

Spring 1997

# Psychosocial and sociostructural determinants of mastery: The context of age and disability

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**PSYCHOSOCIAL AND SOCIOSTRUCTURAL DETERMINANTS OF  
MASTERY:  
THE CONTEXT OF AGE AND DISABILITY**

**BY**

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BA Millersville University of Pennsylvania, 1990  
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**DISSERTATION**

**Submitted to the University of New Hampshire  
in Partial Fulfillment of  
the Requirements for the Degree of**

**Doctor of Philosophy**

**in**

**Sociology**

**May, 1997**

**UMI Number: 9730843**

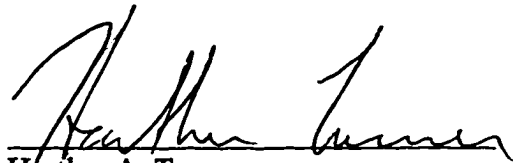
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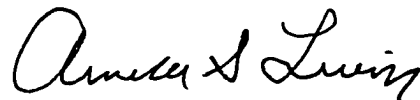
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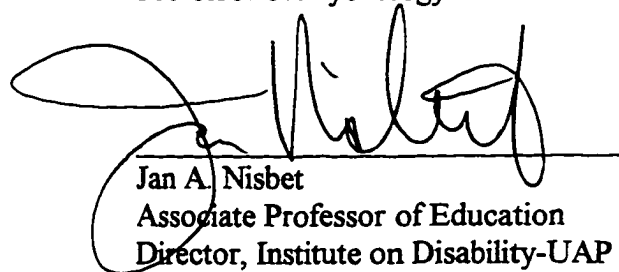
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## ACKNOWLEDGMENTS

I would like to thank my family for their support and encouragement through all of these years of graduate school. In addition, I am grateful for the advice and direction provided by those on my dissertation committee, Larry Hamilton, Arnold Linsky, Ellen Cohn, and Jan Nisbett. Also, I am very lucky to have had the opportunity to spend these past six years sharing ideas, frustrations, and successes with my fellow students, including Sean Lauer, Carrie Yodanis, Peggy Walsh, and Terry Camacho—a special thanks! Good friends and colleagues including (but not limited to) Dawn Paulinski and Tom Anderson at the Division of Health Care Finance and Policy offered fresh ideas and “outsider” insight. Finally, I owe more than “many thanks” to my mentor, Heather Turner. Without her guidance, support, and humor...this project would not have been such a valuable and enjoyable learning experience.

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## ABSTRACT

### PSYCHOSOCIAL AND SOCIOSTRUCTURAL DETERMINANTS OF MASTERY: THE CONTEXT OF AGE AND DISABILITY

by

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University of New Hampshire, May 1997

The “active” and “potent” self has held a special interest to philosophers, psychologists, and sociologists since the inception of those disciplines. The present research uses sociological perspectives on social comparison and reference group theory to provide a framework for understanding the various dimensions of self-process in the context of age and disability. Specifically, this research examines associations between age, disability, and social status indicators as they impress upon personal agency or mastery.

This study uses secondary data that includes respondents aged 18 and over who resided in any of ten counties in Southwestern Ontario and were part of a two-wave panel study from 1981/82 to 1985/86. Only data from the second wave are included in analyses. Respondents were coded as “disabled” if they answered “yes” to the following question: “Do any adults in the household have any physical health condition or physical handicap that has resulted in a change in their daily routine or that limits the kind or amount of activity they can carry out? (For instance: work, housework, school, play recreation, shopping or participation in social activities or community activities.)” Of the total, 730

respondents reported some kind of impairment; a comparison group of 850 matched on age and sex did not have impairment. The age range of the sample was from 18 to 91 years, with a mean of 56 years. Sixty-six percent were female. Sixty-five percent were married, ten percent were single, sixteen were widowed, and nine percent were divorced or separated. Essentially all of the respondents were white.

Multivariate regression analyses reveal complex patterns in tests of several alternative hypotheses. Among the central findings, age and disability are negatively associated with mastery. The interaction of age and disability is significant such that disability is more negatively associated with mastery with increasing age—but this pattern is only observed among men up to age 60. Adjustment for socioeconomic variables significantly reduces the negative age-mastery and disability-mastery associations. In addition, the benefits of education for mastery are significantly greater for disabled women. Other findings indicate that the benefits of social support for mastery are undermined by disability—but a significant pattern is only observed among women. The results are examined in the broader context of age and disability research and highlight the relevance of gender in these processes. Implications of the findings for stress process research, health practitioners, and social policy makers are discussed.

## INTRODUCTION

Self and identity have held a special interest to philosophers, psychologists, and sociologists since the inception of those disciplines. Scholars like George Herbert Mead and C.H. Cooley, the early interactionists in the 1920s and 1930s, and those currently involved in social research on self processes, have viewed the self as a social process grounded in language, communication, and social interaction. Conceptually, the self-concept includes a wide array of one's reflexive activity or the sum of all the thoughts and feelings one has about one's self. Its primary consistency involves various identities, attitudes, beliefs, values, motives, and experiences, along with their potency components, like mastery (Gecas and Schwalbe, 1993).

American social philosophers and theorists have long had an interest in self-potency personality traits because of their traditional embeddedness in the individualist ethos of American culture. Modern social science, in particular social psychology and medical sociology, have developed a literature around the outcomes and determinants of these traits, most notably those of self-efficacy (Gecas, 1989) and mastery (Pearlin et al., 1981). In anthropology, this concept is referred to as "man-nature orientation" or "fatalism" (Mirowsky and Ross, 1989). In sociology, beliefs about personal control have fallen under different titles, including powerlessness, personal efficacy (Kohn, 1972), mastery (Pearlin et al., 1981), and fatalism versus instrumentalism (Wheaton, 1980).

## Purpose and Rationale

Broadly speaking, the central purpose of this dissertation is to investigate potential determinants of the sense of mastery, particularly in the context of age, disability and functioning. Pearlin and Schooler (1978; 5) define mastery as "the extent to which one regards one's life chances as being under one's own control in contrast to being fatalistically ruled." In the section on conceptual definitions, I expand on the notions of mastery and self-efficacy and show how they all share conceptual ground with the notion of personal control. Throughout this work, I employ the terms mastery or the sense of control interchangeably with the same intended meaning.

What differentiates this research from other studies, such as recent work by John Mirowsky (1995), is the specific focus on disability. Disability and functional status are core subject areas of medical sociology and interest in them as components of the aging process is increasing as the over-55-year-old population comes to represent a greater proportion of the whole. As the literature review will discuss, the experience of disability creates permanent changes in ability to perform daily living activities. Verbrugge, Reoma, and Gruber-Baldini (1994; 97) suggest that "dysfunctions associated with chronic conditions tend to be dynamic, changing markedly as pathology and symptoms advance or retreat, and as interventions fail or succeed." These notions have potentially powerful implications for variations in self-concept, particularly mastery. While disability generally increases with age, it is possible that sociostructural and psychosocial influences on mastery vary as disability and functional limitations change, regardless of age. Influences on both non-disabled and disabled psychosocial experiences, within the context of age, are



investigated in this research. Moreover, Rodin (1986a, 1986b) suggests the causal dynamics between education, impairment, and sense of control are not yet clear. The present research attempts to clarify and expand our knowledge about these dynamics. Broadly speaking, its purpose is to contribute new knowledge about the dynamics of aging and personal resources to many applied and academic disciplines within social psychology, medical sociology, public health, and gerontology.

### Hypotheses

The broad central aim of this research is to compare the age-mastery association among disabled and non-disabled populations. To test for potential associations, the following general hypotheses are examined. They include direct, indirect and interaction effects that involve the following variables: mastery, age, disability, level of limitations, education, and social support. The following section briefly introduces the reader to the general hypotheses tested in the present research. A detailed rationale for these hypotheses is provided in the literature review section.

#### *Double-Disadvantage vs Reference-Normative Comparison (Disability)*

The Double-Disadvantage vs Reference-Normative Comparison hypotheses tests an age by disability interaction. The former hypothesis suggests that the relationship between age and mastery depends on one's status of disabled or non-disabled such that the association will be more strongly negative among those with a disability. Both disability and age are associated with lower mastery. The rationale for the double-disadvantage is

that the negative effects of age and disability jointly present obstacles that are detrimental to self-potency variables like mastery.

The Reference Normative hypothesis suggests that the relationship between age and mastery will be more strongly negative among those without a disability. As age increases, the differences in mastery between disabled and non-disabled will converge. The rationale is that normative opportunities to gain status and other social rewards that emerge with age (education, physical accomplishment, etc.) may be differentially distributed by impairment status. Disabled have lower levels of these self-potency enhancing opportunities. Therefore, younger disabled may compare themselves to nondisabled counterparts and recognize deficits in across salient aspects of personal identity. Hence, the negative effect of age on mastery should be weaker among those who are not disabled and the differences in mastery for disabled versus nondisabled should be most apparent at young ages.

#### *Double-Disadvantage vs Reference-Normative Comparison (Functional Limitations)*

The Double-Disadvantage vs Reference-Normative Comparison hypotheses test an age by limitations interaction. The relationship between age and mastery depends on the level of functional limitations such that age matters more negatively for mastery at higher levels of functional limitation. Both disability and age are associated with lower mastery. The rationale for the double-disadvantage is similar to that for disability: the negative effects of age and limitations jointly present obstacles that are detrimental to self-potency.

The Reference-Normative hypothesis states that the relationship between age and mastery is still negative, but the disparity between low, medium, and high limits is the largest among younger groups and diminishes in late-life. The rationale for the reference hypothesis is again the same for the interaction of disability and age. Greater functional limitation may create lower levels of these self-potency enhancing opportunities. If that is true, younger individuals with limitations may compare themselves to those with fewer functional limitations and realize the deficits in various psychosocial aspects of their lives. Hence, the negative effect of age on mastery should be weaker among those with fewer limitations and the limitations gap in mastery should be greatest for persons at young ages.

#### *Reflected Physical Impairment*

Consistent with John Mirowsky (1995), this hypothesis states that the increasing level of functional limitations among older cohorts is the culprit, at least partly, in explaining the negative associations between age and mastery. This would suggest an indirect effect of age on mastery through functional limitations.

#### *Hypothesis of Status Resource Disadvantage*

This hypothesis suggests that the individual effects of disability and age on the sense of mastery is actually due to the fact that disabled and older cohorts have lower education, lower income, and are less likely to be employed. That is, there is an indirect effect of disability and age on mastery via their disadvantage in these status resources.

### *Cultivated Resourcefulness vs Undermined Benefits*

The cultivated resources hypothesis suggests that education cultivates particular intellectual and psychosocial resources that reduce the negative consequences of age, disability, and functional limitations on mastery. This suggests that the negative effects of age, disability and functional limitations on the sense of mastery should be highest among those less-educated cohorts. In contrast, the undermined benefits hypothesis suggests that physical decline effects us all eventually. If this pattern exists, then any advantage educational attainment has for one's sense of mastery diminish as the human body approaches the later years of life. So while education may generally enhance mastery, impairment may undermine its influence.

### *Social Resourcefulness vs. Social Dependency*

The social resourcefulness hypothesis suggests that social support is positively associated with mastery, but the effect is conditioned by age, disability and limitations. In this case, we would expect an interaction whereby the regression lines by age, disabled and impairment levels diverge with greater social support. That is, social support should enhance mastery more among the older, disabled, or greater impaired because of the social resources it provides. Alternatively, the social dependency model suggests that social support is positively associated with mastery, but increased age, disability status, and limitations diminishes the positive effect of social support on mastery. The rationale for this hypothesis is that support is really indicative of greater loss in functional capacity; that is, others are "filling in" where the individual can no longer "go it alone" for one reason or

another. In this case, we should notice that greater level of support may actually undermine the sense of mastery for those with disability, limitations or older age. The interaction terms and corresponding regression lines would reveal the age, disability and limitation differences in mastery are largest at higher levels of support. The same rationale is used to test both the resourcefulness versus the dependency models for social support and social participation variables.

### Overview

Chapter 1 examines the role of self-potency in the tradition of sociology to provide a conceptual context for investigating mastery. The chapter concludes with a review of literature about the role of mastery in health and well-being. A review of previous findings provides considerable rationale for a more detailed investigation of mastery, particularly in the context age, chronic conditions, and functional impairment. Chapter 2 elaborates on the age-mastery association with several sections that explore the potential explanatory factors in the age-mastery association. Chapter 3 describes the methodology of the present research. Chapter 4 shows the results of the hypotheses tests. Chapter 5 discusses the main findings and implications for policy and future research directions.

# CHAPTER 1

## BACKGROUND AND LITERATURE REVIEW

### Conceptual Definitions

The idea of mastery has its roots in the concept of alienation. Mirowsky and Ross (1989), in their work on social patterns of distress, discuss Seeman's (1959) classic definition of mastery in terms of expectations and beliefs about one's connectedness to dimensions of the market and work processes. Seeman's typology of the forms of alienation described five main concepts: powerlessness, self-estrangement, isolation, meaninglessness, and normlessness. One of Seeman's hopes was that future scholarly work would uncover the social conditions that produced these forms of alienation (which he actually derived from Karl Marx's conception of the relations of production), as well as their consequences for both individuals and societies.

The sense of powerlessness is the highest form of alienation. Seeman (1959; 784) defined it as "the expectancy or probability, held by the individual, that his own behavior cannot determine the occurrence of the outcomes, or reinforcements, he seeks." In contrast to alienation and powerlessness is the sense of control, or the belief that one has the ability to master or effectively alter one's environment (Ross and Mirowsky, 1992). The concept of powerlessness takes several forms depending upon the perspective. Pearlin and Schooler (1978; 5) state that mastery "concerns the extent to which one regards one's life chances as being under one's own control in contrast to being fatalistically ruled."

Caplan (1981; 413), in a more lengthy definition, explains that mastery is action that "mobilizes the individual's internal and external resources and develops new capabilities in him that lead to his changing his environment or his relation to it, so that he reduces the threat or finds alternative sources of satisfaction for what is lost." Other terms have been used for mastery, including self-efficacy referring to people's "assessment of their effectiveness, competence, and causal agency" (Gecas 1989; 292), the "sense of coherence" (Antonovsky, 1987), and "hardiness," (Kobasa, 1979). A common theme of these definitions and concepts involves the notion that actors have a sense of control or manageability over their social environment and the outcomes that they experience. Turner and Roszell (1994; 5) note that "despite the differences in emphasis, these constructs appear to represent alternative labels for basically the same personal attribute or resource."

It is important to note that researchers investigating the sense of control often approach the topic with several assumptions. The first derives from Western cultural notions that holds the individual as central in rational action. The second is that high degrees of control are optimal if human potential is to be achieved (Baltes and Baltes, 1986). I raise these points to inform the reader that this research recognizes these ideas, but does not seek to challenge them.

### Mastery and Sociology

Why is mastery so important in the lives of individual actors, and hence, for social science research? Philosophical notions about self-reliance and mastery permeated 18th and 19th century literature. From the writer Ralph Waldo Emerson, to one of sociology's

founders, Max Weber, there was a strong belief in individual autonomy, self-reliance, and the resistance against comfortable conformity and adaptation. While those discussions and debates centered on the relationship between the individual and society or the individual and the nation-state, there is an historical lineage of mastery in the ethos of Western, particularly American, culture (Diggins, 1996).

Max Weber, often cited for his grand theories and typologies, believed that the truth is embedded in the ordinary details of everyday life. His exploration of China examined the particular mentality that grew out of the Confucian worldview. Confucianism implied an 'adjustment to' the world, while in sharp distinction, Protestantism suggested 'mastery over' the world. The issue of control found its way into Weber's analyses of religion and social structure, particularly in his exposition on the complex and intricate linkages between the macro-social and the personal or psychological. In Weber's case, as Diggins (1996; 109) notes, it was religious culture that contained the tenets that determined levels of perceived control.

That humankind is the free agent of its own confinement to the routines of institutionalized existence is a Weberian insight with Emersonian overtones. From Puritanism to Capitalism there occurs a 'fall' into the processes of rationalization, which in turn result from the will to mastery and control, not of the self but of the world.

