

THE RELATIONSHIP BETWEEN GEOGRAPHIC MOBILITY AND
FEELINGS OF MASTERY DURING ADOLESCENCE

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THE RELATIONSHIP BETWEEN GEOGRAPHIC MOBILITY AND
FEELINGS OF MASTERY DURING ADOLESCENCE

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THESIS ABSTRACT

THE RELATIONSHIP BETWEEN GEOGRAPHIC MOBILITY AND
FEELINGS OF MASTERY DURING ADOLESCENCE

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The purpose of this study was to explore the influence of geographic mobility and demographic characteristics on feelings of mastery in adolescents. Participants ($N = 1,268$) were part of the second wave of the National Survey of Families and Households which assessed the life-history of participants and members of their family (Sweet and Bumpass, 1996). The participants in this study ranged in age from 10 to 17 years ($M = 13.3$). Males and females were equally represented in the sample and 71.2% were Caucasian. The adolescents were interviewed via the telephone and provided demographic information and rated their feelings of mastery over the environment. Parents reported on the frequency of moves, as well as the dates of moving since wave 1. Hierarchical regression analyses revealed that age (older adolescents) and race (Caucasian) were associated with higher levels of mastery. Frequency of moves exerted a small, but significant, negative effect on mastery, controlling for recency. No effect, however, was found for recency of moves. Based on these findings, the discussion

focused on the importance of conducting research that examines the complex family processes that occur over the course of a move.

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I. INTRODUCTION

America has been described as a “society without roots” (Packard, 1972). Over the past fifty years, the annual mobility rate has ranged from 14% to 20% of the American population (U.S. Census Bureau, 2004). According to the 2004 U.S. Census Bureau, over 40.1 million people changed residences between 2002 and 2003. American society dictates the need for mobility in order to reach our life goals, both personally and professionally (Gober, 1993). Due to the unique nature of geographic mobility, it cannot be identified as an inherently positive or negative event. Americans move households for a variety of reasons including warmer weather, leisure activities, changes in employment, and family responsibilities.

When examining the literature that focuses on the impact of mobility on individual adjustment, most research has addressed the effects of mobility on adolescents’ well-being (Humke & Schaefer, 1995; Pittman & Bowen, 1994). Although relocation can be a stressful period for all family members, adolescents face a particularly difficult time, as moving is seen as “psychologically disruptive and disorienting to children, especially teenagers” (Tucker, Marx, & Long, 1998, p. 113). Because of the developmental changes that are occurring during adolescence, adolescents begin to view themselves and the world around them from different perspectives (Elliott & Feldman, 1990). Correspondingly, they examine who they are and what they want to become as they search to form a stable identity. Beginning to establish a stable sense of self is one

of the most important tasks for adolescents. Part of the identity exploration process involves receiving feedback as to how others perceive them. This feedback increasingly comes from peers during adolescence. Developing successful peer relationships is one of the key markers of adolescence. As peers grow in importance, it is especially necessary for adolescents to develop the social skills that are needed to build satisfying and mature peer relationships. From a developmental perspective, development over the lifetime occurs in a series of stages in which individuals complete various tasks that are particularly relevant during a time period. In the case of adolescents, resolving the conflict between identity and role confusion is important as the achievement of an identity is necessary in order to successfully proceed into young adulthood (Erikson, 1968).

Identity development, however, may be hindered by mobility (Pittman & Bowen, 1994). Erikson (1968) emphasizes the importance of environmental stability in order to successfully develop one's self-concept. Without this stability, it may be difficult to achieve a coherent sense of self, leaving the adolescent in a state of distress and unable to complete important developmental tasks of adolescence. Because mobility increases discontinuity in the social environment, it may have a detrimental impact on adolescents, as suggested by parents, teachers, nurses, and mental health professionals (Goldsmith & Clark, 1987). Consistent with this view, adolescents have identified relocation as a stressor, classifying relocation as significantly more stressful than do adults (Holmes & Rahe, 1967; Hutton, Roberts, Walker, & Zuniga, 1987).

The view that mobility is a stressful, negative event has led researchers to focus on the potential negative impact that this stress has on adolescent adjustment (Hendershott,

1989; Pittman & Bowen, 1994). A range of adjustment indicators have been examined in the mobility literature, including self-esteem, depression, social support, social isolation, alienation, anxiety, self-image, and life satisfaction, among others. While some research indicates that moving is related to adolescent depression (Gibbs, 1986; Hendershott, 1989; Norford & Medway, 2002), other studies have found no relationship between mobility and depression (Adam & Chase-Lansdale, 2002). With regard to social indicators of adjustment, research indicates that adolescents who were recently mobile report less positive qualities in their new friendships (Vernberg, 1990), more social isolation (Cohen, Johnson, Stuenkel, & Brook, 1989) and more alienation and normlessness as compared to non-mobile adolescents or less recent movers (Calabrese, 1989). Further, decreased social support during adulthood has been linked to mobility during adolescence, indicating the possible long term implications of mobility (Myers, 1999). In contrast to these findings, Norford and Medway did not find a relationship between mobility and social support. There were no differences in perceived social support among adolescents who had not moved, were moderate movers (3 - 5 times), or high movers (6 -13 times).

Shaw (1979) reported that mobile adolescents viewed themselves in a more negative manner than their non-mobile peers, and self-denigration has been related to mobility, as well (Hendershott, 1989). However, other studies have not found a relationship between moving and self-esteem (Brown & Orthner, 1990; Kroger, 1980; Simmons, Burgeson, Carlton-Ford, & Blyth, 1987). Finally, recently mobile adolescent females, but not males, report lower levels of life satisfaction than do adolescents who have not moved or have not moved in the past year (Brown & Orthner, 1990). Overall,

although the limited findings are mixed with regard to the effect of mobility on adolescents' well-being, there is evidence that mobility may impact adolescents' adjustment.

Clearly, further research is needed to clarify the link between mobility and adolescents' adjustment. For example, mastery over the environment has been identified as an important concept in understanding well-being across the lifespan, including adolescence (Pearlin & Pioli, 2003). Mastery refers to the degree to which "people see themselves as being in control of the forces that importantly affect their lives" (Pearlin, Menaghan, Lieberman, & Mullan, 1981) and the "perceived ability to significantly alter events" (Burger, 1989, p. 246.) In particular, mastery includes the general beliefs individuals hold in regard to the control they have over their life and their ability to control their outcomes (Pearlin & Schooler, 1978). Therefore, individuals with a high sense of mastery believe the world is in their control while those who possess a lower sense of mastery view themselves as not having the power to control and change events in their life. The importance of personal mastery is further underscored by Ford (1985), who notes that having a sense of control over one's life events is a "key ingredient in being or becoming a competent person" (p. 5). While mastery has been characterized as a component of personality, it is not viewed as a completely stable personality trait, but more of a response to the challenges that one faces over the course of his or her life (Bandura, 1977; Deci & Ryan, 1987; Mainquist & Eichorn, 1989).

