> (Items not consistent with Bronfenbrenner's 1994 Treatment)</p>
I wanted to have a family.
I was pregnant.
I became a parent.
I wanted to travel.
I didn't belong at school.
I was failing school.
I got married or planned to get married.
I changed schools and didn't like the new one.
I had a drug/alcohol problem
I had other problem
Other (Verbatim)

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## VITA

Graduate College  
University of Nevada, Las Vegas

Tiffany Gewan Tyler

### Degrees:

Bachelor of Arts, Psychology, 2000  
University of Southern California

Bachelor of Arts, Sociology, 2000  
University of Southern California

Masters of Science, Counseling, 2004  
California State University, Northridge

### Publications:

**Tyler, T. G.**, Cleveland, R., Thompson, L., Maldonado-Daniels, C (in press). Evaluating Dropout Prevention Programs: A critical step in student reengagement efforts. Submitted to *Reclaiming Children and Youth*.

**Tyler, T. G.**, Cleveland, R., Sailes, J., Maldonado-Daniels, C. & Samuels, A. D. (Revision, 2010). Transforming school culture: Connecting the five p's. *Journal of Praxis in Multicultural Education*.

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Daneshvary, R. Schwer, R.K., Boland, R., Lazos, S., Horsford, S.D., Luna, N., **Tyler, T.** (Fall 2008). *Nevadans' reasons for dropping out of high school and their recommendations for change*. Nevada KIDS COUNT. The UNLV Center for Business and Economic Research.

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Dissertation Examination Committee:

Co-Chairperson, William Cross, Ph. D.

Co-Chairperson, W Paul Jones, Ph. D.

Co-Chairperson, Dale-Elizabeth Pehrsson, Ph. D.

Graduate Faculty Representative, Sterling Saddler, Ph. D.