More recently in the early 20th century, George Herbert Mead pioneered and refined much of the micro-level social psychological work on the self, particularly with his notions of the interplay between the mind, self, and society. Mead, as well as C.H. Cooley, had an interest in the development of identity and self-processes in the context of societal forces and was instrumental in theorizing about the mechanisms by which macro-level



processes influence meso- and micro-level phenomenon. Under the general theoretical framework provided by Cooley and Mead, researchers have investigated the various components of the self, including the self-evaluative and self-potency elements of identity processes. This focus on the individual as an active and creative participant in his or her social environment is rooted in the symbolic interactionism tradition. Mastery, as a part of self-concept development, is an important part of this tradition in sociology and psychology.

In the literature on aging, the distribution of mastery by age is a central empirical issue (Mirowsky, 1995). As later sections will describe, both aging and disability are dynamic processes characterized by many psychological, biological, and social changes. From a sociological perspective, Mirowsky (1995) focuses on the social structural variables that potentially explain the age-mastery association. Our perceptions of control are influenced by the social organization of our lives and the status positions we maintain. Stratifying variables like education, employment, and income are structural variables that are instrumental in the sense of control processes. Ross and Mirowsky note (1992; 218), “according to sociological theory, such perceptions [mastery] are shaped by objective structural conditions. Lack of autonomy on the job, inability to achieve goals, restricted opportunity, economic dependency, and role overload all may create a sense of powerlessness.” They also suggest that within sociological theory, perceptions of mastery are influenced by objective structural conditions. The sense of economic dependency and constricted employment opportunities, for instance, can generate feelings of powerlessness. The relevance of social structure for self-processes will be elaborated on in

greater detail later. For now, it is only important to introduce the notion that mastery, while conceptually viewed as an individual psychological process, is linked in intricate ways to the larger social environment.

Despite the abundance of work that focuses on the cognitive processes involved in mastery, scholars continue to cite the macro-level social structural and social psychological factors as important for self-potency measures such as mastery (Mirowsky, 1995; Gecas and Schwalbe, 1995). Similarly, the micro-level social processes that potentially change over the life course, including social networks and social support, are also relevant in the present study. There is a solid literature that suggests mastery, for example, is an important variable in the stress process. Turner and Roszell (1994) offer two main reasons for the growing interest in personal resources like mastery in stress research. The first is mastery's potential moderating influence in the relationship between stressors and mental health status. The association between stress and mental health has been disappointingly low in many studies. Part of this may be due to the failure of researchers to consider the relevance of psychosocial resources like mastery, self-esteem and social support in moderating the effect of stressors on outcomes.

A second reason for the recent and expanding interest in personal resources in the stress process involves the assumption that the availability of such resources is associated with social stratification. That is, there is reason to consider the systematic patterns across various risk statuses, including those created by age, gender, marital status, educational standing and income levels (Turner and Roszell, 1994). For instance, Smith (1968) suggests that as we experience successes and failures in daily life, we come to understand

that there are limits in the social environment on the extent to which we can be competent. Indeed, "competence" varies in the population in relation to stratification in different spheres, including social differentiation according to power, opportunity, respect and resources. While Smith considers power a crucial element, he specifically acknowledges control over the day-to-day contingencies in one's own life, not power over larger social institutions.

Sociostructural variables may be important for mental health, in part, because of variation in the quality and distribution of personal resources or traits associated with instrumental or socio-emotional adjustment. Turner and Roszell (1994; 4) note "despite the prominence of this hypothesis or assumption and a large literature suggesting the health significance of certain personal resources, surprisingly little is known about the social distribution of such resources." Gecas (1989) argues that, while themes of behavior and agency have a solid footing in the sociological tradition, the topic of mastery is infrequently examined explicitly. The present research seeks to enhance and elaborate on the general base of knowledge already established in this area with a specific focus on understanding and explaining the age and mastery association, particularly in the context of disability. The focus of this dissertation explores the micro-level themes to a greater extent, with an additional interest in the role of status factors in these hypothesized associations.

## The Importance of Mastery

John Mirowsky (1995) raises the question: "Do older Americans feel less in control of their own lives than younger adults?" Some research suggests there is a negative association between age and mastery (Pearlin and Schooler, 1978). Before addressing that question directly, it is necessary to consider the implications of variation in levels of perceived mastery.

A substantial amount of evidence suggests an important link between mastery and health. The general finding is that high mastery has positive consequences for health, functioning and well-being (Gecas, 1989). Low mastery tends to have opposite effects. Not only has mastery been found to be important in health-related prevention and overcoming addictive behaviors, it also plays an important role for those persons facing hardships. Some researchers suggest that mastery matters for distress and negative mental health outcomes because those who possess higher levels of personal control may also maintain skills that allow them to better resolve difficult circumstances and remain resilient in the face of adverse events (Turner and Roszell, 1994; Gecas, 1989; Pearlin et al., 1981). Mirowsky and Ross (1989) suggest that among all the perceptions of self and society, the sense of personal control is probably the most influential in its effect on distress. Others note that those with low control tend to respond to stress with greater psychiatric or physical symptomology (Kobasa, 1982; Pearlin et al., 1981; Wheaton, 1983). Moreover, Langer and Rodin (1976) found that with certain interventions, the sense of mastery can be enhanced and assist individuals to handle life's daily challenges and stressors.

Many studies examine the power of mastery as an independent variable. These studies show that higher mastery is related to the initiation of preventive care, early treatment seeking, optimism about treatment efficacy, fewer incidence of sickness, less dependence on doctors (Seeman and Seeman, 1983), greater social learning and flexibility (Seeman et al., 1988), problem-focused coping (Thoits, 1987), higher health ratings (Ross and Bird, 1994), quicker recovery from illness or injury (Schwalbe and Gecas, 1988), greater adherence to difficult medical regimens (O'Leary, 1985), changes in immune system (Gecas, 1989), selection in and out of stressful situations (Thoits, 1984), greater independence and persistence in adolescents with disabilities and lower depression and depressive symptomology scores (Seligman, 1975; Wheaton, 1980; Turner and Noh, 1988; Turner and Wood, 1985). Most notably, mastery is important in moderating the effect of stressors on mental health outcomes to reduce individuals vulnerability to stress (Pearlin et al., 1981; Pearlin and Schooler, 1978).

Much of the attention on mastery in the stress literature concerns coping. Coping resources are defined as social or personal qualities that individuals access when faced with stressors. Social support is the coping variable considered by medical sociologists and others. The two other personal coping resources most frequently investigated by researchers are mastery, and to a lesser extent, self-esteem. It is assumed that these personal resources influence the nature and scope strategies that individuals employ against stressors. People with a stronger sense of mastery may be equipped with the necessary psychosocial resources to prevent negative events or chronic difficulties (Thoits, 1995).

As situational demands arise in daily life, individuals often employ coping strategies. These strategies, often behavioral and/or cognitive in nature, can help one deal with the demands. Coping efforts may address the actual demands (problem focused strategies) or they may be aimed at the emotional reactions that accompany stressors (emotion-focused strategies). Persons with low mastery are more likely to employ emotion-based, passive strategies, whereas those with a high sense of control are likely to engage in more active, problem-focused responses. Given that perceived mastery is consistently found to buffer the negative health impact of stress, scholars have argued that the sense of control is likely to increase the employment of efficacious coping tactics. The nature of the distribution of mastery, across various social statuses, may possibly account for the observed demographic variation in emotional vulnerability to stressors (Thoits, 1995).

Gecas and Schwalbe (1993) suggest that efficacious action is one basis for what they term "inner self-esteem." That is, as one experiences their self as active in facilitating events in their social world, inner self-esteem develops. In the face of obstacles, one's sense of self-competence arises in conjunction with the active effort to overcome obstacles. The "inner" aspect in this context involves the sense of mastery or potency within the context of the "outer" social environment. Efficacy or the sense of control emerges from feedback concerning the success or failure of attempts to handle the obstacles. The result of failure includes perceived deficits in the sense of control and increased depressive symptomology. The processes of aging and disability may pose similar obstacles for individuals, and therefore, may influence mastery in important ways.

The empirical and theoretical framework outlined above highlights the importance of mastery for mental and physical health. In addition, it raises a central question about the distribution of mastery in the context of chronic physically limiting conditions and advancing age. The aim of this dissertation is to understand these processes. The first question to be addressed in the literature review involves the nature and strength of the age-mastery association.

## CHAPTER 2

### AGE, DISABILITY, AND THE SENSE OF MASTERY

#### Conceptualizing Age

It would seem that conceptualizing age is a simple task—the number of years since respondents' birth. Age as a social variable, however, provides social scientists with a means for understanding the complexity in social and cultural processes that occur across the life course. For instance, age is a powerful indicator of social stratification. In addition, various dimensions of psychological, social, and biological development are age-referent. That is, within the construct of chronological age, all societies maintain various expectancies about developmental processes and the sequence of status events as they contribute to our notions of a “socially prescribed timetable.” Conceptually speaking, therefore, a deeper consideration of the meaning of age is essential (Neugarten, 1996).

With trends that indicate an expanding proportion of the population older than age 65, the demarcation of the age-structure and the period of “late life” has become politicized. For instance, the definition regarding later life is ambiguous. Is it defined by chronological age, functional age, or in terms of significant life events like retirement or widowhood? Since the onset of World War II, the official marker of later life has been 65 years in the United States and most European countries (Henrard, 1996). The timing and transition of “normative events” over the life course also contribute to conceptualization of age. For example, the periods of young adulthood, middle age, and late adulthood are



generally represented with the age groupings 18-44 years, 45-64 years, and 65 or older. According to Gordon (1971), these age categories approximate the life stages of young adulthood (19-29) and early maturity (30-44), full maturity (45 to retirement) and retirement (65 plus). Recent recognition of the fact that the later-life span may extend for twenty or more years beyond age 65 has led policy makers and elder-care professionals to propose inclusion of functional age in the definition. The new periods are defined as “young elderly” (under 75) and the “old elderly” (over 75). The “oldest old” are considered those over age 85 and are marked by degrees of functional capacity.

#### The Age-Graded Life Course: Social and Biological Change

In the present study, age is employed as a continuous variable in statistical analyses. Conceptually speaking, however, the configuration of physical and social status factors that define the period of adulthood before and after age 60 provides theoretical justification for the analytical focus on age-graded and age-referent expectancies. The pre-60 period is one indexed by various advances in social status factors like educational, occupational, and financial attainment, as well as initiation into marital and family roles. The period of later-life, beginning around age 60, is marked by changes in family experiences like empty-nest or widowhood, as well as occupational changes like retirement and possible loss of income (Neugarten, 1996).

The idea that people generally “get better with age” implicates incremental advances in social statuses. But does it also pertain to psychological variables like mastery? Scholars who take a lifespan perspective note that the existential priorities that

exist in the first half of life involve the cultivation of a socially competent self where achievement in various spheres of life is the main priority (Neugarten, 1996). This suggests that the priorities (social and physical) of the early adult years are different than those in later-life. The linkages between psychosocial processes like mastery to social and physical changes over the life course requires a discussion of age-referent and normative expectancies about development.

An important question that the current research asks is why might older adults be expected to have lower mastery. One could equally argue that older persons are expected to have greater social status resources. Hypothetically speaking, those in better statuses positions (i.e., highly educated, solid income, gainfully employed, married, highest functioning) might actually experience gains in mastery with advancing age. An individual in this scenario might feel as though they have “conquered the world.” Such feelings could be reflected in a higher sense of self-worth and potency.

Some have described aging as the process of growth and decline. However it is described, aging is no doubt a dynamic process (Baltes and Baltes, 1986). Within this process, our sense of event-time and timing emerges. By middle age, Neugarten (1996) argues, adults possess a refined capacity for introspection and reflection. Past events and those that occur during this period are reflected upon in terms of their timing and expected nature. The following passage accurately depicts Neugarten’s influential ideas about age-graded life course events and the centrality of time in adult psychosocial development (90):

There is another way in which issues of time and timing are of central importance in the psychology of adulthood: namely, the ways in which the individual evaluates himself in relation to socially-defined time. Every

society is age-graded, and every society has a system of social expectations regarding age-appropriate behavior. The individual passes through a socially-regulated cycle from birth to death as inexorably as he passes through the biological cycle; and there exists a socially-prescribed timetable for the ordering of major life events: a time when he is expected to marry, a time to raise children, a time to retire. Although the norms vary somewhat from one socioeconomic, ethnic, or religious group to another, for any social group it can easily be demonstrated that norms and actual occurrences are closely related.

In our society, bodily aging has evolved as a cultural indicator of the entire aging process. Henrard (1996) argues, to the contrary, that aging should be viewed as the intricate and complex interaction of biological, psychological, social and existential aspects. Indeed, scholars have implicated environmental and biological factors as the culprits in the decline in perceived and actual mastery across over the life course (Rodin and Timko, 1992). Socio-environmental factors associated with later periods of the life course include the loss of roles, friends, family, or a shift in norms and expectations can potentially effect one's sense of control (Rodin, 1986a). In addition to shifts in social role experiences, it is widely documented that this period in the life course is marked by changes in physical function (Mirowsky, 1995). Biological changes include the decline in sensory skills and motor abilities, as well as diminished cognitive sharpness. In addition, the physical loss and increased limitations associated with aging have potentially damaging effects on actual and perceived control, as well as the sense of helplessness. To summarize, it may be that with age, the "realm of the attainable" diminishes as a result of the loss of social roles and increased physical impairment.

### Age-Referent Expectancies: The Implications for Mastery

Personal and institutional resources salient in later life may result in high mastery. For instance, older adults are often perceived as “established” or “mature.” On their surface, these notions may seem to reflect characteristics of a masterful being, yet paradoxically, as the years pass, we may also become more vulnerable to loss. Functional status may worsen and directly cause individuals to ponder why they can no longer function “like they used to.” Whatever psychosocial benefits derived from the status attainment associated with age may actually be undermined by limitations and disability that is also associated with increased age. In addition, with advancing age one might experience the loss of friends and family to death. Taken together, these events accumulate and eventually overshadow the “established, mature” sense that we attribute to older adults.

Broadly speaking, older adults may be “expected” to have lower mastery for a variety of reasons mentioned above. Research documents that older adults with little cognitive or physical decline still report lower mastery (Kuhl, 1986). A scenario in which individuals who have experienced little or no decline still report lower mastery raises questions about attributing the age-mastery association entirely to biological decline. In a large scale study of the importance of age and functional limitations, Mirowsky (1995) found that physical impairment decreases the sense of control. In addition, he reasoned that given the positive age-impairment association, impairment may account for some of the negative association between age and the sense of control. With statistical adjustment for physical impairment, he accounted for more than one-fourth of the association between

age and the sense of mastery. The overall conclusion of Mirowsky's research is that impairment contributes importantly to a low sense of control among older persons, but it is not the only factor. He implicates other age-group differences, like those in education, as contributing to the total association between age and the sense of control.

In addition to these considerations, the cultural perception of various losses with advanced age may cultivate a generalized expectation of diminished mastery—real or not. Friends, family, the media, and other institutional structures salient in the elder's social world often provide inappropriate forms of support or praise for easy accomplishments. These actions, however subtle, can inadvertently reduce control perceptions and leave the elderly actually underestimating their own capacity to control actions and outcomes in their daily life. The underlying implication is that age, in itself, carries expectations about “normative” personal agency.

Some scholars are concerned about the institutional forces that contribute to the diminished personal agency that is age-referent and linked to late-life. Henrard (1996)

notes:

[E]lderly people are seen as poor and disabled on one hand and on the other hand as socially devalued with role loss. This vision is legitimated by geriatricians and social workers. The danger is of presenting partial one-dimension view ignoring that many elderly people are in good health, have independent life and bring valuable contribution to society. This partial view has consequences for the elderly who are at risk of stigmatization and low esteem and to be reduced to object of welfare, without being seen as subjects having abilities and knowledge.

Henrard's remarks alert us to the realities of age as a marker of expected or normative psychological, social, and physical dimensions of the life course. It conveys the

notion that in an age-stratified society, various statuses and personal capacities “should” be distributed in a particular way. Indeed, it suggests that over the life-course, the labels affixed to chronological age may remotely reflect the actual statuses or capacities expected at that particular age-location. More often than not, however, it implies weakness or incompetencies, along with the inevitable decline in functioning. Such inconsistency, therefore, may have negative implications for the sense of self (Neugarten, 1996).