With regard to adolescents' mobility, mastery may be a particularly relevant aspect of adjustment to consider because adolescents typically are not in control of the decision to move. Often, the decision to move is not in the adolescents' hands, but is a

decision that is made by their parents. However, adolescents are part of the “move package” when their family relocates. For many adolescents, moving requires a change in neighborhoods, schools, extracurricular activities, and peer relationships. This disruption may undermine adolescents’ belief that they have the ability to control important outcomes in their lives.

Interestingly, mastery of the environment has been correlated with various indicators of adjustment that also have been examined in the adolescent mobility literature. In adolescent samples, higher feelings of mastery over the environment are associated with indicators of well-being such as higher levels of self esteem and life satisfaction (Fine & Kurdek, 1992; Neto, 2001). Conversely, lower feelings of mastery has been found to be related to negative aspects of well-being such as higher levels of depression, social problems, and negative affect (Ben-Zur, 2003; Conger, Conger, Matthews, & Elder, 1999; Fine & Kurdek, 1992; Herman-Stahl and Petersen, 1996; Korhonen, Kaukkanen, Peiponen, Lehtonen, & Viinamaki, 2001). Given these associations, it is surprising that only one study has examined the link between mobility and adolescents’ feelings of mastery.

Hendershott (1989) examined the relationship between mobility, mastery, self-concept, depression, and social support in adolescents. The sample was comprised of 205 early adolescents in the 6th-8th grades of a local school district. The author did not report on the demographic characteristics of this group (e.g., ethnicity, age, and gender). Of this sample, 15% had not moved since kindergarten, 22% moved once, 14% moved twice, 18% moved three times, 14% moved four times, and 18% moved five or more times. Mastery over the environment was assessed by a four-item index (Pearlin & Schooler,

1978). The frequency of moves was measured by asking adolescents to report how many times they had moved since they entered school. The number of moves was categorized as 0 moves, 1-2 moves, 3-5 moves, and more than 5 moves. Recency was characterized as having moved in the past year. Adolescents who moved once or twice, or more than five times, reported lower levels of mastery than did adolescents who had never moved, or moved 3-5 times. However, for the low movers' group, this relationship was found to be moderated by moving recently. That is, students who moved one or two times, but only if they moved during the past school year, reported lower feelings of mastery.

Thus, there is some evidence that mastery may be influenced by mobility during adolescence. It is important to note, however, that these findings are based on a convenience sample of early adolescents from a single school district. Additionally, less than 50% of the adolescents participated in the study. Further, there was no examination of demographic characteristics such as gender, age, and ethnicity. Therefore, the generalizability of these findings is unclear because no information was provided with regard to the characteristics of the sample. For example, we do not know if the relationship between mobility and mastery would be influenced by the age of adolescents, their gender, or if they belong to a minority population.

Gender, age, and ethnicity are important to understand because we have evidence that these demographic characteristics influence one's feelings of mastery. Some studies have shown that males tend to have higher feelings of mastery than females do, and that older adolescents report higher feelings of mastery than younger adolescents do (Finch, Shanahan, Mortimer, & Ryu, 1991). While there is evidence that adolescent adjustment factors can vary by ethnicity, with minority populations reporting more alienation,

normlessness, and powerlessness (Calabrese, 1989), most researchers have not examined mastery in the context of ethnicity in adolescent samples.

From a developmental perspective, adolescence is a particularly relevant period in which moving may have negative consequences for individual adjustment due to the disruption of peer networks. Moving from one city to another is likely to be more disruptive and stressful as compared to moving within the same town, as it more likely would involve a change in schools and peer relationships. Also, because the literature suggests that moving in the past year may be particularly detrimental to adolescents' adjustment (Brown & Orthner, 1990; Cohen, Johnson, Struening, & Brook, 1989), we will look at the impact of moving in the past year in relation to mastery. Therefore, the purpose of this study is to further explore the relationship between mobility across cities and feelings of mastery in a large, national sample of adolescents. In the current study, the two objective measures of moving as a stressor include the frequency of moves and moving in the past year. Specifically, it is hypothesized that more frequent moves and moves that occurred in the past year will be associated with lower levels of mastery among adolescents. Also, this relationship will be examined in the context of age, gender, and ethnicity.

II. REVIEW OF LITERATURE

In order to understand the relationship between mobility and feelings of mastery in adolescence, it is important to review previous research that has examined the link between mobility and various indicators of adolescent adjustment. Also, it is essential that existing research on mastery during adolescence be reviewed. An examination of these two areas of research will provide the basis for our expectation that mobility will influence levels of mastery among adolescents.

Mobility

Initial studies of children and mobility focused mainly on severe reactions, such as behavioral and emotional disturbances, to a move. For example, Stubblefield (1955) provided very brief descriptive portrayals of two children and two adolescents who had difficulty, both internally and externally, adjusting to a family move as evidence that family moves can play a role in adjustment and development.

Pedersen and Sullivan (1964) added to this literature with their study of adolescents in military families. Twenty seven adolescents, aged 11-15, were recruited through a military psychiatric center at which they were being treated for outpatient disorders. Thirty children of comparable characteristics in the surrounding community who were not being seen for emotional or behavioral problems comprised the control group. All participants were members of a military family, therefore having experienced

mobility fairly regularly. Parents completed information about their mobility histories, as well as their attitudes toward relocation. Frequency of mobility was operationalized by the number of residences the family had lived at for one month or more since the participating child had been born. The authors hypothesized that the ‘disturbed’ adolescents would come from families with a higher mobility rate. However, this hypothesis was not supported, as the groups did not significantly differ on total number of moves.

Another of the initial studies that looked at the effects of mobility on children found few negative impacts (Barrett & Noble, 1973). One hundred and fifty-nine families, with children ages 3-18 years old, who had recently experienced an interstate move, participated in this study. Parents completed the Louisville Behavior Check List (Miller, Hampe, Barrett, & Noble, 1971) that assessed their children’s current adjustment, as well as questionnaires that inquired about parental beliefs about the impact of the move and parental attitudes toward the move. Overall, parents thought it would be difficult for their older children to change schools and make new friends as compared to younger children. However, these mobile offspring did not differ on the Louisville Behavior Check List when compared to a sample of non-mobile peers. The outcome measures in this study were completed by the parent, with no outcome variables reported by the children and adolescents.

Shaw (1979) extended the literature on mobility’s impact on emotional disturbances by examining the self-image descriptions of mobile adolescents. He hypothesized that interruptions in adolescents’ social environment could potentially harm their ability to hold positive views of themselves. Forty five adolescents, aged 13-17

years, who were being treated at a local health clinic, participated in this study. They provided information about their mobility histories by reporting on the frequency of moves during their lifetime. Participants were considered to be in the ‘high-move’ group if they had undergone five or more family moves, while participants who moved four or fewer times were listed as the ‘low-move’ group. Also, participants completed a questionnaire that listed sixty-five descriptive adjectives, and were instructed to choose the 20 adjectives that best described them. Adolescents in the high-move group chose significantly more negative adjectives to describe themselves as compared to the low-move group. In particular, the high-movers saw themselves as more insecure, complaining, critical, and inconsistent, and less intimate.