In addition, Rodin and Langer (1980) have argued that the general stigmatization of the elderly leads to an internalization of negative attributes, confirming that older people should have less control, evolving into a self-fulfilling prophesy. Henrard (1996; 668) offers remarks that elaborate on the notion of labeling and age-grading:

[D]efinitions and subdivisions of later life reveal the importance of age to classify and to segregate people without taking into account factors of social stratification such as gender and class and the role ascribes to later age. Chronological age is a poor guide of functional abilities and life styles but is commonly confused with social expectations and cultural values, by which an individual or a group is labeled as middle age or elderly.

Another assumption that underlies this discussion of age-graded and age-referent life course experience is the homogeneity of older adults as a group. A lack of personal experience with the elderly, for instance, may fuel misperceptions of their having similar levels of functioning, clinical profiles, and psychological characteristics. In addition, during clinical interactions, practitioners may perceive their elderly patients strictly through the lens of the pathology model of old age (Henrard, 1996). The synergistic effect of age and the emerging limitations may have powerful implications for the self. David Mechanic

(1995; 1210) relates a narrative about his mother that elaborates on these processes. He writes:

I recently had a related experience with my 91-year-old mother who lives independently, retains many interests including baking, reading and physical activity, and who has a high level of cognitive function. In the last year or two she has had increasing difficulty in raising herself from her chair, getting in and out of cars, and related activities-incapacities that she found discouraging and indicative of inevitable decline. For the first time, she seemed to be losing her sense of control and her will. Her general internist, a kind and dedicated physician, probably viewed her decline as an inevitable function of aging and was supportive but not particularly helpful. I asked that she have a geriatric evaluation, and as a result a physical therapist was assigned who in just one or two sessions dramatically changed her pessimistic self-conception and sense of decline. Over four or five sessions, he taught her useful strategies for raising herself, bathing, entering and leaving vehicles and walking stairs. He taught her exercises which allowed her to enhance her strength and resume activities with confidence. The effect of the regained physical sense of control dramatically affected her sense of well-being as well as her ability to continue her activities.

Mechanic's experience reflects cultural expectations about age-normative physical and social functioning and the consequences for the self. In the same context, Bandura (1981) has written extensively on the developmental aspects of self-potency. One explanation for the perceptions of intellectual and physical deficits in later-life involves a process called modeling. This involves socialization experiences based on other images of older persons. Bandura argues that exposure to the dependency experienced by some elderly, and the common depiction of that dependency as age-normative, may result in the modeling of helpless behavior by those located in older cohorts. These notions have obvious implications for the distribution of personal agency by age, independent of actual physical functioning. In addition, it implicates the power of social comparison processes. One develops a sense of one's own capacities relative to age-peers. In this theoretical

framework, the “age-peers” may be real or are actually a reflected group based on a generalized sense of physical, social, and psychological functioning. If the considerations argued above are true, this generalized sense is one that should have detrimental effects on the sense of personal agency.

The loss of perceived or actual control sets in motion a cycle that ultimately discourages the aged from being involved in the necessary physical exercise for good health and well-being. These processes cause individuals to reduce the activities they once enjoyed and substitute passive activities for those more active (i.e. driving instead of walking). A sociocultural environment that emphasizes passivity or dependency can have important implications for those who are at a point in the life course where exercise is essential for both physical and mental health. Over time, it may be that these deficits result in physical decline—a decline attributable to lack of physical activity, misperceptions about capacities, and the cultural ideas that encourage both (Kuhl, 1986).

Research supports the notions presented above. People who have higher levels of bedrest exhibit greater levels of age-related symptomology, including decreased muscle strength, reduced cardiac output and stroke volume, calcium deficits and osteoporosis, and reduced catecholamine content in the central nervous system. These factors can lead to lost control, inactivity, worse functioning, and subsequent further decline in the sense of control. Indeed, brain functioning and bodily exercise are connected in vital ways. The daily tasks or problems that require a certain level of cognitive “strength” pose more difficult for those who are not cognitively fit. The cycle is apparent again as less control and even a sense of helplessness can result (Kuhl, 1986).



A study of 439 patients with osteoarthritis documents patterns consistent with “age non-normative” disability and impairment. The results show that older respondents report greater physical disability than younger respondents. Unexpectedly, however, younger persons reported significantly more psychological disability and pain than did older respondents. All the respondents had similar physical disability, yet evidence suggests that the timing of the disability in the life course is particularly salient for the meaning attributed to the disability and its implications for well-being. Younger respondents may experience problems in coping with physical disability because it is less expected. In contrast, older adults may see disability in the context of age-referent norms of physical decline; they may expect a certain level of pain and limitations “at their age” (Neugarten, 1996). Indeed, unlike the young, any physical limitations, physical loss, and greater pain may be perceived as “normative” for older persons. Individuals may treat these losses as expected given the cultural (and often realistic) notions that getting older means “the body is no longer what it used to be.” In sharp contrast, there are ages at which we typically are not supposed to need much help with activities of daily living. For instance, a thirty-five year-old “should,” in a normative sense, have the physical capacity to do his or her own laundry or shopping, or for that matter hold steady employment. We have expectations of ourselves and of others our same age and background— expectations that are closely tied to age-referent and social comparison processes. Dissonance between these expectations and actual abilities may have detrimental consequences for the self, particularly among younger adults.

The considerations above suggest the importance of viewing age from three perspectives: decline, maturity, and stage (Mirowsky and Ross, 1992). The dimensions of the age-mastery association can be explained by each of these perspectives. If age is marked by physical decline and social losses, and these factors are associated with greater mastery, then we would expect age to have an indirect negative affect on mastery via physical and social decline. With age, however, we also expect to gain experiences and develop into physically mature individuals. These elements are also associated with greater mastery. If age is marked by maturity and experience that improves our capacity to understand the world and solve our personal problems more effectively, we would expect mastery to increase with age. Finally, if age is viewed as stage, whereby the life cycle is indexed by the achievement of statuses (i.e., education, employment, income, marriage and family), we would expect an enhanced sense of personal agency with advanced status attainment. Important to each of these perspectives is the notion that a socially prescribed timetable defines progression of our lives across the life course. Before explicitly defining how these considerations help define the hypotheses tested in the present study, it is essential to expand on the importance of disability and functional limitations, both independently and as they are intertwined with age.

### Disability and Functional Limitations

The World Health Organization defines health “as a complete state of physical, social, and mental well-being, which includes the absence of a disability, freedom from symptoms, and a general state of wellness” (as cited in Kaplan and Toshima, 1990).

Sociologists and others have worked diligently in the past few decades to modify the definition of health, from one based upon physiological and biochemical markers to a definition that includes individual social role performance, daily functioning, and well-being (Levine, 1995). Mechanic (1995; 1210) elaborates:

In the older conception, while disability deserved public sympathy and assistance, it was viewed in essence as a personal problem that required considerable withdrawal from usual activities. The contemporary view has had a transformative influence in its implication that persons with almost any impairment can meet most of the demands of everyday living if they adopt appropriate attitudes and if physical, social and attitudinal barriers are removed.

In recent times, our notions of the disablement process have shifted away from disability as a personal characteristic to one attributed more to a lack of fit between the person and the environment. A key element of the process involves how the environment constrains functioning. One component of the disablement process, impairment, results from pathological processes or injuries. In many cases, what proceeds are functional limitations that vary in severity and scope. The individual, regardless of the level of support from others, faces difficulty or inability to function in daily activities. Often, the extent to which functional limitations lead to the restriction of activities and role functioning is conditional upon the nature of one's physical environment (Johnson and Wolinsky, 1992).

Broadly defined, functional status includes comprehensive, multidimensional, functioning that is physical, cognitive, emotional and social in nature. Katz and his colleagues (1963) found that disabilities combine to create a scale that shows the accumulation of disabilities. During the 1950s, a classification scheme for patients at

varying locations in the course of their illness was developed by the Commission on Chronic Illness. A unique measure emerged called the “Index of Independence in Activities of Daily Living,” later referred to as simply the “Index of ADL.” In the construction of the ADL index, Katz and his colleagues noticed that decline and recovery from a disabling illness was a process similar to that found in early childhood development. They remarked that the functions most essential for survival and those least complex (such as feeding) were the first to emerge in early life and the last to diminish at the end of the life course. In sharp contrast, the most complex and least basic to survival (i.e., bathing) emerge later in childhood and actually are the first to vanish in the later part of the life course. The overall ADL count reveals the level of self-care need. An improvement in functioning is defined as a decrease in ADL, while an increase is indicative of a deterioration in functioning.

The practical importance of maintaining physical mobility has generated an interest in understanding changes in functional limitations, particularly among those with specific disabling conditions. In 1965, Nagi described a conceptual framework for disability research that depicted a four-stage sequential process which progressed from the underlying pathology or disease, to some physiological impairment, to physical or emotional impairment. The limitations reported in physical and emotional capacities may result in the inability to perform both work and independent living tasks. The model reflects a natural progression from body to mind as diseases cause physical limitations and diminish the sense of well-being (Johnson & Wolinsky, 1993). Hickey (1980; 58) stresses

the implications of deterioration in functional status and raises questions about the differential capacity individuals have to adjust to these strains:

Functional status, independent of existing pathology, is clearly important in representing an individual's state of health. Persons who exhibit similar clinical symptoms may vary widely on functional measures... We all know individuals who continue to perform their daily activities above and beyond their apparent capabilities, age expectations, and/or physical conditions. On the other hand, we also know of people who seem completely devastated by moderate chronic conditions.

Is disability associated with age? Turner and Wood (1985) document the positive association between age and disability; they found a disability rate of less than 15 per 1000 for persons less than 25 years of age. In sharp contrast, among those over 70 years of age, the rate of disability was 215 per 1000 individuals. The authors attribute the age-disability association to several factors. The first is the higher number of chronic conditions among the elderly. The second is the decline in activities of daily living and functioning among older cohorts. In addition, Schaie (1983) documents that average physical limitation increases in successively older age groups, with major difficulties including problems with seeing, hearing, walking, lifting, climbing stairs, grasping, and manipulating (Waldron, 1983). Shopping, cleaning, gardening, bathing, grooming, dressing, and eating are other activities that present problems for older people (Guralnik and Kalplan, 1989).

The problems associated with disability vary across the life course, apparently becoming more prevalent with advancing age. The question posed in the current study is how these variations are relevant for the association between age and mastery. The personal struggles often associated with such strains highlight the importance of the cognitive linkages between efforts and their consequences. An individual who gives effort

to a task only to experience failure as an outcome may develop a sense of powerlessness or lack of control (Seligman, 1975). In contrast, successful experiences with daily living skills and more complex tasks may generate feelings of mastery, efficacy, or the belief in internal control. Subsequent behavior, in this case, is likely to be characterized by active problem-solving (Wheaton, 1980, 1983; Mirowsky and Ross, 1989). Given the above considerations, it seems that disability and impairment create obvious strain for individuals. Hence, it can be argued that the sense of mastery is likely to decline as strain emerges and worsens.

### Impairment and Mastery

As difficulties in ADLs emerge and increase with age, functional status may decline. This transition from independence to dependence in ADLs may result in the loss of general mastery among older cohorts. In the experience described by Mechanic in the previous section, the renewed physical capacity his mother developed seemed to enhance and revive her sense of mastery. As age advances, individuals must engage in both physical and psychological maintenance to protect the integrity and resoluteness of their self-definition as actual or perceived decline occurs (Neugarten, 1996). Given the set of challenges faced by impaired persons, disability in younger years may pose obstacles remarkably similar to those experienced by older adults. They may differ only in the sense of normative occurrence.

Indeed, mastery is particularly relevant for a population that must deal with chronic health difficulties. Chronic disabling disease can disrupt attempts to function in the

ongoing processes of daily life. As one adapts to daily stress, routines become increasingly challenging. Often, the ability to perform is conditional upon one's degree of psychosocial resources. To the extent that one can mobilize countervailing forces against obstacles, overcoming daily difficulties is made a bit easier. Mechanic (1995; 1210) suggests that "at the level of the individual with an impairment, capacity, motivation, and psychological maintenance are all still important and each may be enhanced or inhibited by the social and environmental context."

Mechanic uses the term "capacity," which seems to suggest a general level of resources that one has to help them deal with chronic strain. For example, the disabled may find their capacity to engage in problem-solving efforts less efficacious, and subsequently witness tangible declines in their actual capacity to achieve and maintain the sense of control of their social world. The final outcome of such a process can have dour consequences for psychological well-being and distress. Turner and Noh (1988), for instance, document the particularly depressing consequences of physical injury and disability.

Like the cultural ideas about aging, our expectancies about mastery are learned in numerous socializing arenas (i.e. school, work, doctor-patient interactions, the media). Health, physical limitations, and experiences (or perceptions) with health care are likely to influence these beliefs. The associations may be reciprocal in that control beliefs should influence one's responses to symptoms and chronic illness. Along these lines, Strickland (1978; 1198) suggests the following about the association between the experience of disability and the sense of control:

**Any impending or disabling disorder, whether chronic or temporary, has a varying degree of influence on the responses of the persons faced with the handicap. The severity of the disorder, the time of the onset, the current status of the patient, the support that he/she receives, and so on, all interact with what is probably a complex set of cognitions about the disorder. When an individual is more helpless than he/she once was, or is handicapped in relation to others, beliefs about locus of control would be expected to be, and apparently are, related to reactions to the disorder.**

**Some researchers argue that the prognosis for long-term disabled elderly is that there is a low chance of improvement or the prospect of reclaiming independent functioning. Others suggest that the probability of altering the negative course of a disability declines with the amount of time since the onset. Indeed, the literature suggests severity of condition plays an important role in self-processes. Persons with more chronic conditions tend to have more external perceptions of control than persons without the conditions. Wallston and Wallston (1982) suggest that people who have suffered a long illness or many bouts of illness have an abundance of experience with the health care system. The interaction with illness and health care systems may generate complex and influential sets of perceptions about health-related sense of control. Along these lines, Wheaton (1980) found that people who have an external attributional style experience more negative health outcomes than those who maintain more internal attributions, and that external attributions decrease motivation and health-positive actions. Disability and functional impairment are important in the present study because they are believed to be central “problems” in individuals’ lives and “threats” to mastery. Given the consideration found in the reviewed literature, the several questions that emerge are 1) the extent of the age-mastery association that is solely a function of variation in limitations of activities of**



daily living; and 2) the extent to which the “threats” posed by disability are age-graded. Previous work by Mirowsky (1995) accounted for more than one-fourth of the association between age and the sense of mastery with statistical adjustment for physical impairment. Impairment, however, is neither the most important nor the only factor implicated by Mirowsky. His research uncovered other important age-group differences, like education, as contributing to the total association between age and the sense of control. The importance of education is discussed in later sections.

### Hypotheses

In the following hypothesis, I refer only to “disability.” The formal tests, however, will include both disability as a dichotomy (yes/no) and as a continuous impairment index of ADL. Given the above considerations state in the literature review, one set of questions addressed in the present research concerns whether age and disability have independent effects on mastery. That is, do individuals with a chronically disabling impairment have lower mastery than nondisabled across all stages of the adult-life course? And, does age influence mastery independent of the experience of disability? I expect that disability and age are negatively associated with mastery.

A second set of questions concerns whether age and disability may interact in their effects on mastery. I hypothesize two alternative scenarios involving synergistic effects: 1) that disability is particularly detrimental for older individuals (“double-disadvantage”); or 2) that disability has a greater negative effect for young adults relative to older people (“reference-normative comparison”).

To elaborate, the double-disadvantage hypothesis suggests that the relationship between age and mastery depends on one's status of disabled or non-disabled such that the association between age and mastery will be more strongly negative among those with a disability. This requires the inclusion of disability by age interaction term in the model. If the double-disadvantage hypothesis is supported, the interaction term will be negative and the y-intercepts will be close. Alternatively, the reference-normative hypothesis suggests that the negative association between age and mastery will be stronger among those without a disability. That is, the differences in mastery are largest among the young and as age increases, the differences in mastery between disabled and non-disabled converge.

There are two central ideas behind the reference-normative hypothesis: 1) younger people should not be impaired; and 2) impairments appear among older adults as the normative process of physical decline in the life course. We should, therefore, see the most detrimental effects of disability on mastery at younger ages. With increasing age, the negative impact of disability should diminish as age approaches what is considered age-referent normative periods of impairment. In contrast, the nondisabled young are expected to have relatively higher mastery and experience the general decline in mastery associated age. If the reference-normative hypothesis is true, the disability by age interaction term should be positive and the intercepts should be far apart.

In addition, a different hypothesis is tested: the hypothesis of reflected impairment (Mirowsky, 1995). The considerations set forth in the sections above provide a rationale for the expectation that the increasing level of functional limitations among older cohorts is the culprit, at least partly, in explaining their declining sense of control. Evidence

supporting that hypothesis will reflect an indirect effect of age on mastery through functional limitations.

### Status Resources, Support, Participation, and the Sense of Mastery

The purpose of this section of Chapter 2 is to review literature regarding the relevance of resources like education, employment, income, and support for the sense of mastery. The chapter examines theory and past empirical work which supports testing the hypothesis of resource disadvantage. That hypothesis states that the effects of age and disability on the sense of mastery are actually due to the fact that older and disabled groups have lower education and other status resources than younger and nondisabled groups. In addition, the cultivated resourcefulness hypothesis suggests that education cultivates particular intellectual and psychosocial resources that reduce the negative consequences of age and impairment on mastery. Alternatively, the undermined benefits hypothesis suggest that biology has its way with all of us eventually and then advantages gained from status attainment are diminished with advanced age and impairment.

### Socioeconomic Status Variables and Mastery

What we refer to as “education” involves the attendance of educational institutions from the earliest points in grade school to the highest levels of graduate and post-graduate experiences. While we may attempt to understand the quality of that type of schooling, often basic information of level, or years, of education is used as measurement in social science research. Education is a process that facilitates and cultivates the development of

our capacity to solve problems, which in turn, enhances notions of our own self-potency. Education instills the sense that problems can be overcome (or at least dealt with effectively), while refining habits that promote communication and reflective analysis of life experiences. With advanced education, one realizes their abilities to attend to, give extended analysis to, actively address, and persist against problems. It also provides a "ladder" to higher socioeconomic status, which, in turn, provides greater control over life circumstances. In addition, the association between education and health is firmly established. Research shows that those with higher levels of education report better health via measures of self-reported health status and physical functioning. Education is also related to levels of morbidity, mortality, and disability (Guralnik et al., 1993).

As discussed in the previous chapter, the capacity for persistence in the face of chronic difficulties may be more pertinent for individuals with impairment. Mirowsky (1995) argues that education equips individuals with the skills to exploit the talents and resources that they possess. Essentially, education provides psychosocial tools that enable people to maintain and acquire more resources; it facilitates the use of other socioeconomic statuses (i.e. income) in appropriate situations when needed.

Indeed, research suggests that generations may differ quite dramatically in terms of their education level. In recent research, Mirowsky (1995) documents the pattern of lower education among older cohorts. He also found, as expected, that education is positively associated with the sense of control. In addition, adjustment for education accounted for about one-fourth of the negative age-sense of control association. He

concludes that education contributes more to the low sense of control found among older age groups than does their higher impairment.

If education is implicated in the age-mastery association, then why not the status variables that typically are associated with higher education—specifically employment and income? According to Gove and Tudor (1973), paid work generates the mental association between efforts and outcomes, and allows one to maintain economic independence in their lives. In sharp contrast to those who do not work, being paid for employment is related to status, power, and other non-economic rewards. Those who are not employed may feel that their situation is tainted with failure and that while their inability to find work may not be their choosing, the implication of failure is difficult to escape.

Ross and Mirowsky (1992) argue that when we consider those with and without paid employment, the employed are likely to have a greater sense of control. Ross and Bird (1994) found that personal control correlates positively with full-time employment and high income, and negatively with economic hardship and housework. Pearlin et al. (1981) found a lower sense of mastery among men who had been forced into unemployment by lay-offs. Downey and Moen (1987) found that labor force status does not enhance self-efficacy. Rather, it is the rewards of employment that are most important in generating feelings of personal efficacy among women heading households. They note that participation in the labor force may enhance sense of control regardless of income. Elder and Liker (1982) report evidence that suggests elderly women who took employment during the difficult economic times of the 1930s had a greater sense of self-

efficacy and less feelings of dependency and helplessness. Research also suggests that employed women report greater self-determination and higher sense of control than their counterparts who are housewives (Ferree, 1976). These studies highlight a common suggestion about the work-mastery association: that employed individuals have a higher sense of control over their lives than non-employed persons. Moreover, unemployment may be a basis for age-referent social comparison. At particular ages, one “should” have work and “should” be earning a particular wage. These notions, discussed in the previous chapter, reflect the socially prescribed timetable described by Neugarten (1996).

### Hypotheses

Given the above considerations, the hypothesis of resource disadvantage suggests that older groups and disabled are lower in mastery, in part, because of their lower levels of education, greater unemployment, and lower income. That is, the differences in mastery across age groups and between disabled and nondisabled may be more a function of their disadvantage in status variables rather than age per se. In addition, I test the cultivated resourcefulness vs undermined benefits hypotheses. The former suggests that education cultivates particular intellectual and psychosocial resources that reduce the negative consequences of age, disability, and functional limitations on mastery (Rowe and Kahn, 1987; Mirowsky, 1995). Alternatively, the undermined benefits hypothesis suggests biology has its way with all of us eventually. If that is true, then any advantages from educational attainment (and its subsequent influence on SES), diminish as the human body approaches the later years of life (see House et al., 1991). So while education may

enhance the sense of mastery, other factors like age, disability and limitations may also undermine its positive influence on mastery. The actual benefits of education, therefore, are smaller among older age-cohorts, the disabled, and those with greater limitations.

### Social Support

This section examines literature regarding the importance of social relationships for health and well-being. In addition, it examines the potential advantages and disadvantages of social support among those with disabilities and older groups. The central point in the following review is that social relations matter for mastery, but that the association is less straightforward after we consider particular configurations of age, impairment, and support. The following review provides theoretical and empirical justification for testing two alternative hypotheses: the social resourcefulness hypothesis versus the social dependency hypothesis. The former suggests that social support is positively associated with mastery, but the effect is more apparent among older and more impaired because of the greater need and benefits derived from support by these individuals. The latter states that social support is positively associated with mastery, but that with increased age, disability, and limitations, the positive effect of social support on mastery is reduced or actually reflects greater dependency.

For decades, science has recognized the connections between social relationships and health. Emile Durkheim's (1951) classic *Suicide* was the first empirical piece of sociological research to show that social relationships matter for well-being. Durkheim found that those more integrated members of society were less likely to commit suicide.

While epidemiological research shows definitive links between social ties like marriage and health-related outcomes, others note that social relationships can have health-enhancing benefits beyond simply preventing negative outcomes (House, Landis, and Umberson, 1988). Part of the intrigue with social support involves the theoretical nature of the support-health association. The review that follows the conceptualization of support considers the theoretical and empirical justification for considering social support in these analyses.

Like SES, social support can be considered a “fund” from which people can draw upon in times of need, particularly during stress. This “social fund” implies that one can draw upon significant others for various kinds of support. The forms of support include instrumental, informational, and/or emotional support. While the perceived level of support one maintains may be quite different from the actually level of support one receives, it is this perceived support that is associated with mental health (Thoits, 1995).

The conceptual definitions of social support bring to mind the notion that people need others' help; they rely on the services of others. Turner (1983; 107) writes, “what presumably distinguishes social support from the broader concept [of support] is that it necessarily involves the presence and products of stable social relationships.” Even more thought-provoking is Turner's suggestion that “perhaps nowhere has the significance of human associations been more clearly demonstrated than with respect to developmental contingencies.” He goes on to cite the important work on maternal deprivation by Spitz, the mothering and responsive research by Harlow, and Bowlby's famous research on



attachment. These studies (all cited in Turner, 1983) emphasize the fact that social relationships and social connectedness are essential for early human development.

Moreover, the period of older age is similar in ways to infancy in terms of reliance on others for daily functioning. As noted in a previous section, Katz and his colleagues (1963) noticed that decline and recovery from a disabling illness was a process similar to that found in early childhood development. They remarked that the functions that were most essential for survival and those least complex (such as feeding) were the first to emerge and the last to diminish at the end of the life course. In sharp contrast, the most complex and least basic to survival (for example, bathing) emerge later in childhood and actually are the first to vanish in the later part of the life course.

Researchers have also conceptualized social support as taking on different forms. Cobb (1976) offers the best known conceptualization of perceived or experienced support in which he delineates between three kinds of social support in terms of information that leads one to believe he or she is cared for and loved, esteemed or valued, or that he or she belongs to a network of others who share obligation and communication. His conceptualization of social support considers the clarity or certainty with which the persons feels loved, valued, and able to count on others if demands surface. Cohen and Wills (1985) theorize that social support can insulate individuals from the effects of stress. They note that such a buffering effect may be due to the link between the particular need evoked by the stressor and the type of support provided.

The conceptual characteristics of social support are relevant because older people or those with impairments face daily hassles and often require instrumentally and

materially supportive actions by others to function. Ironically, while the disabled may be in direct need of greater social support to aid in overcoming daily hassles and maintain well-being, some evidence suggests that interpersonal relationships are particularly problematic for physically disabled (Zahn, 1973 see Turner, 1983). In addition, Turner and Marino (1994) report a convex distribution of social support across age. That is, the lowest levels of social support was found among 18 to 25 year-olds and the highest found among 35 and 45 year-olds. Turner and Marino suggest that the similarity in age-support and age-distress distributions may support the hypothesis that variations in the experience of social support may partially explain the age-psychological distress association. Moreover, the types of support vary across age cohorts (Dean, Lin, Tausig, & Ensel, 1980).

How does support matter for those with chronic disabilities? Two possibilities we can consider are the benefits of support versus the costs of support. Intuitively, one would expect that support helps those with disability manage their daily affairs and maintain a sense of independence and control over their life. The second possibility, however, is that support causes a diminished sense of control by increased reliance and dependency of support-givers.

The main effects of social support on health that are often found in research may be by-products of more abstract processes (Thoits, 1995). Those scholars arguing the importance of main effects models view the social environment as directly influencing health. Kaplan and Toshima (1990) label this notion the functional effect model. Research has shown that the social environment has functional and/or reinforcing effects on health-related issues. Kaplan and Toshima (1990) suggest that social environments can have both

good and bad outcomes. I expand on this notion and propose two alternative hypotheses in the context of age and impairment. These are discussed below.

### Support and Social Resourcefulness

As discussed in earlier, chronic disability presents challenges to the sense of personhood of the affected individual. Their ability to carry out the duties of roles is questioned, as well as the meanings attached to the capacities associated with those roles. The disruption of that functioning is a direct threat to the psychological world of the disabled individual, with the possibility that their personhood and sense of mastery are damaged. The loss of personally valued social roles or lack of adequate performance in remaining social functions may decrease one's sense of self in others' eyes. Pearlin and his colleagues (1981) note that the persistent strains can force an individual to witness the evidence of their own failures-- or lack of success. Such inescapable proof of incapacity to change the undesirable circumstances of their lives can leave one vulnerable to the loss of self-esteem and to the erosion of a sense of mastery. Mechanic (1995) notes that such loss is often related to depression and distress. The management of these negative feelings is essential and often the ability to cope is conditional upon social support. The communication of positive signals of worth and importance, regardless of the level of functional status or impairment, is vital. It can enhance the sense of empowerment and partnership in common endeavors, providing both emotional and instrumental benefits for someone with a chronically disabling illness or condition related to age.

A growing area of social research suggests that social support has implications for self-care and health outcomes in chronic disease conditions. Friends and family provide social contacts that ease the emotional stress that results from accidents or ill health (Kaplan and Toshima, 1990). All of these studies have a common theme: support helps in circumstances where the individual meets some hardship or set of hardships in daily life. One element, however, many studies leave unexplored involves the complexity in adaptive processes to age, chronic illness, self-care, and the social environment (in essence, social support as coping in aging, chronic illness and disability).

Chronic disabling disease often creates obstacles to daily functioning. In a world where routines become increasingly challenging, capacity to cope is conditional upon one's degree of psychosocial resources, among other things. To the extent that one can mobilize countervailing forces against obstacles, overcoming daily difficulties is made a bit easier. Mechanic (1995) notes that such capacity, along with motivation and psychological maintenance, may be enhanced or inhibited by the social and environmental context. Mechanic uses the term "capacity," which seems to suggest a general level of resources, both psychological and social, that one has to deal with chronic strain. He adds: "efforts are also needed to plan rehabilitation in the context of family, household, employment and recreational environments so as to mobilize helpful communication and interaction that assists participation and role function and prevents loss of self-efficacy and self-esteem (1210)." The suggestion that the structure of the social environment and the nature of social support has an important influence on self-potency processes pervades medical

sociology literature. In the case of the age-mastery dynamic in the context of disability, empirical elaboration of the role of social support is even more crucial.

Some of the theoretical notions that help frame the social resourcefulness hypothesis are taken from Peggy Thoits (1995). She argues that despite considerable theoretical attention given to the support-health associations, the need remains for studies to consider the intervening mechanisms involved. It may be that some of the support benefits happen through enhanced mastery. She suggests that supports assist with coping and their reassurances can bolster self-esteem and identity. Support givers can also provide needed feedback and encouragement that can sustain a sense of mastery even through tough times when one's competency is called into doubt. Thoits argues that despite that notion, few researchers have investigated the actual influences of perceived or received support on individuals' self-esteem, identity, or mastery.

Empirical evidence exists to support the notion that support is beneficial for health and the sense of mastery. For instance, Kaplan and Toshima (1990) cite findings that social support may enhance health outcomes. Results from ground-breaking longitudinal research, such as the Alameda County Population Monitoring Study, found that simple measures of social networks predict longevity and mortality. Women and men with weak social ties were at a significantly greater risk of dying than those with stronger social ties (the association was stronger among women). In addition, Kessler (1982) found that persons in supportive social conditions tend to do better in terms of health and well-being. In similar research, Kennedy (1989) examined the effects of social competence, social support and their interaction in predicting community integration and well-being of 159

chronically disabled, mentally ill adults. Findings indicate significant positive relationships between social competence and community integration, emotional support and well-being, and community integration and well-being. In a sample of physically disabled, participation in clubs or any kind of organized group, spending time with friends or family, and having a social network was associated with higher self-esteem (Resnick, 1985). In a sample of 156 persons receiving inpatient or outpatient care for spinal cord injuries, Elliot and colleagues (1991) found that interactions between assertiveness and different social support relationships revealed beneficial and deleterious effects on depressive behavior and impairment secondary to the disability. Each of these studies suggests that the benefits of support for mastery are beneficial for health, well-being, and mastery. The present research extends these ideas to examine possible interaction effects in which the particular benefits of support for mastery are more salient among older and impaired groups—social resourcefulness.

### Support and Social Dependency

Alternatively, and in support of the dependency hypothesis, Kaplan and Toshima (1990; 430) note that illness can cause modifications in the person's social environment, including the social support network. They add that the chronically disabled may have functional limitations that create above-average support needs. For instance, an individual who is not capable of dealing with certain household responsibilities may require instrumental support from others. Ironically, they may have difficulty obtaining an adequate level of support for reasons not always understood. There is evidence that

chronic illness generates alienation and estrangement (perceived and actual) from family and friends. Often, misconceptions about the nature of a disabling condition hinders the level of available support. While there are inconsistencies in the measures, methods, and results across many of the studies investigating stress, support and health, the overall general conclusion supports the social relationship-longevity association (Kaplan and Toshima, 1990). There is little doubt that friends and family are assets to your health. The question is why and if they help—is their help reflective of greater dependency and harmful for personal agency?

The detrimental aspects, in contrast, may involve the unwitting reinforcement of detrimental behaviors. Kaplan and Toshima (1990) highlight research that suggests that social relationships can prolong and reinforce physical dysfunction. They cite the example of teenagers with insulin-dependent diabetes mellitus who are asked to follow a rigid schedule of diet, exercise, and insulin injections. Paradoxically, teenage diabetics can be highly satisfied with their social support system and yet remain in very poor control of their condition (Kaplan, Chadwick, & Shimel, 1985). Garrity (1973) found that the more concerned a patient's family was about their condition, the less the patient worked at a job. Kaplan and Toshima (1990) suggest that the behavior of the family members may actually harm the person by constricting self-reliance behaviors and increasing dependency. While family members' concern is justified and often leads to supportive action, their perceptions of the care-receivers' frailty may facilitate decreased activity levels and reinforce the weakened sense of control.