The influence of relocation on adolescents’ self-concept was further explored by Kroger (1980). Using a final sample of 136 eleventh graders, participants were largely middle-class and came from intact families. Participants reported on the recency and frequency of relocation, as well as the age span that most moves occurred in and the distance of the moves. Frequency of mobility was categorized by the number of moves experienced, while recency was categorized into six groups. Participants who moved were either classified as moving within the past year, between one to two years ago, between two to three years ago, between three to four years ago, between four and five years ago, and over five years ago. Self concept was conceptualized as the adolescents’ level of self acceptance. In support of the hypothesis, self concept and the distance of the move was found to be negatively correlated. The frequency and recency of moves were not related to self concept; however, the questionnaire did not assess if the moves required a change in schools.

In a study focused on depression in non-clinical populations, Gibbs (1986) examined external factors, including geographical mobility, which influence depression. One hundred and sixteen female adolescents from urban high schools in San Francisco participated. Nearly three quarters of the sample were African-American, with Caucasians, Hispanics, and Asian-Americans also participating. The Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) was used to assess depression, while a brief demographic questionnaire provided background information about the adolescent, including the number of household moves made by the adolescent. Adolescents who moved 'occasionally' (4-7 moves) or moved 'frequently' (8 or more moves) reported higher depression scores than adolescents who moved 'infrequently' (0-3 moves). Mother's occupation and the total number of problems also were related to depression. Also, Gibbs analyzed the data on African-American participants separately, finding that frequent geographic mobility, in addition to family, personal, financial, and general living conditions, were related to higher depression scores.

Simmons, Burgeson, Carlton-Ford, and Blyth (1987) assessed the impact of multiple life changes that occurred during a specified time period on three different aspects of youth functioning. Four hundred and forty seven sixth grade students participated in this longitudinal study, with data collected during participants' sixth and seventh grades. The five life changes that were assessed included pubertal change, early dating behaviors, major family disruption, transition to a junior high school, and geographic mobility. Geographic mobility was operationalized as no change in school or residence or as having moved to a new neighborhood or school in grades 6 or 7. The authors investigated the influence these life changes had on participants' self-esteem,

grade point average, and participation in extracurricular activities. Mobility in itself did not predict self-esteem. However, for girls, an increase in number of life changes, including geographic mobility, resulted in a significant, negative linear relationship with self-esteem, indicating that cumulative change during this developmental phase may have harmful effects.

Another study found evidence of the social effects that a move may have on children (Cohen, Johnson, Struening, & Brook, 1989). The final sample included 711 children, 667 of whom had been interviewed twice, with an eight year period in between interviews. At the first interview, the children were between the ages of one and ten years old. The authors assessed the prevalence of mobility with other risk factors, such as socioeconomic status and parental divorce. Mobility was assessed by mothers' reports of the length of time in the current house as well as the number of moves in the past eight years. Also included in the analyses were indices of psychopathology, anxiety, emotional disturbances and social isolation. In particular, children who moved more frequently were of lower socioeconomic status and had experienced parental divorce. Overall, mobile children did not experience higher levels of psychopathology than their non-mobile counterparts. However, the sample of older adolescents who had moved in the past year experienced much higher levels of social isolation than those adolescents who had not moved as recently.

Calabrese (1989) explored the relationship between the timing of mobility and adolescents' feelings of alienation. Two hundred and thirty nine high school students participated in the study. Of the participants, most were Caucasian, while the remaining participants were Black, Hispanic, and Cambodian. Over half of the participants (N =

133) were female, 105 participants were male, and one participant did not indicate his or her gender. The Dean Alienation Scale (Dean, 1961) was used to assess adolescents' feelings of alienation. The subscales consisted of isolation, normlessness, and powerlessness. The author did not report how mobility was operationalized or who reported on mobility histories, with the implication being that adolescents provided their mobility histories and the grade in which the moves occurred. Participants who moved during the elementary school years but not during the adolescent years had comparable levels of alienation as compared to those who had never moved. However, adolescents who moved since seventh grade reported higher levels of alienation and normlessness than non-movers. Also, those students who had moved since tenth grade reported higher levels of alienation, normlessness, and powerlessness than their non-mobile or not as recently mobile peers. Older adolescents reported higher scores on all three measures of adjustment than did younger adolescents.

In a study of relocation and well-being indicators, Brown and Orthner (1990) found evidence of the impact of frequent moves on females. Participants included seven hundred and twenty early adolescents, aged 12-14 years old, with one-third of the sample belonging to a military family. Over half of the sample was Caucasian (57.7%), with 15.2 % African Americans, and 13.4% Hispanics. The remaining 13.6% of the sample was of other ethnicities, with the majority being Asian American. Mobility was assessed by the recency of the previous move. Adolescents were categorized as having moved less than a year ago, a year ago, two years ago, and so forth, with the researchers rounding to the closest year. Also, the frequency of moves over the course of the adolescents' life was assessed. Self-esteem, life satisfaction, depression, and alienation

all were used to assess adolescents' well-being. For females, life satisfaction was related to both the recency and frequency of relocation, while depression was related to the frequency of moves. No effects were found for males. However, the authors noted that mobile adolescents had the lowest overall scores on personal well-being, but the findings were not statistically significant, which the authors attributed partly to measurement issues.

Looking specifically at the experiences that early adolescents face as new students, Vernberg (1990) focused on adolescent peer relationships. A control group of 37 early adolescents who had not moved in the past two years were compared to 36 early adolescents who recently had moved to a new community and begun the academic year at a new middle school, which was the same school as the control group, in seventh and eighth grades. Data were collected in November and the following May of that school year. Adolescents' contact with friends was measured by self and maternal reports, as well as observer ratings during lunch periods. The Friendship Interview (Berndt & Hawkins, 1984) assessed friendship qualities, while rejection was measured by the frequency with which certain actions (e.g., being pushed, hit, shoved, teased, picked on) occurred during a specified time period. Overall, mobile adolescents experienced less intimacy and sharing in their best friend relationship, and had fewer contacts with friends in general. Mobile boys experienced more instances of rejection than non-mobile boys, with no differences found for girls. Importantly, no significant time effects were reported, suggesting that mobile children's situation does not necessarily improve over the course of one school year.

In the nursing literature, Puskar and Ladely (1992) examined how adolescent females dealt with a recent relocation. Seventeen females, aged 14-17 years, who had moved within the past 3 to 18 months, participated in this study. Adolescents filled out a battery of questionnaires assessing their mobility histories as well as depression, anxiety, coping styles, adolescent problems, and life stress. These participants experienced high levels of sadness due to the move, and reported that leaving their friends was the part least liked about the move. Importantly, a portion of the participants felt that they did not possess the confidence in themselves to adjust to their new school. Although there was no control group, 18% were classified as clinically depressed.