## Hypotheses

The above considerations inspired the testing of the social resourcefulness versus the social dependency hypotheses. The former claims that if the benefits of social support for mastery are more salient with increasing age and impairment, then we may have evidence to support the social resourcefulness model. Alternatively, the latter suggests that the age and disability combination may lead to greater expectations of dependency expressed by one's social support network. If the benefits of social support for mastery are undermined by higher levels of impairment or age, we may have evidence to support the social dependency model. To summarize these two alternative hypotheses, I draw heavily from Kaplan and Toshimo's (1990) work. They argue that stress-buffering effects consider genuine family concern (social resourcefulness) as helping chronically ill individuals cope with their condition. Additionally, the social resourcefulness model posits that caring family members can have a positive effect via the reinforcement of appropriate health behaviors. Alternatively, evidence supporting the social dependency model suggests that caring and concern might reinforce behaviors that are incompatible with an optimal level of functioning.

## The Relevance of Gender

Gender is documented as an explanatory variable in mental health variation and depression (Mirowsky, 1996). As a status variable, gender presents differences in opportunity and experiences—factors that potentially contribute to differentials in mastery. Mirowsky and Ross (1989; 134) suggest “we find that women have a greater



sense of powerlessness than men. Although the reason women feel more powerless has not been fully established, it may be due to economic dependency, restricted opportunities, role overload, or the menial nature of housework and many women's jobs." Although Ross and Bird (1994) suggest that men have a greater sense of control over their lives due to their higher objective levels of control, opportunities, and rewards, and lower levels of dependency, like other researchers (Turner & Noh, 1988), they failed to find significant gender differences in mastery. Thoits (1995; 61) refers to gender differences and stress, coping, and social support in the following passage:

A key question for sociologists is whether coping techniques and/or coping styles are distributed unequally by social status. With respect to gender, the answer seems to be a qualified 'yes'... studies consistently suggest that men have an inexpressive, stoic style of responding to stressors and women have an emotional expressive style. Men more often report controlling their emotions, accepting the problem, not thinking about the situation, and engaging in problem-solving efforts. Women more often report seeking social support, distracting themselves, letting out their feelings, and turning to prayer. But there are a number of exceptions in the literature with respect to gender differences in problem-focused coping... this may be because men's and women's use of problem-focused coping may depend upon perceiving control or power in a role domain—for example, men in the occupational arena and women in the family arena.

These notions acknowledge gender differentials across the life course. Young males tend to have a greater mastery than young females. Research also shows that pre-adolescent girls show greater learned helplessness in achievement situations.

Opportunities to have control over external situations and events may be a more salient issue for young males. In addition, male self-images in self-descriptions include stronger perceptions of control of the external world, having more power, ambition, agency, efficacy, instrumentality, and energy than females. Females, in sharp contrast, tend to have self-

descriptions that emphasize generosity, sensitivity, nurturance, and empathy (Berk, 1989). The main distinction is that males stress the importance of competition and mastery. These ideas are consistent with trends documented in later-life work careers. Research indicates that among the employed, men's jobs provide more autonomy, flexibility, economic and advancement opportunities, and nonrepetitive work than women's jobs— qualities that enhance mastery (Kohn and Schooler, 1978; Wheaton, 1980).

Given the considerations above, I expect that the effects of age, disability, and limitations and the benefits of resources like education and social support will be different for men and women. Gender, in combination with age and impairment, plays a crucial role in these analyses as potentially conditioning several of the associations hypothesized in the present research.

## CHAPTER 3

### METHODOLOGY

#### Sample

Respondents aged 18 and over who resided in any of ten counties in Southwestern Ontario were part of a two-wave panel study. The age range was from 18 to 91 years, with a mean of 56 years. Sixty-six percent were female. Sixty-five percent were married, ten percent were single, sixteen were widowed, and nine percent were divorced or separated. Essentially all of the respondents were white (see Turner and Wood, 1985 for more details).

Turner and Wood (1985) note that the original objective of the study was to collect information to help generate plans for social services geared toward physically disabled members of the community. Excluded from the sample were persons with mental disabilities and those with poor English speaking skills. The initial interviews were conducted during the September 1980- August 1982 time period.

A two-stage cluster technique was employed to obtain a sample from enumeration areas (EA's) as defined by 1976 Canadian Census information. In the initial stage, a random sample of 200 EAs were drawn. In the second stage, 10,972 households were selected within these EAs. Initial interviews identified 22,680 adults aged 18 and over. The following questions was used to determine eligibility for participation in the study:

"Do any adults in the household have any physical health condition or physical handicap that has resulted in a change in their daily routine or that limits the kind or

amount of activity they can carry out? (For instance: work, housework, school, play recreation, shopping or participation in social activities or community activities.)"

Approximately 70% of the 1,509 persons who met all of the study criteria participated in in-depth interviews. The final total sample of 989 non-institutionalized individuals all had some physically limiting condition (Turner and Wood, 1985). Lost cases were compared with completed cases. Using sex, place of residence, age and type of condition, matches were performed. The only significant difference between completed and non-completed involved age. Among those 65 and older, a large number of cases were not complete, resulting in an inflated age average for the incompletes. While this difference signals caution in interpretation, people over 65 remain well represented in the sample, accounting for more than one-third of the total. Also, the present work will consider both within age-group variation and across age-group differences.

In 1985 and 1986, a follow-up was conducted. The data used in this study are only those gathered at Time 2. Of the original subjects, 730 were re-interviewed using a questionnaire similar to Time 1 with some additions. At Time 2, 19 exclusions were made of respondents who no longer experienced conditions required for the study.

Approximately 13 percent of the respondents died at some point during the four-year period. Another four percent were either institutionalized or too ill to participate. Given the possibility to analyze these outcomes— mortality, institutionalization, and severe illness— a follow-up success rate of 93 percent was calculated. At the time of the second wave, only 5.6 percent of the wave 1 respondents refused to participate at time 2. Another 1.7 could not be located (see Turner and Wood, 1985 for further details).

In terms of the nature of the physical conditions of respondents, there was a good deal of variation (Turner and Wood (1985). The 16 most frequently occurring disorders account for 75 percent of the total sample. Although given such wide variation creates difficulties in creating categories of impairment, measures of pain and limitation in activity provide qualitative detail about types of impairment.

At Time 2, a representative comparison sample of 850 respondents was selected within the same Census enumeration areas. Households were randomly selected and members of the household were asked the same question used to screen for disability. Respondents were selected if they had no impairment condition present. The comparison group matched the disabled sample on age, gender and area of residence.

There are several important qualities about this dataset that make it ideal for the questions presented in this dissertation. Firstly, the sample is a probability sample. This allows for generalization of findings to the larger population from which these respondents were sampled. A second strength is the age distribution in these data. The ages range across the life span, thus allowing analyses that pulls out the possible confounding between age and disability. These data allow for the investigation of relationships between variables of interest across age to differentiate between the contribution of age and disability within associations. A third strength is the comparison sample of non-disabled persons. Although analyses using these respondents is possible only at Time 2, important cross-sectional distinctions can be made with disability as a qualitative (0-1) variable.

## Measurement

### *Mastery*

Mastery was assessed with a seven-item scale developed by Pearlin and Schooler (1978). Pearlin and Schooler's scale is commonly used and highly regarded among researchers investigating mastery. Responses were coded on a 5-point Likert Scale, with 5 indicating the highest score of mastery. For each item, respondents were asked to describe their feelings about the following:

1. I have little control over the things that happen to me.
2. There is really no way I can solve some of the problems I have.
3. There is little I can do to change the important things in my life.
4. I often feel helpless in dealing with the problems of life.
5. Sometimes I feel that I am being pushed around in life.
6. What happens to me in the future mostly depends on me.
7. I can do just about anything I really set my mind to.

Cronbach's alpha was computed for these seven items using Stata's alpha command. Alpha computes the interitem correlations or covariances for all pairs of variables in the list and the Cronbach's alpha statistic for the mastery scale from them. For the unstandardized variables, the average interitem covariance is .55 and the Scale Reliability Coefficient is .71. For the standardized variables, the average interitem covariance is .26 and the Scale Reliability Coefficient is also .71.

### *Age*

Age is used as a continuous variable in years. Initial analyses breaks age into group categories for ease of description. In all regression analyses, age is a continuous variable.

### *Disability*

Disability is a dichotomous variable. Disabled, or those who had any impairing condition, are coded 1; nondisabled are coded 0.

### *Functional Limitations*

The measure of functional limitations was original developed by Katz and colleagues (1963). The index was modified to incorporate the extent of difficulty and the requirement of aid within the context of thirteen different tasks. In both interviews, respondents were asked to report the level of difficulty a series of ADLs posed to them. They were prompted with the introduction:

"There are many activities that form a part of our daily lives that may cause some difficulties for some individuals. I would like to know if you have any problems with these activities. For each activity I read, please choose the answer that best describes your level of performance. Please tell me the number of the category on this scale that describes how easily you can do each activity."

The scale was: 1- "easily," 2 - "with difficulty but without help," 3- "with special equipment but no help," 4- "with help from someone," 5- "completely unable to do this." The list of ADLs included the prefix "are you able to" followed by an activity list which

included: feeding, dressing, bathing and using the toilet, grooming, mobility from beds and chairs, walking, mobility on stairways, driving automobiles, using public transportation, shopping, cooking meals, cleaning, and doing laundry. Interitem covariance for the unstandardized 15 items is .47 and Cronbach's alpha statistic is .92. For standardized variables, the values are .47 and .93 respectively.

### *Education*

The following items were used to index education. What is the highest grade you ever completed at school? Post-secondary education and training years were also assessed. The final measure was a sum of any schooling or training.

### *Social Support*

The Provisions of Social Relations index (PSR) is used to assess social support. It has been used extensively by stress process researchers and others. One of the measures used in this dissertation was developed by Weiss (1974). It is called the provisions of social relationships scale and contains six categories. Turner (1983; 116) reviews them as "(a) sense of attachment or belonging most often provided by marriage or other cross-sex relationships; (b) social integration, provided by a network of friends and colleagues who offer companionship and opportunity to share interests and values; (c) opportunity for nurturing others, most often children, which provides a sense of being needed; (d) reassurances of worth, provided by family, friends, and colleagues who attest to individual's competence in a given role; (e) a sense of reliable alliance, provided primarily



by kin relationships; and (f) the opportunity for obtaining guidance from trustworthy and supportive friends.”

Weiss’s conceptualization is consistent with a functional approach to understanding social support. That approach seeks to specify those aspects of support that are beneficial to individuals encountering stressors. The provisions encompass social support via the availability of friends and opportunities for guidance and nurturance from others. It also incorporates experienced support by means of attachment feelings, reliability of alliances, and the reassurance of self-worth. Within these conceptual confines, the goal of social support measurement is to assess the objective version of support and compare and contrast it with individual or subjective perceived support (Turner, 1983).

Turner (1983) notes that based on his field experiences and the analyses of its formal properties, the Provisions of Social Relations Scale “is a highly promising global index of social support (128).” It consists of 15 items designed to assess the extent of social support one receives from others. Some of the items were: “When I’m with my friends I feel completely able to relax and be myself,” “I have at least one person that I could tell anything to,” “Sometimes I’m not sure if I can completely rely on my family and friends.” Response items form a 5-choice scale from “very much like me” to “not at all like me.” PSR items had interitem covariance of .22 and Cronbach’s statistic of .80.

### *Gender, Marital Status, Income, and Employment*

Gender is coded 0= male, 1=female. There were 443 males (45.8%) and 524 females (54.2%). Measures of marital status include the following questions: What is your current marital status? Response choices include: 1) single/never married; 2) married; 3)

separated; 4) divorced; 5) common-law; and 6) widowed. Responses were recoded 0 = not married, 1 = married. Income consists of 13 categories, ranging from lowest income bracket to highest. Employment is coded 0= unemployed, 1= employed.

## CHAPTER 4

### HYPOTHESES TESTS AND RESULTS

Given the considerations in the literature review, this chapter investigates each of the hypotheses with multivariate regression models. Equations and graphs assist in depicting the patterns and associations found in these data. The analyses proceed in the order of the hypotheses as stated in the introduction and as reviewed in Chapter 2. Figure 4.1 shows a correlation matrix of all the variables used in the analyses. It indicates that age, disability, and limitations are negatively correlated with mastery. Education, income, employment, support, and social participation are each positively correlated with mastery. Not surprisingly, disability and functional limitation have a positive correlation, as does age and impairment. These correlations provide a base of bivariate relations for more elaborate multivariate techniques.

**Table 4.1 Correlation Matrix of Variables in Analyses**

	mastery	age	disab	adl	sex	educ	hinc	emp	support
age	-.20								
disable	-.31	-.02							
adl	-.32	.20	.42						
sex	-.02	-.00	.00	.10					
educate	.28	-.27	-.20	-.17	.08				
inc	.24	-.35	-.24	-.28	-.13	.35			
emp	.24	-.51	-.19	-.30	-.17	.22	.41		
support	.34	.03	-.15	-.10	.09	.05	.09	.01	
partici	.14	.00	-.15	-.18	-.00	.29	.24	.11	.11

#### Double-Disadvantage versus Reference Normative (Disability)

Is age is negatively associated with mastery. Table 4.2 shows a regression of mastery on age and disability. The coefficients in Equation 1 suggest that mastery

decreases with age at the same rate for disabled and nondisabled. The only difference is in intercept. That is, disabled have a lower intercept than nondisabled, indicating that they are at a disadvantage across all levels of age.

**Table 4.2 Unstandardized Regression Coefficients (SE)  
of Mastery Regressed on Age, Disability, and Interactions**

	Eq. 4.2a Total	Eq. 4.2b Total	Eq. 4.2c < 60 yrs	Eq. 4.2d 60 plus
Age	-.011 <sup>d</sup> (.001)	-.010 <sup>d</sup> (.002)	-.009 <sup>b</sup> (.004)	-.006 (.005)
Disabled <sup>^</sup>	-.542 <sup>d</sup> (.039)	-.388 <sup>d</sup> (.150)	-.017 (.256)	-.813 (.522)
Gender <sup>^</sup>		-.035 (.039)	-.030 (.060)	-.048 (.052)
Disabled * Age		-.003 (.002)	-.012 <sup>a</sup> (.006)	.004 (.007)
Disabled * Gender				
Intercept	4.55	4.51	4.45	4.25
N	1577	1577	732	845
R <sup>2</sup>	.144	.145	.135	.122

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001

<sup>^</sup> For Disabled, 1 = Yes; For Gender, 1 = Women

The first regression output shown in Table 4.2 produces the following equation:

$$M = 4.55 - .011(A) - .542(D) \quad (4.2a)$$

Among non-disabled (0), the equation simplifies to:

$$M = 4.55 - .011(A)$$

Among disabled (1), the equation becomes:

$$M = 4.55 - .011(A) - .542$$

$$M = 4.008 - .011(A)$$

The Y-intercepts differ by the amount of the coefficient on disability (-.542). If we graph mastery on age, the two lines would differ only in intercept, with the disabled at a

.542 deficit (Figure 4.1). The slopes suggest that mastery decreases with age, but at the same rate for both disability statuses. That is, for any given age, disabled persons tend to have lower mean level of mastery than nondisabled. The t-test on the coefficient for disability ( $t = -13.87, P < .0001$ ) indicates the intercepts are significantly different. These results lend support for the hypothesis that the disabled are at a disadvantage in mastery across the entire age span. The coefficient on age,  $-.011$ , lends support for the hypothesis that age is negatively associated with mastery. Figure 4.1 visually depicts the different regression lines for disabled and nondisabled.

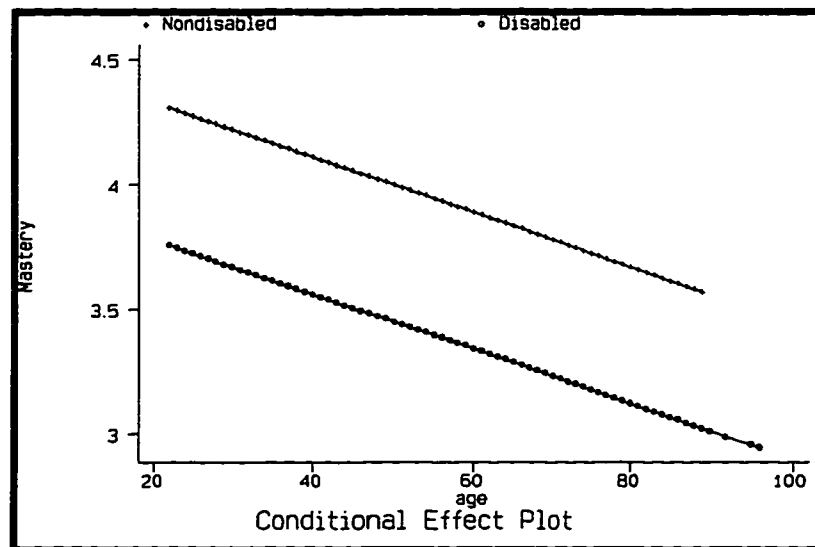


Figure 4.1 Mastery on Age by Disability Status  
Regression lines from Equation 4.2a of Table 4.2

To test for an age by disability interaction effect, an interaction was created and entered into the equation. The double-disadvantage of age and disability will be confirmed if the intercepts for disabled and nondisabled are relatively close and the slope for the disabled is steeper. Conversely, disability may combine with age such that the intercepts

are far apart but the lines converge with age—support for the reference normative hypothesis. The reference-normative comparison hypothesis suggests that the association between age and mastery will be more strongly negative among those without a disability. If true, the intercepts for disabled and nondisabled should be far apart, and the slope for the disabled should be less steep. That pattern suggests that at a young age the disabled have the disadvantage in mastery compared to their same-age counterparts. Both of these hypotheses require analyses of a disability by age interaction term.

As shown in Equation 4.2b, a disabled by age interaction term was entered into the equation and produces the following:

$$M = 4.51 - .010(A) - .388(D) - .035(G) - .003(AD) \quad (4.2b)$$

for nondisabled (0):

$$M = 4.51 - .010(A) - .035(G)$$

for disabled (1):

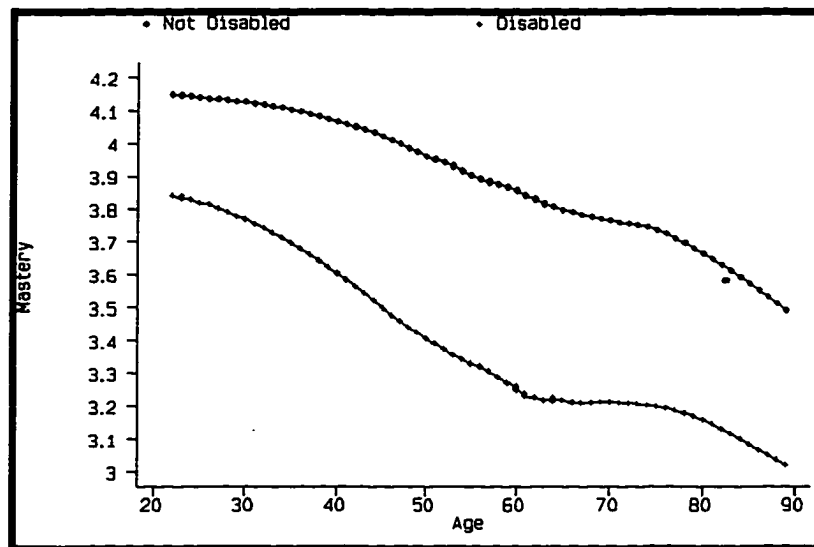
$$M = 4.12 - .013(A) - .035(G)$$

The slope for age changes from -.010 in the equations above. The difference is not significant ( $t = -1.063$ ,  $P = .288$ ). It is, however, slightly stronger among the disabled group, indicating that age is somewhat more detrimental on mastery for those with a disability. The strength of the difference as indicated by the t-test, however, is not substantial enough to indicate support for the double-disadvantage hypothesis.

Some research suggests nonlinear associations between age and mastery (Mirowsky, 1995). That is, the effect of disability at different levels of age may be nonlinear. Among disabled mastery may decline from an early age to a period right before

late-life (age 55-65) and then level off. There could be several reasons for this, including the possibility that those disabled with lower mastery have died before reaching later periods in the life course. Another reason for slowing in the decline in mastery among the disabled is that by the time they reach older age, they expect to have disability in some form, thus the impact of age on mastery is diminished.

These theoretical ideas prompted further exploratory analyses. Figure 4.2 shows nonparametric regression analyses with a lowess-smoothed graph. "Lowess" refers to locally weighted scatterplot smoothing (Hamilton, 1993).



**Figure 4.2 Lowess Smoothing Regression of Mastery on Age by Disability Status**  
The lines in Figure 4.2 support the claim that, among the disabled, mastery

declines with age until about age 60, then it levels off. This might explain why the linear disability by age term is not significant. The negative age-mastery association found among younger disabled is not consistent across age. In fact, the trend stops from age 60 to 80, only to decline again among the oldest-old.

Given the results of Figure 4.2, separate regressions were performed for respondents aged 60 or younger (Equation 4.2c) and those over age 60 (Equation 4.2d). Interaction results are significant in Equation 4.2c only, and therefore I only describe that equation explicitly below. Refer to Equation 4.2d in Table 4.2 for output for the over 60 age group. The equations for the under age 60 are:

$$M = 4.43 - .017(D) - .009(A) - .012(AD) \quad (4.2c)$$

for nondisabled (0):

$$M = 4.43 - .009(A)$$

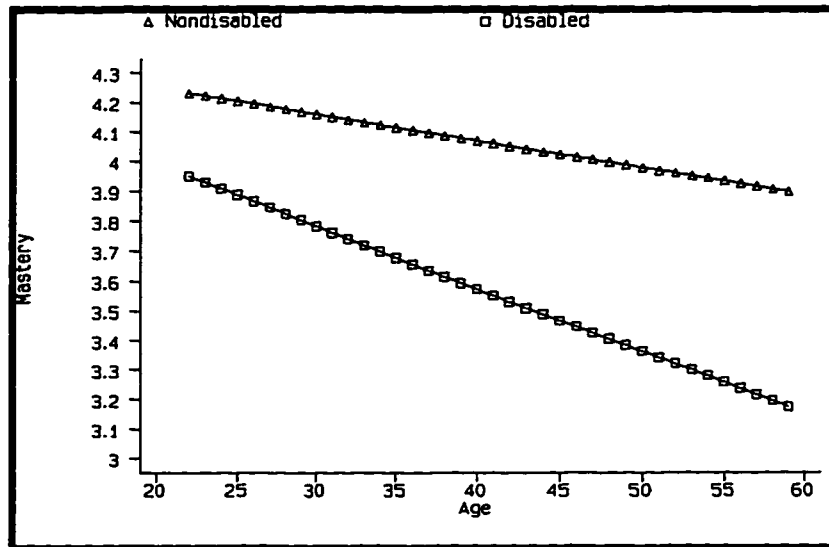
for disabled (1):

$$M = 4.413 - .021(A)$$

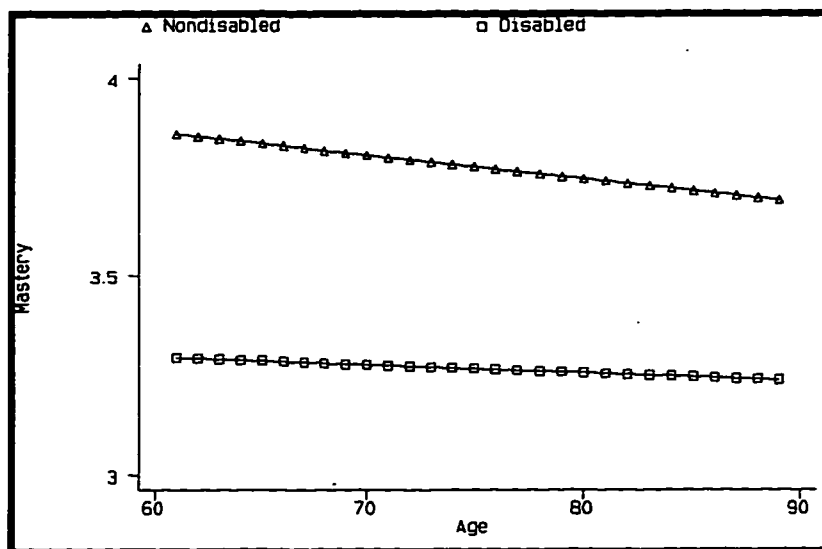
Equation 4.2c and Figure 4.3 show that the intercepts are similar. This indicates that mastery begins at similar levels for both disabled and nondisabled in younger years (evidence contrary to the reference-normative hypothesis). The slopes, however, suggest that mastery is more negatively affected by age among disabled compared to nondisabled, but the effect is apparent only among those under 60 years of age.

These results lend preliminary support for the double-disadvantage hypothesis. Getting older is more detrimental for mastery among the disabled. As shown in Figure 4.2, after age sixty until age eighty the detrimental effect of age stabilizes for the disabled. It may be that disabled are seeing less difference between their physical condition and their age-reference nondisabled counterparts, and thus the detriment of disability on mastery is weakened.





**Figure 4.3 Mastery on Age by Disability Status, Age < 60 Years-Old  
Regression lines from Equation 4.2c of Table 4.2**



**Figure 4.4 Mastery on Age by Disability Status, Age 60 Years and Older  
Regression lines from Equation 4.2d of Table 4.2**

The coefficients in Equations 4.2b, 4.2c and 4.2d of Table 4.2 do not support the reference-normative hypothesis in the manner expected. Disabled and nondisabled are closest in mastery at the youngest age (20). From that point, the lines diverge up to age 60

then begin to converge slightly until age 80, at which point they decline at a similar rate. Figures 4.3 and 4.4 show the separate conditional effect plots for the two age groups. They show that differences in mastery between disabled and nondisabled among ages preceding 60 as becoming increasingly large. After 60, the gap is relatively stable.

**Table 4.3 Unstandardized Regression Coefficients (SE)  
of Mastery Regressed on Age, Disability, Gender and Interactions**

	Eq. 4.3a Women	Eq. 4.3b Men	Eq. 4.3c Total	Eq. 4.3d Women < 60	Eq. 4.3e Men < 60
Age	-.011 <sup>d</sup> (.002)	-.012 <sup>d</sup> (.002)	-.011 <sup>d</sup> (.001)	-.013 <sup>a</sup> (.005)	-.004 (.006)
Disabled <sup>^</sup>	-.485 <sup>d</sup> (.053)	-.613 <sup>d</sup> (.058)	-.612 <sup>d</sup> (.059)	-.314 (.337)	.402 (.393)
Gender <sup>^</sup>			-.094 (.053)		
Disabled * Gender			.127 (.079)		
Disabled * Age				-.004 (.007)	-.022 <sup>a</sup> (.009)
Intercept	4.46	4.62	4.59	4.56	4.25
N	871	706	1577	423	309
R <sup>2</sup>	.127	.169	.146	.123	.158

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001

<sup>^</sup> For Disabled, 1 = Yes; For Gender, 1 = Women

Exploratory analyses indicate that gender is not associated with mastery. Equations 4.3a and 4.3b of Table 4.3 show the coefficients for mastery regressed on age and disability separately for women and men, respectively. These results indicate that disability is slightly more negative for mastery among men. To test the gender by disability interaction, an interaction term was included in the model and the output is shown in Equation 4.3c. The interaction is not statistically significant. The remaining regression output shown in the table examines the possibility of different disability by age interactions for men and women.

Comparing coefficients on disability between 4.3a and 4.3b, we can conclude that disability is more negatively associated with mastery for men. The equations are:

For women:

$$M = 4.46 - .011(A) - .485(D) \quad (4.3a)$$

for nondisabled (0):

$$M = 4.46 - .011(A)$$

for disabled (1):

$$M = 3.975 - .011(A)$$

For men:

$$M = 4.62 - .012(A) - .613(D) \quad (4.3b)$$

for nondisabled (0):

$$M = 4.62 - .012(A)$$

for disabled (1):

$$M = 4.007 - .012(A)$$

Figure 4.5 shows the regression lines for women and for men. While nondisabled men start off with higher mastery than women and maintain the advantage across the age-span, disabled men start off with almost identical mastery as women and fall slightly below them over the age-span. The consideration of disability status reduces the Y-intercept for women by 10.8 percent (from 4.46 to 3.975), while men experience a higher decline in Y-intercept at 13.3 percent (4.62 to 4.007). This suggests that the effect of disability on mastery depends, in part, upon gender such that disability is generally worse for mastery

among men. The differences, however, are not large. Indeed, they look quite minor (and insignificant).

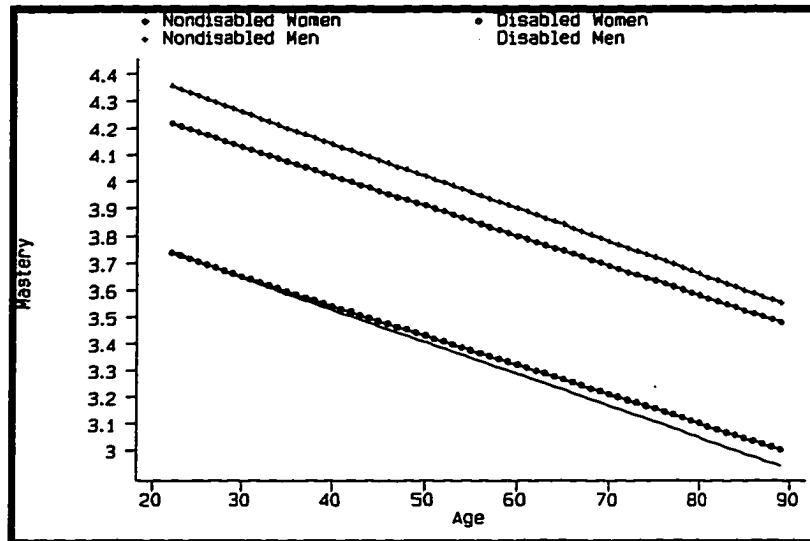


Figure 4.5 Mastery on Age by Gender and Disability Status  
Regression lines from Equation 4.3a and 4.3b of Table 4.3

While these separate regressions suggest slight differences between men and women, to test significance for the interaction a disability by gender interaction term was created and included in the model. The results in Equation 4.3c in Table 4.3 suggest that the interaction is not significant. They produce the following equation:

$$M = 4.59 - .011(A) - .612(D) - .084(G) + .127(GD) \quad (4.3c)$$

The coefficients in Equation 4.3c suggest that disability and gender combine in their effects on mastery such that the slope for mastery on disability is greater by .127 for women; that is, being female reduces the negative effect of disability on mastery by .127. The coefficient on the interaction of disability and gender, however, produces a t-statistic that is not great enough to produce a p-value less than .05 ( $t = 1.615$ ;  $P = .107$ ). The

interaction term is not significant, although the findings do suggest that the effect of disability on mastery is to some small degree conditional upon gender such that disability takes a greater toll on mastery among men.

There are several possibilities for a disability by gender interaction explored here. The first suggests that physical strength and capacity is more important for men. If that is true, a disabling condition that raises weakness in the physical sphere of life might be more detrimental for men—hence, a double-disadvantage in terms of mastery of being male and disabled. In contrast, women may be more affected by comparisons between self and others in their reference group. If this is so, having a disability at younger ages may be more detrimental for women as they make comparisons with their “healthy” counterparts. Being disability and female may pose a double-disadvantage for mastery. Both hypotheses seem plausible and require an examination of gender, disability and mastery.