Pittman and Bowen (1994) used Hill's ABC-X crisis model to examine the relationship between aspects of mobility and three types of adjustment, including personal adjustment. Using a sample of 882 adolescents ages 12 to 18 from military families, males and females were almost equally represented (52% and 48%, respectively). Three quarters of the sample were Caucasian, with 10.1% African Americans, and the remaining 14.5% belonged to other ethnicities. Personal adjustment was assessed by feelings of life satisfaction, alienation, boredom, and fear. Also, the authors examined external and family adjustment in relation to mobility. Included in the mobility variables were the adolescents' dissatisfaction with rate of mobility, difficulty leaving and making friends, and recency (in months) since the most recent move. The authors found relationships between the subjective feelings associated with the move and indices of adolescent adjustment. However, there was not a relationship between recency of the move, which is an objective indicator of mobility, and personal, external, or family adjustment. Instead, the recency of the move was related to the adolescents'

dissatisfaction with their mobility rate, and this in turn, was related to the adjustment indices.

Myers (1999) examined the impact that childhood mobility within the family exerts on social integration in adulthood. He tested two competing hypotheses: that migration should detract (by disrupting social ties) or enhance (by providing opportunities) social integration. Social integration was conceptualized as emotional integration and structural integration. Emotional integration was operationalized by “feelings of attachment to one’s community,” and structural integration was operationalized by the “number of close friends and number of close relatives.” Using a longitudinal, national sample of 2,033 married adults, the author constructed family mobility histories from 1980-1992 for their offspring. Six hundred and nineteen adult offspring (19-37 years old) of the participants were included as the sample of adults for this study. Mobility was measured by the frequency, recency, and age period of the move. In general, for both males and females, mobility during the ages of 10-15 years was significantly related to fewer friends in adulthood, while not moving at all was significantly associated with more friends in adulthood. The timing of the moves appeared to be more important than the total number of moves made during childhood. It is interesting to note that the most recent mobility period of 1992-1997 had no effect on adult’s social integration, suggesting that childhood mobility may exert a unique, lasting influence.

A recent study explored linkages between mobility and a variety of adolescent outcomes, including depression and social support (Norford & Medway, 2002). Four hundred and eight high school students participated in this study by filling out a battery

of questionnaires. Adolescents reported on their mobility histories in terms of frequency and timing of the moves. A move was defined as “any residential relocation during school-age years that necessitated a change in schools” (Norford & Medway). From this information, participants were grouped into nonmobile (0 moves), moderately mobile (3-5 moves), or high mobile (6+ moves). Recency was constructed by categorizing participants as ‘early pattern movers’ if most of their moves occurred before seventh grade, while those whose moves mainly occurred after seventh grade were considered ‘late pattern movers’. Overall, few consistent findings emerged. High mobility rates were only related to depression when not controlling for stressful events and this finding held particularly true for shy students. Neither the reason for relocation, nor the timing of the move, significantly affected adolescents’ reports of depression, social support, or participation in extracurricular activities. While reports of family cohesion in itself were not associated with any of the dependent measures, mothers’ who viewed relocation more negatively had adolescents with higher levels of depression. It is important to note that the authors raised questions about the accuracy of obtaining mobility histories from the adolescent, as compared to parental reporting.

Adam and Chase-Lansdale (2002) assessed the role that two types of familial disruption (parental separations and residential mobility) plays in adolescent functioning. Two hundred and sixty seven low-income African American adolescents, ages 15-18 years old, participated in this study. Adolescent residential mobility was measured by adolescent reports of the number of moves within the past five years. The authors’ performed a square root transformation on the number of moves to minimize skewness. Among other variables, the authors examined internalizing behaviors, including

depression, which was measured by the Center for Epidemiological Studies-Depression Scale (Radloff, 1977), and anxiety. Overall, adolescents' with higher rates of mobility experienced more adjustment problems as compared to adolescents with lower rates of mobility. The relationship between internalizing problems and adolescent mobility histories was partially mediated by the quality of adolescents' current environment, including the quality of their relationships with parental figures, kin, peers, and other sources of support.

Overall, many indices of adolescent adjustment have been examined in relation to geographical mobility. While the findings are mixed, there is evidence that the frequency and recency of moves negatively influences adjustment during adolescence.

Mastery

Mastery, defined by Pearlin and Schooler (1978) as the, "extent to which one regards one's life-chances as being under one's own control," has been identified in the literature as an important psychological disposition to understand across the lifespan. It often is closely associated with similar concepts including locus of control, self-efficacy, helplessness, and fatalism (Pearlin, & Pioli, 2003). In young children, the concepts of mastery and locus of control have been studied mainly in relation to achievement (Dweck, 1991). In adolescence and adulthood, it is most notably examined in the stress literature (Pearlin, 1989). Mastery is conceptualized as a potential buffer to stressful situations, in that it ameliorates the negative effects of stress on well-being and health. Conversely, when one holds a low sense of personal mastery, it can increase the negative effects of stressful situations.

Mastery was introduced into the stress literature by Pearlin and Schooler who developed the Pearlin Mastery Scale, which is commonly used to assess mastery across various studies (Pearlin & Schooler, 1978). Furthering the study of this concept, Pearlin, Menaghan, Lieberman, and Mullan (1981) examined how mastery can be affected by the stress process. The sample included 1,106 adults who were interviewed in 1972-1973 and re-interviewed four years later. The authors assessed the sources of stress and economic strains that the participants experienced, as well as self-esteem, mastery, social support, and depression. Self-esteem was measured by the Rosenberg Self-Esteem Scale (Rosenberg, 1965), mastery was measured by Pearlin and Schooler's mastery scale (1979), and depression was measured by a 10-item scale (Derogatis, Lipman, Covi, & Rickles, 1971; Lipman, Rickles, Covi, Derogatis, & Uhlenhuth, 1969). Social support was measured by asking participants how many close friends they could go to for help, with their choices ranging from zero, one, or two or more. Also, married participants indicated the degree to which they felt that they could share their thoughts with their spouse. Increased economic strain was related to decreases in both self-esteem and mastery. In turn, lowered self-esteem and mastery was directly related to an increase in depressive symptoms. Social support helped decrease the negative impacts of economic strain on self-esteem and mastery, but did not directly influence depression.

Since the seminal work of Pearlin and colleagues, mastery has been found to be related to a number of individual outcomes across settings and populations. In particular, mastery has been associated with indices of physical health, including the quality of life in chronically ill and disabled patients (Au, Li, Chan, Lui, Ng, Kwok, & Leung, 2003; Schieman & Turner, 1998), health management behaviors (DeSocio, Kitzman, & Cole,

2003; Skaff, Mullan, Fisher, & Chesla, 2003), overall health (Caputo, 2003; Lachman & Weaver, 1998), and eating disorder tendencies (Bulik, Wade, & Klender, 2001; Koo-Loeb, Costello, Light, & Girdler, 2000; Koo-Loeb, Pedersen, & Girdler, 1998). Feelings of mastery have been related to negative indices of mental health, including depression (Fine, Haley, Gilbert, & Forth, 1993; Korhonen, Laukkanen, Peiponen, Lehtonen, & Viinamaki, 2001; Vilhjalmsson, Krisjansdottir, & Sveinbjarnardottir 1998;), suicidal thoughts (Vilhjalmsson, 1998), psychological distress (Cotton, Burton, & Rushing, 2003), anger (Hobfoll, Johnson, Ennis, & Jackson, 2003), and anxiety (Shieman, 1999), as well as positive indices of mental health including self-esteem (Ryff, 1989), overall mental health (Bovier, Chamot, Perneger, 2004; Conger, Conger, Matthews, & Elder, 1999) and well-being (Fine & Kurdek, 1992; Ryff, 1989;). Further, mastery has been related to other quality of life indicators, including life satisfaction (Lachman & Weaver, 1998; Ryff, 1989), meaning of life (Shek, 2001), social support (Gray & Cason, 2002; Green & Rodgers, 2001), reemployment after a period of unemployment (Danziger, Carlson, & Henly, 2001; Vinokur, Schul, Vuori, & Price, 1999), and safe sexual practices and sexual satisfaction (Horne & Biss, 2005; Locke, Newcomb, & Goodyear, 2005). While mastery has been established as an important feature of positive well-being across contexts, a relatively small number of studies have examined overall feelings of mastery in adolescence.

Finch, Shanahan, Mortimer, and Ryu (1991) identified mastery over the environment to be important in understanding the influence of adolescents' work experience on their development and mental health. Participants included 962 adolescents, with the first wave of data collected in their ninth grade year. Follow-up

collection was completed during the participants' tenth grade year. Mastery was assessed by the 7-item Pearlin Mastery Scale (Pearlin, Menaghan, Lieberman, & Mullan, 1981). The authors did not report on the reliability of the scale. Instead, they presented the standardized lambdas for the items. Work experience included measures of job stressors as well as indicators of the training and opportunities available to the adolescents through their work. Various gender related differences were found; for example, regardless of having been employed or not, males exhibited higher levels of mastery than females. Participants with higher levels of initial mastery reported their jobs to be less stressful one year later. The authors noted this finding may indicate that adolescents with higher levels of mastery are able to deal better with their stressful jobs, therefore not seeing them as particularly stressful. Alternately, it may be that those with high levels of mastery actively pursue and obtain jobs that will produce little stress, therefore interfering less with their home and school lives.

Fine and Kurdek (1992) examined the role self-mastery plays in adjustment for a sample of 150 adolescents living in a stepfamily household. Mastery was measured by Pearlin and Schooler's (1978) 7-item self-mastery scale, with an alpha of .67. Adjustment was conceptualized as adolescents' reports of school achievement, health problems, drug usage, and self esteem, and parental reports' of the adolescents' social problems. Mastery was found to be positively associated with self-esteem and school achievement, while health problems, use of drugs, and social problems all were negatively related to mastery. Mastery was found to be more predictive of adjustment than the type of stepfamily within which the adolescents' lived.

Another study assessed the relationship between mastery and depression. Herman-Stahl and Petersen (1996) examined a sample of 458 early adolescents to determine the role between negative life events, depression, and indices of coping, including mastery. Mastery was measured by the Mastery and Coping scale of the Self Image Questionnaire for Young Adolescents (Peterson, Schulenberg, Abromowitz, Offer, & Jarcho, 1984). Based on their negative event score and their depression score, adolescents were divided into four groups: high depression/high negative events, high depression/low negative events, low depression/high negative events, and low depression/low negative events. Adolescents with lower levels of depression (non-distressed adolescents) had higher levels of mastery than adolescents with higher depression scores. This finding was true across negative life events categories.

Conger, Conger, Matthews, & Elder (1999) investigated the pathways through which economic hardship affects various adolescent outcomes. In particular, the authors examined how economic hardship may influence adolescents' feelings of mastery. Three hundred and seventy-seven adolescents in the Midwest were followed over ten years as part of the Iowa Youth and Family Project. A seven-item measure (Pearlin, Menaghan, Lieberman, & Mullan, 1981) was used to assess mastery at both data collection points. At Time 1, the alpha was .73; at Time 2, the alpha was .77. Adolescents' who perceived more familial economic hardship, which itself was influenced by economic strain, reported lower mastery over a two year period than those adolescents who perceived less familial economic hardship. Subsequently, this lowered feeling of control over their environment was related to more emotional distress, as characterized by depression and anxiety.

Hoffman, Cerbone, and Su (2000) investigated the relationship between the cumulative effects of stress and the increase in adolescent drug usage. In particular, they examined the extent to which personal mastery and self-esteem played a role in the pathway to drug use. Six hundred and fifty one adolescents (11-14 years old) participated, with data collection occurring once every year for four years. Mastery was measured by the 7 item Pearlin and Schooler's Scale (1978). The authors reported the Cronbach alpha of .876. Contrary to the authors' hypothesis, mastery and self-esteem did not moderate rates of stress and increase in adolescent drug use. However, the authors' noted that while mastery has been previously shown to buffer the negative effects of stress, it may be that mastery only buffers individuals on some outcomes, like depression, but does not safeguard them from other negative outcomes.

The influence of major depressive disorders (MDD) on various indices of self image, including mastery, was examined in a sample of 107 adolescents who were being seen at various outpatient psychiatric clinics (Korhonen, Kaukkanen, Peiponen, Lehtonen, & Viinamaki, 2001). Mastery was measured by a subscale of the Offer Self-Image Questionnaire (Offer, Ostrov, Howard, & Dolan, 1989). Single and recurrent MDD episodes were diagnosed in 63.5% of the sample, with 36.5% of the sample receiving no psychiatric diagnosis. Participants with MDD reported lower feelings of personal mastery than did participants who were not diagnosed with MDD. In particular, females with MDD had significantly lower feelings of mastery than females without MDD.

In a sample of 313 adolescents from immigrant families living in Portugal, Neto (2001) investigated the link between life satisfaction, demographic characteristics, and

psychosocial variables, including feelings of mastery. Mastery was assessed by a 6-item measure that was based on four other mastery scales. Demographic characteristics accounted for 6% of the variance in life satisfaction scores, while 25% of the variance could be explained by personal factors. In particular, mastery was found to be most strongly related to higher levels of life satisfaction in comparison to self-esteem, gender, and ethnic neighborhood.

Using data from the 1994 Canadian National Population Health Survey, Abernathy, Webster, and Vermeulen (2002) examined the role mastery plays in explaining the relationship between poverty and health in an adolescent sample (N = 1,759). No information on the scale used to assess mastery was provided by the authors. The concept of 'health' incorporated health and functioning, disease, and health care. Adolescents in lower income classifications scored lower on all measures of health related measures. Lower feelings of mastery were significantly related to adolescents' not reporting their health to be excellent.