To test these hypotheses, separate regressions were performed separately for men and women under age 60 and over. Results shown in Equations 4.3d and 4.3e in Table 4.3 are only for those respondents under age 60; no significant results were found for the over 60 groups. The models for men and women over age 60 did not differ and the disability by age interaction terms were not significant. Only the results for the younger group are shown in Equations 4.3d and 4.3e in Table 4.3 and produce the following regression equations:

For women:

$$M = 4.56 - .013(A) - .314(D) - .004(AD) \quad (4.3d)$$

for nondisabled (0):

$$M = 4.56 - .013(A)$$

for disabled (1):

$$M = 4.25 - .017(A)$$

Among women less than 60 years-old, the interaction term (-.004) is not significant. Although age is slightly more detrimental for mastery among disabled women compared to nondisabled (-.017 versus -.013), the difference is not large enough to produce a significant t-statistic. In contrast, Equation 4.3e in Table 4.3 depicts a regression results for men under age 60 which suggests that age and disability combine to be “doubly-disadvantageous” for men. The results produce the following equation:

For men:

$$M = 4.25 - .004(A) + .402(D) - .022(AD) \quad (4.3e)$$

for nondisabled (0):

$$M = 4.25 - .004(A)$$

for disabled (1):

$$M = 4.652 - .026(A)$$

The interaction term (-.022) is significant ( $t = -2.542$ ,  $P = .012$ ). Men are more likely to experience a dramatic loss of mastery across the life course until around age sixty—but only if they are disabled. The same cannot be said about women. Disabled women are worse off than nondisabled women, but the decline across the age-span is relatively similar between the two. In contrast, disabled men are worse off than nondisabled men and the difference becomes more dramatic across age group. The disability by age interaction matters differently for men and women, with men’s mastery

lower if they are disabled and younger. Figure 4.6 shows that the slope of mastery on age for disabled men is more negative than women in the same group.

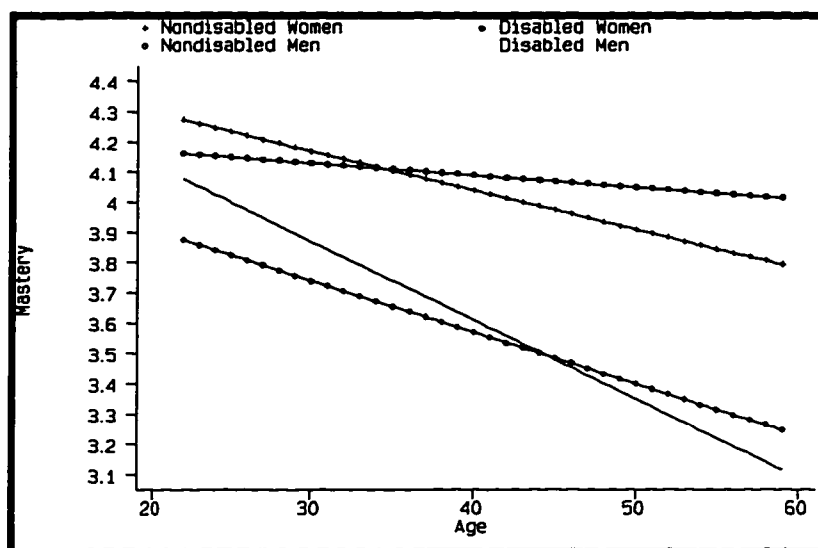


Figure 4.6 Mastery on Age by Disability and Gender, Age < 60  
Regression lines from Equation 4.3d and 4.3e of Table 4.3

To summarize, the results indicate preliminary support for the double-disadvantage hypothesis for age and disability in that age is more detrimental for mastery among the disabled. Mastery, however, is particularly negatively affected by age among those disabled under age sixty. Beyond that age, the apparent “double-disadvantage” of age and disability status stabilizes. Is the reference-normative hypothesis supported for those in the older age groups? While the levels of mastery are different for disabled and nondisabled after age 60, they do not jointly combine in their negative effects. It may be that through those years, the disabled are making normative references about their physical conditions and not feeling unusually disadvantaged in terms of mastery. Thus, the double-disadvantage apparent in younger age groups disappears.

On the surface, the double-disadvantage is supported. While the youngest ages are close in mastery, the largest detriment for mastery occurs during the period of age forty to sixty. Why is the largest gap in mastery between disabled and nondisabled is between those years? It may be the period when one is expected to have many roles that requires adequate physical resources to carry out daily tasks. Disabled in those age groups may be referencing their age-peers and seeing themselves as worse off in terms of ability to handle daily tasks, and perhaps life goals and outcomes. The possible greater optimism of the younger age groups in perceived life chances and the possible disadvantages of disability may emerge as more salient for identity and self-potency during that period, particularly if one becomes more reflective about family, work and personal accomplishments. In this case, disability may really be indicative of aspects of identity that are central to the reference-normative hypothesis.

When gender is added to the equation, there is greater support for the reference-normative hypothesis. First, men and women are not significantly different in mastery. The effect of disability on mastery, however, is more influential if we consider gender—with men faring more poorly with combined age and disability. Moreover, the effect is dramatically more detrimental among men under age sixty. Men may have the more difficult time being disabled during an age period in the life course where they are expected to be fully engaged in various spheres of productive and robust activity.



### Double-Disadvantage versus Reference-Normative (Limitations)

The double-disadvantage hypothesis suggests that the association between age and mastery depends on limitations such that the association is more strongly negative among those at higher limitations. The rationale is the same for the disability by age interaction: that limitations and age have a jointly-negative effect on the sense of control. In contrast, the reference-normative comparison hypothesis states that the association between limitations and mastery depends on age such that the association will be more strongly negative among those at younger ages. The rationale is that high limitations are less normative for those at younger ages and therefore more powerfully erode the sense of control. The difference between this and the disability by age interaction is that limitations is a continuous index of difficulties in activities of daily living.

Table 4.4 shows results of regression analyses similar to those found in Tables 4.2 and 4.3. The difference is the former employs the continuous variable of ADLs instead of the dichotomous disability variable. In analyses of disabled only, Equation 4.4a of Table 4.4 confirms that age and limitations each have direct negative effects on mastery. The coefficient on limitations (-.264) is significant, suggesting that those with higher functional limitations tend to have lower mastery. It is also noted, however, that the distribution of limitations is severely positively skewed (skewness statistic = 1.88). Hamilton (1992) argues that regression does not require assumptions about the distribution of X variables. In practice, however, distributions with skew may be associated with problems like influence and heteroscedasticity. This is important here given that some respondents seem to have very high limitation—but there are only a few.

**Table 4.4 Unstandardized Regression Coefficients (SE) of Mastery Regressed on Age, Limitations, and Interaction (Disabled Only)**

	Eq. 4.4a	Eq. 4.4b <sup>a</sup>	Eq. 4.4c
Age	-.009 <sup>d</sup> (.001)	-.008 <sup>d</sup> (.001)	-.019 <sup>d</sup> (.005)
Limitations	-.264 <sup>d</sup> (.043)	-.165 <sup>d</sup> (.026)	-.637 <sup>d</sup> (.163)
Gender <sup>^</sup>	.009 (.039)	.100 (.060)	.074 (.060)
Limitations * Age			.006 <sup>a</sup> (.003)
Intercept	4.25	3.61	4.77
N	727	727	727
R <sup>2</sup>	.100	.104	.109

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001

<sup>\*</sup>Transformed Limitations Variable; <sup>^</sup> 1 = Women

To avoid potential statistical problems, transformations were performed that reduced the skewness statistic for the functional limitations variable to zero. As shown in Equation 4.4b, this had little effect on the regression equation. The coefficient on limitations is still negative and significant. Analyses proceeded, however, with tests of both transformed and nontransformed limitations. Given the small differences between the two, beyond the Equation in 4.4a I only report results that employ non-transformed limitations.

Equation 4.4c includes the age by limitations (nontransformed) interaction term. The coefficient of .006 and the corresponding significant t-statistic suggests that age has an effect on mastery that differs by level of functional impairment. The below show that as limitations increase, the intercept decreases dramatically but the negative effect of age on mastery also decreases significantly. There is no support for the double-disadvantage of limitations and age. Quite the contrary, these finding support the reference-normative hypothesis; that is, at younger ages those with higher limitations have dramatically worse

mastery. As age increases, the mean levels of mastery between those with high and low limitations actually converge. At younger ages, these limits are not normative while at older ages, greater limitations are expected. The difference is evident in the following equations and in Figure 4.7:

$$M = 4.77 - .019(A) - .637(L) + .074(G) + .006(AL) \quad (4.4c)$$

at low limitations = 1 the equation simplifies to:

$$M = 4.063 - .013(A) + .074(G)$$

at high limitations = 4 the equation simplifies to:

$$M = 2.22 + .005(A) + .074(G)$$

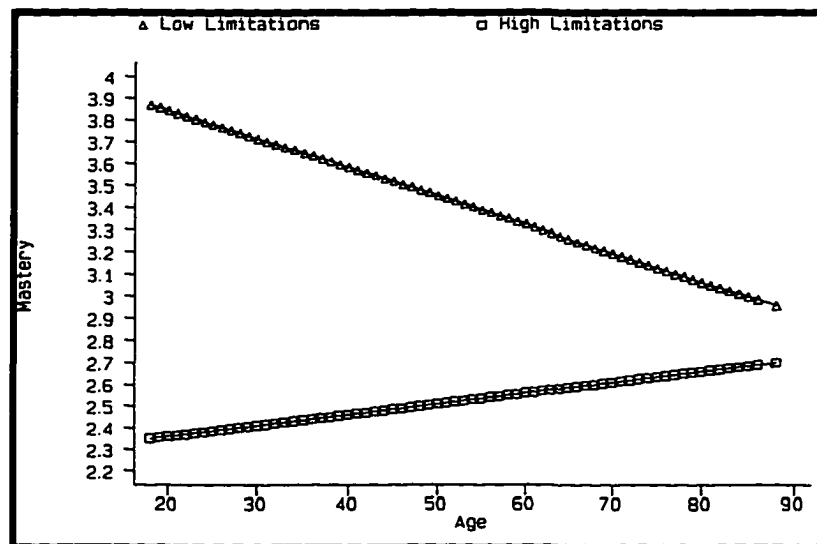


Figure 4.7 Mastery on Age and Functional Limitations  
Regression lines from Equation 4.4c of Table 4.4

It seems plausible that getting more frail or impaired could affect mastery differently for men and women. Comparing men and women separately in Equations 4.5a and 4.5b of Table 4.5, limitations have a similarly negative impact on mastery. To test for

the possibility of an interaction between limitations and age, the Equations 4.5c and 4.5d in Table 4.5 include a limitations by age interaction term. The coefficients suggest a joint effect of age and limits on mastery among men only.

**Table 4.5 Unstandardized Regression Coefficients (SE) of Mastery Regressed on Age, Limitations, Gender, and Interaction (Disabled Only)**

	Eq. 4.5a Women	Eq. 4.5b Men	Eq. 4.5c Women	Eq. 4.5d Men
Age	-.007 <sup>d</sup> (.003)	-.013 <sup>d</sup> (.003)	-.012 <sup>a</sup> (.006)	-.029 <sup>d</sup> (.007)
Limitations	-.274 <sup>d</sup> (.057)	-.258 <sup>d</sup> (.068)	-.468 <sup>a</sup> (.204)	-.901 <sup>c</sup> (.274)
Limitations *Age			.003 (.003)	.011 <sup>a</sup> (.004)
Intercept	4.08	4.41	4.46	5.30
N	4.17	319	408	319
R <sup>2</sup>	.093	.121	.095	.138

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001

Equation 4.5c in Table 4.5 produces the following:

For women:

$$M = 4.46 - .012(A) - .468(L) + .003(LA) \quad (4.5c)$$

with low limitations (1):

$$M = 3.99 - .009(A)$$

with high limitations (4):

$$M = 2.59 + .000(A)$$

For men:

$$M = 5.30 - .029(A) - .901(L) + .011(LA) \quad (4.5d)$$

with low limitations (1):

$$M = 4.40 - .018(A)$$

with high limitations (4):

$$M = 1.69 + .015(A)$$

These results suggest that the effect of age on mastery is further conditioned by gender such that men fare much more poorly at younger ages if they have higher limitations. As age increases, the difference between men with high and low limits converges. The same pattern is not apparent among women. These gender differences are consistent with the previous findings of the disability by age interaction. Tests of the same model for those under age 60 compared to older groups, however, reveal no differences and are not shown in the table. Figure 4.8 shows the dramatic interaction between age and limitations by gender.

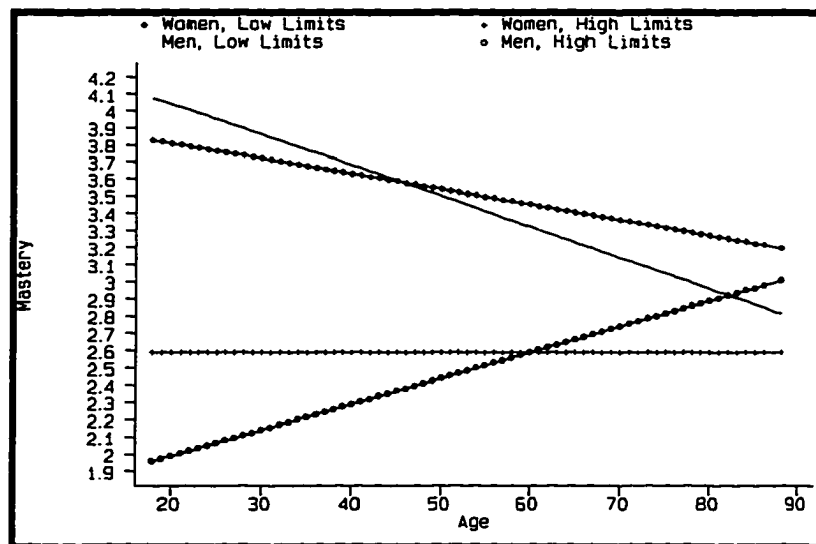


Figure 4.8 Mastery on Age and Limitations by Gender  
Regression lines from Equation 4.5c and 4.5d of Table 4.5

To summarize, the evidence suggests that the normative-reference comparison is more salient for men than women. That is, the negative effect of functional impairment on

mastery is greater at younger ages for both genders, but it is far more dramatic among men. The largest limitations gap in mastery is apparent among the youngest men. In fact, at the very oldest ages, the limitations gap in mastery converges and cross for men. The limitations gap closes somewhat for women.

### Hypotheses of Reflected Impairment and Resource Disadvantage

The rationale for the hypothesis of reflected impairment is that the negative age-mastery association is likely due to the increased impairment that comes with age. If true, then part of the age-mastery negative association is really indirect via limitations. After adjusting for limitations, the age-mastery coefficient should be reduced. The rationale for the resource disadvantage hypothesis is that the negative disability-mastery association is likely due to the disadvantaged resource status of the disabled. Lower education, employment, and income level of the disabled are the culprit, at least partly, in explaining their lower sense of mastery. These resources are positively associated with mastery and are lower among disabled. This may lead to the mastery gap between disabled and nondisabled. The same theory underlies the negative age-mastery association.

Table 4.6 shows regression analyses testing these effects on the disability-mastery association. Equation 4.6a of Table 4.6 suggests that the unadjusted difference between the mean mastery of disabled and nondisabled is  $-.532$ , with disabled experiencing lower average mastery. Why is that the case? Simple bivariate analyses suggest that the disabled are disadvantaged in three important socioeconomic resources. Disabled tend to have lower education, lower income, and are less likely to be employed compared to

nondisabled. The rationale the analyses which produced the regression output in Table 4.6 is driven by these previous findings and the hypothesis of resource disadvantage. This states that the lower mastery among disabled are due, in part, to their lower education, lower income, and lower likelihood of being employed (three resources that are positively associated with a sense of mastery).

The rationale for the inclusion of the first three equations in Table 4.6 is to show how education independently affects the disability-mastery association and how disability affects the expected benefits of education on mastery. The inclusion of Equations 4.6d, 4.6e, and 4.6f examines the same associations, replacing education with income. Finally, Equation 4.6g examines employment, and Equation 4.6h includes all of the status variables. While it may seem unnecessary to show each of these equations, I chose to display them to allow the reader to assess how the sequential adding and removing variables from the equation influences change in the coefficients.