Ben-Zur (2003) examined the relationship between mastery and three indices of subjective well-being in two different samples. In Study 1, participants included 97 university students, and 185 adolescents, ages 15-17 years old. In study 2, participants included 121 adolescents (ages 15-19) and both of their parents. The samples included only Jewish, Hebrew-speaking adolescents. The Pearlin and Schooler (1978) 7-item measure was used to assess mastery. For the combined samples, Cronbach's alpha was .75. Subjective well-being was comprised of measures of negative affect, positive affect, and life satisfaction. Mastery was found to be significantly and positively correlated with

positive affect and life satisfaction. Also, higher levels of mastery were related to more positive reports of adolescents' relationships with their parents.

Shanahan and Bauer (2004) examined the reciprocal pathways between mastery and negative life event stress. Data were collected from 777 adolescents during all four years of high school, and were subsequently followed until they reached age 26 or 27, with data collection occurring at three points post-high school. The Pearlin Mastery Scale (Pearlin, Menaghan, Lieberman, & Mullan, 1981) was administered at all 7 data collection points. The authors did not report the Cronbach's alpha for this scale. Four years post-high school, participants were asked to identify which, if any, of 18 negative life events (e.g., ending of relationship, being fired, serious financial trouble) they had experienced in the past five years and indicate when they occurred. The authors hypothesized that personal characteristics, such as mastery, would not only be affected by life events but would also contribute to the occurrence of these events. Complex patterns of the reciprocal effects of mastery and life event stress were obtained. Overall, for females, mastery during their senior year of high school was related to negative life events after high school. Subsequently, life event stress was related to mastery over the next five years. For males, a slightly different pattern emerged. Feelings of mastery during males' senior year of high school was related to negative events that occurred shortly after graduation, but were not related to the occurrence of negative life events over the longer term.

Overall, it appears that mastery over one's environment is an integral aspect of adjustment across adolescence and early adulthood. Higher feelings of mastery have been shown to be related to a variety of positive outcomes, while lower levels of mastery

are associated with negative outcomes. Taken together, these findings suggest that mastery is an important concept to understand when examining adolescent well-being. Unfortunately, with the exception of Hendershott (1989), research on mastery and mobility has not been conducted. This lack of attention is surprising because mobility inherently changes and disrupts ones' surroundings and could potentially affect feelings of mastery over the environment. Thus, the purpose of the present study is to examine the relationship between the frequency and recency of moves and feelings of mastery in a large, national sample of adolescents.

III. METHOD

Survey Overview

Data for this study were taken primarily from the second wave of the National Survey of Families and Households (NSFH), which assessed the life-history of participants and members of their family (Sweet and Bumpass, 1996). At Wave 1 (1987-1988), the original sample included 13,007 American adults, including 9,637 households. In each household, a main respondent was randomly identified and interviewed. The second wave was collected between 1992-1994, and included interviews with the main respondent (N = 10,007), spouses or partners, ex-spouses since Wave 1, proxy interviews with spouses or relatives if the main respondent was sick or had died since Wave 1, and randomly selected focal children (ages 10-17 years old and ages 18-23 years old) of the main respondent. For the purposes of this study, our sample includes focal children ages 10-17 years old during Wave 2. Adolescents provided information regarding their age and gender, as well as responded to a mastery scale. In addition, ethnicity information was obtained from the main respondent at Wave 1, and family mobility histories since Wave 1 were collected from the main respondent at Wave 2. Main respondents were interviewed in person, while children were interviewed via telephone.

Participants

During Wave 2, 1,415 adolescents ages 10-17 were interviewed as the ‘focal child young’ sample. However, because adolescents’ mobility histories were taken from the

main respondent data, it was necessary to include only those adolescents who resided in the household of the main respondent so that the mobility histories would be available ($N = 1,278$). Adolescents' who did not have the frequency of moves provided by the main respondent were excluded ($n = 3$). Also, adolescents' who did not complete the mastery scale were excluded ($n = 7$). The final sample included 1,268 adolescents. The mean age of participants in the sample was 13.3 years. Slightly over half of the sample was female (50.9%). Because ethnicity was not reported on by the adolescent in Wave 2, data for the adolescents' ethnicity was taken from the main respondents' report of their own ethnicity at Wave 1. Caucasian participants constituted 71.2% of the sample, 19.2% were African American, and 5.4% were Mexican American. The remaining participants (4.0%) were Asian American, Cuban, or other Hispanic, or American Indian. Two participants (.2%) did not have information on their ethnicity. For this study, adolescents were categorized as either Caucasian or non-Caucasian.

Measures

Frequency and Recency of Moves

Adolescents' mobility history was taken from information provided during the main respondents' interviews at the second data collection point. The main respondents were asked to report on their family's mobility history since Wave 1, which occurred in 1987-1988. They were asked if they lived at the same address, lived at a different address in the same city, or lived in a different city. For participants who responded that they had lived in another city since the previous interview, a series of questions were asked to construct their mobility history. Month and year of the first move after the previous interview were recorded. Then, they were asked if they stayed in this city or

moved to another city. If they responded that they moved to another city, the same mobility questions assessing mobility history were repeated until all cities and dates were accounted for, up to five cities.

Frequency of moves was operationalized by the number of city-to-city moves that the main respondent reported for the time period between Wave 1 and Wave 2 data collection. Possible responses for number of different cities the main respondent lived in ranged from 0-5. Over 27% of the sample ($n = 347$) reported at least one city-to-city move since the previous interview. For the 347 adolescents who did move, the mean total number of moves was 1.44 ($SD = .74$), with a range of 1 to 5 moves. The median for the adolescents who did move was 1 move. Adolescents were grouped as having made no moves, one move, two moves, or three or more moves. The category of three or more moves was collapsed from three, four, or five moves due to the small number of cases ($n = 26$). For the regression analysis, the frequency scores were centered by subtracting the mean of frequency from each person's score. This procedure was used to deal with the issue of multicollinearity when estimating an interaction between recency and frequency of moves.

The recency of the previous move was constructed by subtracting the month and year of the most recent move from the month and year of the main respondents' interview. If participants were unsure of the exact date of the move, but knew the year, they were counted as moving in January of the particular year. For the mobile adolescents who had reports of the recency of the previous move ($n = 342$), the mean number of months since the most recent move was 37.12 months ($SD = 20.65$), with a range of 1 to 80 months. The median for the recency of the previous move was 38

months. If the number of months coded was 12 or less, participants were designated as moving in the past year and received a score of 1. Otherwise, they were assigned a score of 0.

Mastery

Four items from the 7-item Pearlin Mastery Scale (Pearlin, Menaghan, Lieberman, & Mullan, 1981) were administered to the focal children to measure feelings of mastery over the environment. The questions included, 'I have little control over the things that happen to me,' 'I can do just about anything I really set my mind to do,' 'There is little I can do to change many of the important things in my life,' and 'Sometimes I feel that I'm being pushed around in life.' Participants were asked to indicate how much they agreed or disagreed with the statement on a scale of 1 (strongly agree) to 4 (strongly disagree). Scores were recoded so that higher scores reflect higher levels of mastery. Individual item responses were combined to provide a total score for the mastery scale.

For the 4-item scale, Cronbach's alpha for this sample was .41. Although low reliability is not unusual with a small number of items, the $\alpha = .41$ is surprisingly low given the face validity (i.e., similar content) of the items. However, it is important to note that low reliability will not produce spuriously high correlations with external measures. Therefore, if statistically significant findings are obtained, it would be an underestimation of the relationship between the variables.

Pearlin and Schooler (1978) and Pearlin, Menaghan, Lieberman, and Mullan (1981) did not report alphas for their mastery scale. Instead, they performed a principle components factor analysis which we did also. The covariance between the items

accounted for 37% of the variance. Two items loaded fairly strongly ('I have little control over the things that happen to me' [.74] and 'There is little I can do to change many of the important things in my life' [.72]). These loadings are consistent with Pearlin and Schooler's (1978) factor loadings of .76 and .70, respectively. The other two items loaded more modestly ('I can do just about anything I set my mind to' [.41] and 'Sometimes I feel I'm being pushed around in life' [.47]), which were similar to Pearlin and Schooler's loadings of .47 and .56, respectively.

IV. RESULTS AND DISCUSSION

In order to examine the relationship between mobility and mastery, correlation and regression analyses were conducted. Specifically, we assessed the relationship between the frequency and recency of moves and mastery, while simultaneously looking at the impact of age, gender, and ethnicity on mastery.

The first step was to examine the correlations among the variables of age, gender, ethnicity, recency and frequency of moves, and mastery. In terms of frequency of mobility, 73% of the adolescents did not move between Wave 1 and 2 ($n = 921$), while 27% of the sample moved at least once ($n = 347$). Of the 342 mobile adolescents with information on the recency of the previous move, forty seven adolescents (13.7%) moved in the past 12 months.

As can be seen in Table 1, feelings of mastery were positively correlated with the age ($r = .200, p < .001$) and ethnicity ($r = .073, p < .010$) of the adolescent. Older adolescents were more likely to report higher levels of mastery, and higher feelings of mastery also were associated with being Caucasian. In addition, feelings of mastery were significantly negatively correlated with the frequency of moving ($r = -.077, p < .006$), but were not related to moving in the past year ($r = -.053, p < .060$). The frequency of moves and adolescents' ethnicity were positively correlated ($r = .058, p < .038$). Caucasian adolescents were more likely to report that they had experienced a move. Also, moving in the past year was positively correlated with being older ($r = .068, p < .016$). Finally,

moving in the past year and frequency of moves were significantly correlated, with more frequent movers more likely to have moved in the past year.

Table 1

Correlation Matrix, Means, and Standard Deviations for Variables in the Regression

Variable	1	2	3	4	5	6
1. Age	—					
2. Gender ^a	-.003	—				
3. Ethnicity ^b	-.029	-.018	—			
4. Recency ^c	.068*	-.017	.046	—		
5. Frequency ^d	.047	-.024	.058*	.401**	—	
6. Mastery	.200**	-.040	.073*	-.053	-.077*	—
<i>M</i>	13.30	.49	.71	.04	.38	11.71
<i>SD</i>	2.25	.50	.45	.38	.71	1.75

^aMale = 1; Female = 0. ^bCaucasian = 1; non-Caucasian = 0. ^cDid not move in past year = 0; moved in past year = 1. ^dNo moves = 0; 1 moves = 1; 2 moves = 2; 3-5 moves = 3.

Note. Values for the frequency of moves are non-centered for the purposes of this table.

* $p < .05$ (2-tailed); ** $p < .01$ (2-tailed).

In order to more specifically assess the influence of age, gender, ethnicity, frequency, recency, and the interaction of frequency and recency on adolescents' feelings of mastery, hierarchical regression analyses were conducted as seen in Table 2. Taken together, these variables accounted for 5.8% of the variance in mastery. With regard to demographic characteristics, the age of the adolescents independently predicted feelings

of mastery. Being older was related to having more feelings of mastery. Although our data are cross-sectional, this result corresponds with Finch, Shanahan, Mortimer, and Ryu's (1991) finding that mastery increased with time across adolescence in a longitudinal sample. As adolescents grow older, they gain increasing levels of independence and the ability to make decisions in their life. In turn, they gain a sense of control as they begin to take the reigns of their own life. This sense of control is important because one of the developmental hallmarks of adolescence is to begin the process of separating oneself from the family of origin in order to become more independent.

Table 2

Hierarchical Regression Analysis Predicting Adolescents' Feeling of Mastery by Age, Gender, Ethnicity, and Recency and Frequency of Moves (N = 1,268)

	Variable	B	SE	β	t	p
Step 1						
	Constant	9.383	.304		30.894	.000
	Age	0.163	.021	.209	7.614	.000
	Gender (Male = 1)	-.135	.096	-.39	-1.408	.159
	Ethnicity (Caucasian = 1)	.327	.106	.084	3.078	.002
	Recency (Last year = 1)	-.371	.272	-.041	-1.366	.172
	Frequency	-.192	.074	-.077	-2.587	.010
Step 2						
	Constant	9.406	.304		30.936	.000
	Age	.163	.021	.209	7.610	.000
	Gender	-.134	.096	-.038	-1.394	.164
	Ethnicity	.322	.106	.083	3.026	.003
	Recency	.282	.483	.031	.585	.559
	Frequency	-.160	.077	-.064	-2.086	.037
	Recency X Frequency	-.496	.302	-.090	-1.638	.102

Note. $R^2 = .058$, $p < .001$ for Step 1; $\Delta R^2 = .002$, $p < .102$ for Step 2.

Furthermore, levels of mastery were influenced by one's ethnicity, with higher levels of mastery associated with being Caucasian. Although there is little literature on the relationship between mastery and ethnicity in adolescence, these findings are consistent with the work of Calabrese (1989). He found evidence that non-Caucasian adolescents experienced higher levels of alienation, powerlessness, and normlessness than their Caucasian peers. Thus, it is not surprising that individuals who face barriers due to discrimination may experience lower feelings of mastery as compared to people who do not have to deal with the consequences of discrimination.

In support of our hypothesis, the frequency of moving was found to influence levels of mastery, with more mobile adolescents experiencing lower levels of mastery. This finding makes sense, conceptually, as mobility in itself changes one's physical environment and all that is familiar. Mastery, by definition, involves the feelings of control individuals have over their environment. Having to adjust to new neighborhoods, new schools, and new peers on multiple occasions seems to undermine adolescents' sense of personal mastery. Thus, it appears that there is a cumulative effect of moving on adolescents' perceptions of mastery.

With regard to the impact of recency of moves on feelings of mastery in adolescence, moving in the past year was not predictive of mastery. This finding is contrary to our hypothesis that more recent movers would experience lower levels of mastery. It is consistent, however, with Hendershott's (1989) finding that the recency of a move did not necessarily influence feelings of mastery. In Hendershott's sample, for those who had only moved once or twice, the relationship was moderated by having moved in the past year. In order to determine if there was an interaction between

frequency and recency on mastery in our sample, we examined the interaction between moving in the past year and frequency of moves in the second step of the hierarchical regression. As can be seen in Table 2, moving in the past year did not interact with frequency's effects on mastery in our adolescent sample. However, it is important to note that there was a small trend in the expected direction. That is, there was a trend towards lower feelings of mastery for adolescents who moved more times and had moved in the past year. Importantly, under the condition of a 1-tailed test which would be appropriate for this condition, the finding would be statistically significant, indicating that moving in the past year may intensify the influence of moving frequently on mastery.

Overall, the findings from the current study provide further insight into the influence of mobility on one indicator of adolescent adjustment, mastery over the environment. This study is important as it distinguishes between two measurements of mobility, recency and frequency. A common thought among the general public is that moving more recently may be detrimental to adolescents' adjustment. However, that view was not supported, at least with regard to mastery. Instead, a higher total number of city-to-city moves were predictive of lowered feelings of mastery.

Strengths and Limitations

An important strength of this study is the sample. Few studies in the mobility literature have utilized large, national samples. Most mobility studies include small samples comprised of students from local school districts. In addition, these studies tend to focus on a particular age group (e.g., early adolescents), and often do not include multiple ethnicities. Our sample equally represented males and females, across a broad age range of adolescents, and included racially diverse participants. Furthermore, most

mobility studies obtain mobility histories from the adolescent. However, in our study, parents provided this information. Potentially, this data may be more reliable than reports from the adolescents, especially given the specifics of the mobility questions, including the dates of the moves. The large sample also allowed us to examine the influence of mobility on mastery while taking into consideration the effects of age, ethnicity, and gender. Thus, we can have more confidence in our findings regarding the link between frequency of moves and levels of mastery among adolescents.

Although the sample is strength of this study, it is also a limitation. At Wave 1, 13,007 main respondents were interviewed. Upon follow-up at Wave 2, 10,007 main respondents were re-interviewed. Our sample ($N = 1,268$) included adolescents, ages 10-17 years old, who lived in the home of the main respondent that was interviewed for Wave 2. Therefore, our sample is not as representative of the American population as the main respondents were in Wave 1. While 27% of our sample made at least one city-to-city move in between data collection points, we are unable to compare this figure to the rates provided by the U.S. Census. The national mobility rates include any change in residence, regardless of distance moved (i.e., across the street, across the nation), while our mobility frequency included only city-to-city moves. Therefore, we do not know if our mobility rate is representative of the general population.

Another limitation of our study is the low internal reliability of the 4 items from the Pearlin Mastery Scale. This low alpha was surprising given the face validity of the items. However, the factor loadings were similar to Pearlin and Schooler's (1978) findings. The low reliability likely resulted in an underestimation of the relationship

between mobility and mastery because of the amount of error contained in the mastery measure.

Also, it is important to note that the relationship between mobility and mastery is not causal, but correlational in nature. There may be an unidentified third variable that is influencing the relationship between mobility and mastery, such as socioeconomic status, family structure, or family dynamics. These variables may affect both the likelihood of moving and adolescents' feelings of mastery. These limitations partially reflect the use of secondary data. The sample was not ideal, nor were we able to ask other questions that were of interest, including family dynamics and the context in which the move occurred.

Future Research Directions

This study provides evidence that moving multiple times does exert a small, but reliable influence on adolescents' perceptions of their mastery over the environment. Thus, it is important that further research examine what it is about moving that influences feelings of mastery. In order to understand the relationship between mobility and mastery, as well as other indicators of adjustment, it is important to examine the context of the move and family dynamics that are occurring along with the move.

One potential factor that may help us to more fully understand the impact of mobility on adolescents is the reason for a move. Families move for a variety of reasons, with each move representing a unique event. For example, families may move as a result of divorce, job promotion or job loss, extended family circumstances, or for health reasons. Also, it may be that the move is a result of several, simultaneous factors (i.e., divorce, job change). Unfortunately, very little research has focused on reasons for

moving. The one study that examined the association between reasons for moving and adolescents' adjustment found no relationship, but the authors noted that adolescents may not be privy to the real reasons for a move or may not be able to correctly identify why their family moved (Norford & Medway, 2002). Thus, when examining whether reasons for moving influence the relationship between mobility and mastery, it is important that information on why a move occurred be gathered from both parents and adolescents.

Another important factor to consider is the quality of relationships within the mobile family. High quality marriages as compared to marriages characterized by conflict would provide different backdrops for a move, which could possibly affect how adolescents' deal with their new surroundings. In conjunction with the parents' marital relationship, the quality of the parent-child relationship is another factor to examine. Although adolescence is not the period of "storm and stress" that it once was believed to be (Hall, 1904), adolescents are experiencing developmental changes and are attempting to figure out who they are. Regardless of family mobility, adolescents' need the influence and guidance of their parents. In particular, involved parents may provide the adolescent with needed social support during a move and are likely to be important resources when adjusting a new city. Vernberg, Beery, Ewell, and Abwender (1993) found that in samples of recently mobile adolescents, mothers' who enacted more pro-social behaviors (i.e., talked with adolescents about friendships, met other adolescents' parents, enabled proximity to peers) had adolescents with more positive peer relationships over the course of the year. Thus, it is important that future research examine the quality of family relationships in order to further understand the link between moving and mastery.

As peers grow in importance during adolescence, establishing new peer relationships may be a key determinant of adolescents' adjustment in a new location. Mobile children and adolescents all have identified leaving friends and making new friends as the part of moving that they like the least (Puskar & Ladely, 1992). If adolescents' have been successful in the past in establishing positive peer relationships, they may be more likely to continue to be successful after a move. While making friends is relatively easy for some adolescents, many struggle with their social skills. Understanding previous peer relationships and adolescents' experiences with peers at a new school may shed light on their feelings of mastery and adjustment following a move.

Also, family members' perceptions of the move may be another factor to explore in attempting to understand the relationship between mobility and adolescents' adjustment. Norford and Medway (2002) found that while mobility was not related to adolescents' depression, mothers' higher negative feelings about the move were related to adolescents' feelings of depression. This finding is consistent with the ABC-X model that describes the importance of subjective evaluations of the stressor, including the definitions or expectations of the stressor. Understandably, the perceptions of the move would likely be related to the reasons for the family move. However, even under unfavorable circumstances, the parents' positive outlook may influence adolescents' feelings of mastery. Conversely, in a position of a seemingly positive move, a parent's discontent with the move may negatively influence the adolescents' adjustment.

The implications for this study include further understanding of adolescents' adjustment in relation to moving. Given that low feelings of mastery have been related to a number of negative outcomes in adolescence, it is important for parents, school

officials, and mental health professionals to recognize that a frequent mover may be vulnerable to these lower feelings of mastery. Hopefully, further research will begin to examine, in a more complex fashion, the multiple factors that are likely to influence adolescents' adjustment following a family move.

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