**Table 4.6 Unstandardized Regression Coefficients (SE) of Mastery Regressed on Disability, Education, Employment and Income\***

	Eq. 4.6a	Eq. 4.6b	Eq. 4.6c	Eq. 4.6d	Eq. 4.6e	Eq. 4.6f	Eq. 4.6g	Eq. 4.6h
Disabled	-.532 <sup>d</sup> (.040)	-.453 <sup>d</sup> (.040)		-.454 <sup>d</sup> (.041)		-.414 <sup>d</sup> (.041)	-.469 <sup>d</sup> (.041)	-.395 <sup>d</sup> (.041)
Education		.056 <sup>d</sup> (.006)	.070 <sup>d</sup> (.006)			.046 <sup>d</sup> (.006)		.044 <sup>d</sup> (.006)
Income				.042 <sup>d</sup> (.006)	.057 <sup>d</sup> (.006)	.028 <sup>d</sup> (.006)		.016 <sup>b</sup> (.006)
Employment							.333 <sup>d</sup> (.041)	.227 <sup>d</sup> (.044)
N	1577	1577	1577	1501	1501	1501	1577	1501
Intercept	3.87	3.19	2.83	3.51	3.19	3.08	3.10	3.10
R <sup>2</sup>	.101	.151	.081	.130	.060	.161	.137	.175

\* Disabled and Non-disabled Respondents

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001

Equation 4.6b of Table 4.6 indicates that, after adjusting for education, the coefficient on disability drops from  $-.532$  to  $-.453$ . The coefficient associated with disability becomes 14.9 percent smaller with adjustment for education, as shown by comparison of Equation 4.6a and 4.6b (Row 1) of Table 4.6; that is,  $(-.532 - (-.453)) / -.532 = .149$ . It should also be noted that disability undermines some of the positive effect of education on mastery. Comparing the unadjusted coefficient on education in Equation 4.6c to the disability-adjusted coefficient in Equation 4.6b, the coefficient decreases from  $.070$  to  $.056$ ; that is  $(.070 - (.056)) / .070 = .20$ . Statistically, adjustment for disability appears to account for roughly one-fifth of the positive association between education and the sense of mastery.

How much of the disability-mastery association is explained by the lower income of disabled? Equation 4.6d in Table 4.6 shows the coefficient on disability controlling for household income. It appears that income has roughly the same effect as education, with the decrease in the disabled coefficient (by 14.9%) practically mirroring that in Equation 4.6b. Comparing the coefficients on income in Equations 4.6e and 4.6d, it appears that adjusting for disability weakens some of the positive effect of income on mastery. The adjusted coefficient on income drops from  $.057$  to  $.042$ ; that is, adjustment for disability appears to account for more than one-fourth of the association between income and mastery  $(.057 - (.042)) / .057 = .263$ .

How much does adjustment for both education and income effect the disability-mastery association? Equation 4.6f in Table 4.6 shows that the adjustments for education and income account for more than one-fifth of the association between disability and



mastery. The coefficient on disability drops from  $-.532$  in Equation 4.6a to  $-.414$  in Equation 4.6f, a decrease of  $.222$  or  $22.2\%$ .

Equation 4.6g of Table 4.6 shows that adjustment for employment status accounts for less of the disability-mastery association than education or income does. The final column, however, suggests that adjustment for education, income, and employment status accounts for more than one-fourth of the association between disability and mastery. The coefficient associated with disability becomes  $25.8$  percent smaller with adjustment for those three socioeconomic factors, as shown by comparison of Equation 4.6h with Equation 4.6a; that is,  $(-.532 - (-.395)) / -.532 = .258$ . The final overall model shown in Equation 4.6h also explains  $17.5\%$  of the total variance in mastery.

How much of education's effect on mastery is due to income? Comparing the coefficients on education in Equations 4.6b and 4.6f of Table 4.6, roughly  $17.9\%$ ,  $(.056 - (.046)) / .056 = .179$  of education's effect on mastery is due to income. Conversely, comparing the coefficients on income in Equations 4.6d and 4.6f, roughly  $33\%$ ,  $(.042 - (.028)) / .042 = .333$ , of income's effect on mastery is due to education. Finally,  $42.9\%$ ,  $(.028 - (.016)) / .028 = .429$ , of income's effect is due to employment status.

To summarize, the negative effect of disability is reduced by education, income and employment. That is, more than one-fourth of the negative association between disability and mastery is explained via their lower education, lower income, and lower employment. These factors are, in combination and individually, negatively associated with disability status and positively associated with the sense of mastery. These analyses confirm the hypotheses of resource disadvantage—the disabled are restricted in obtaining these

essential resources, and to the extent that is true, the disadvantage of being disabled translate to lower levels of perceived control via these important sociostructural resources.

While the three socioeconomic variables in Table 4.6 are related in the expected ways, education accounts for the largest reduction in the disability coefficient. This finding suggests that of all three resources, education is the resource with the most influence on the disability-mastery association.

The equations in Table 4.7 show regression results of mastery on education, income and employment sequentially for nondisabled individuals only.

**Table 4.7 Unstandardized Regression Coefficients (SE) of Mastery Regressed on Age and Status Variables\***

	Eq. 4.7a	Eq. 4.7b	Eq. 4.7c	Eq. 4.7d	Eq. 4.7e
Age	-.009 <sup>d</sup> (.001)	-.007 <sup>d</sup> (.001)	-.007 <sup>d</sup> (.001)	-.006 <sup>c</sup> (.002)	-.003 (.002)
Education		.036 <sup>d</sup> (.007)			.030 <sup>d</sup> (.007)
Income			.030 <sup>d</sup> (.008)		.018 <sup>a</sup> (.008)
Employment				.171 <sup>b</sup> (.061)	.119 (.063)
N	850	850	818	850	818
Intercept	4.45	3.86	4.03	4.17	3.52
R <sup>2</sup>	.042	.068	.060	.051	.080

\* Non-disabled Respondents

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001

Equation 4.7a in Table 4.7 shows the unadjusted coefficient for age is - .009. Adjustment for education reduces the coefficient by 22% to - .007. The same is true for household income. Adjustment for employment had the largest effect (reduced by 33%) on the coefficient to - .006. Adjusting for all three resources almost reduces the negative effect of age on mastery to just - .003. The coefficient is no longer significant, suggesting

that much (67%) of the negative effect of age on mastery occurs via education, income and employment. Also noteworthy is the finding that education explains most of income's and employment's effect on mastery. That is, when all three statuses are included in the model, the effect of education is stable, while the effect of income is reduced by about 40% and that of employment about 30%. This is consistent with previous research that suggests much of the effect of these other status variables is due to education, which logically precedes the other two in causal order (Mirowsky, 1995).

Table 4.8 shows the same regression models tested in Table 4.7 but use only disabled respondents. Given that disabled have ADLs allows for the examination of the effect of limitations on the age-mastery association.

**Table 4.8 Unstandardized Regression Coefficients (SE) of Mastery on Age, Status, and Limitation Variables\***

	Eq. 4.8a	Eq. 4.8b	Eq. 4.8c	Eq. 4.8d	Eq. 4.8e	Eq. 4.8f	Eq. 4.8g
Age	-.012 <sup>d</sup> (.001)	-.009 <sup>d</sup> (.001)	-.010 <sup>d</sup> (.002)	-.009 <sup>d</sup> (.002)	-.006 <sup>b</sup> (.002)	-.009 <sup>d</sup> (.001)	-.005 <sup>a</sup> (.002)
Education		.058 <sup>d</sup> (.009)			.054 <sup>d</sup> (.010)		.053 <sup>d</sup> (.010)
Income			.023 <sup>b</sup> (.009)		.007 (.009)		.001 (.009)
Employment				.237 <sup>b</sup> (.075)	.194 <sup>d</sup> (.077)		.104 (.078)
Limitations						-.158 <sup>d</sup> (.026)	-.130 <sup>d</sup> (.027)
N	727	727	683	727	683	727	683
Intercept	4.06	3.28	3.80	3.81	3.04	3.68	2.89
R <sup>2</sup>	.055	.010	.063	.068	.109	.101	.138

\* Disabled Respondents

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001

Equation 4.8a in Table 4.8 shows the unadjusted effect of age on mastery at -.012. A quick comparison between Equation 4.7a of Table 4.7 and Equation 4.8a of Table 4.8 shows that the negative effect of age on the sense of control is more negative among the

disabled. As shown in Table 4.8, adding education (Eq. 4.8b) to the model reduces the coefficient on age by 25 percent. Adding income (Eq. 4.8c) has less of an effect on age. Employment (Eq. 4.8d) has similar effects as education. Equation 4.8e includes all three resources. Similar to that depicted in Table 4.7, these three combined reduce the negative effect of age on mastery by 50 percent. And consistent with the observed pattern in the previous table, much of income's effect occurs via education and employment.

Equation 4.8f in Table 4.8 shows the effect of limitations on the age coefficient. It reduces it by 25 percent. Along with the three resources, limitations (Eq. 4.8g) reduces the overall negative effect of age on the sense of mastery from  $-.012$  to  $-.005$  or by 59 percent. In that final model, only limitations and education are significant. Most of the effect of employment and income occurs via education and limitations.

To summarize, among nondisabled the negative effect of age on mastery is reduced by 22 percent with education and income adjusted sequentially. That is, more than one-fifth of the negative association between age and mastery is explained via their lower education or their lower income. When employment is adjusted, the age coefficient drops by 33 percent. All three combined reduce the negative effect of age on mastery by sixty-seven percent. These factors are, in combination and individually, negatively associated with age status and positively associated with the sense of mastery. These analyses confirm the hypotheses of resource disadvantage—the aged are disadvantaged in these resources, and to the extent that is true, the disadvantage of being older translates to lower levels of perceived control via these important sociostructural resources.

To summarize for the disabled sample, education, income, and employment combine to reduce the negative impact of age on mastery by half. Education and limitations individually account for approximately the same amount (25 percent) of the age-mastery association. In the final model with three status and limitations adjusted, the age coefficient is reduced by 59 percent. Almost all of the effect of income and employment is explained by education. These results confirm the resource disadvantage and the reflected impairment hypothesis.

#### Education: Cultivated Resourcefulness versus Undermined Benefit

Does education buffer against the detrimental effects of disability on mastery? The analyses that follows tests the hypothesis of cultivated resourcefulness versus the undermined benefit hypothesis. The former suggests that education produces resources that can diminish the impact of disability on mastery. A negative interaction term suggests that education cultivates resources to buffer the harmful effect of disability on mastery. The latter hypothesis states that the beneficial resources of education are undermined by disability. A positive interaction term suggests that education weakens the negative disability-mastery association.

Equation 4.9a of Table 4.9 shows regression results that produce the following equation:

$$M = 3.31 - .716(D) + .047(E) + .024(ED) \quad (4.9a)$$

for nondisabled (0):

$$M = 3.31 + .047(E)$$

for disabled (1):

$$M = 2.594 + .071(E)$$

Equation 4.9b of Table 4.9 shows output controlling for age and sex:

$$M = 3.98 - .761(D) - .062(S) + .035(E) - .008(A) + .026(ED) \quad (4.9b)$$

for nondisabled (0):

$$M = 3.98 - .062(G) + .035(E) - .008(A)$$

for disabled (1):

$$M = 3.22 - .062(G) + .061(E) - .008(A)$$

**Table 4.9 Unstandardized Regression Coefficients (SE) of Mastery Regressed on Disability, Education, Age and Interactions\***

	Eq. 4.9a Total	Eq. 4.9b Total	Eq. 4.9c Women	Eq. 4.9d Men	Eq. 4.9e Disabled
Disability <sup>^</sup>	-.716 <sup>d</sup> (.139)	-.761 <sup>d</sup> (.137)	-.865 <sup>d</sup> (.192)	-.571 <sup>c</sup> (.198)	
Education	.047 <sup>d</sup> (.008)	.035 <sup>d</sup> (.008)	.039 <sup>d</sup> (.011)	.032 <sup>c</sup> (.011)	.056 <sup>a</sup> (.011)
Gender <sup>^</sup>		-.062 (.039)			.065 (.060)
Age		-.008 <sup>d</sup> (.001)	-.008 <sup>d</sup> (.002)	-.009 <sup>d</sup> (.002)	-.006 <sup>a</sup> (.001)
Education*Disability	.024 <sup>a</sup> (.019)	.026 <sup>d</sup> (.012)	.040 <sup>b</sup> (.016)	.001 (.017)	
Limitations					-.194 <sup>a</sup> (.090)
Education * Limitations					.003 (.008)
N	1577	1577	871	706	727
Intercept	3.31	3.98	3.81	4.10	2.93
R <sup>2</sup>	.153	.177	.179	.184	.139

\* Equations 4.9a through 4.9d include disabled and non-disabled respondents

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001

<sup>^</sup> For Disabled, 1 = Yes; For Gender, 1 = Women

The difference between the subset of the equations from 4.9b in Table 4.9 are the intercepts and coefficients on education. It has already been established that the disabled tend to have lower mastery (the lower intercept). The relevant finding here is that the slopes for disabled and nondisabled are different, as signified by the coefficient on the education by disability interaction term. This suggests that the disabled get more benefit from education than nondisabled. That is, the coefficient the produces the slope on education is 43.5 percent larger among the disabled or  $(.062 - .035)/.062 = .435$ .

These results suggest that education does cultivate a sense of resourcefulness, or at least provides more benefits for the sense of mastery among the disabled compared to the nondisabled. So while disabled start off lower in mastery, at higher levels of education, disability poses less of a disadvantage for mastery. Figure 4.9 depicts these associations.

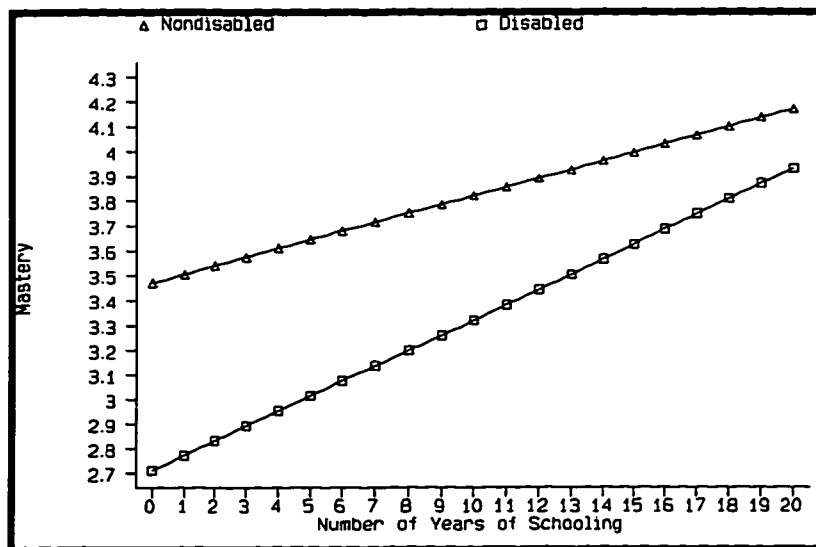


Figure 4.9 Mastery on Education by Disability  
Regression lines from Equation 4.9b of Table 4.9

Does the effect of education on the disability-mastery association differ by gender? In analyses thus far, it has been established that disability and gender interact in their effect on mastery; that is, disability status is more negative for mastery among men. It seems plausible that the educational benefit for mastery among the disabled may be different for men and women. Equations 4.9c and 4.9d include an education by disability interaction and show regression results for women and men, respectively. They produce the following equations for women and men:

for women:

$$M = 3.81 - .865(D) + .039(E) - .008(A) + .040(ED) \quad (4.9c)$$

for nondisabled (0):

$$M = 3.81 + .039(E) - .008(A)$$

for disabled (1):

$$M = 2.945 + .079(E) - .008(A)$$

for men:

$$M = 4.10 - .571(D) + .032(E) - .009(A) + .001(ED) \quad (4.9d)$$

for nondisabled (0):

$$M = 4.10 + .032(E) - .009(A)$$

for disabled (1):

$$M = 3.529 + .033(E) - .009(A)$$



The coefficients for the education by disability interaction terms in these equations signify that the interactions are different for men (.001) and women (.040). They show that disabled women have the lowest mastery, controlling for education, age and the interaction between education and disability. They also, however, get the most benefit from education. The coefficient on education is twice as large (.079 vs .039), indicating that the slope of mastery on education is significantly more dramatic among disabled women compared to their nondisabled counterparts. Figure 4.10 displays these results.

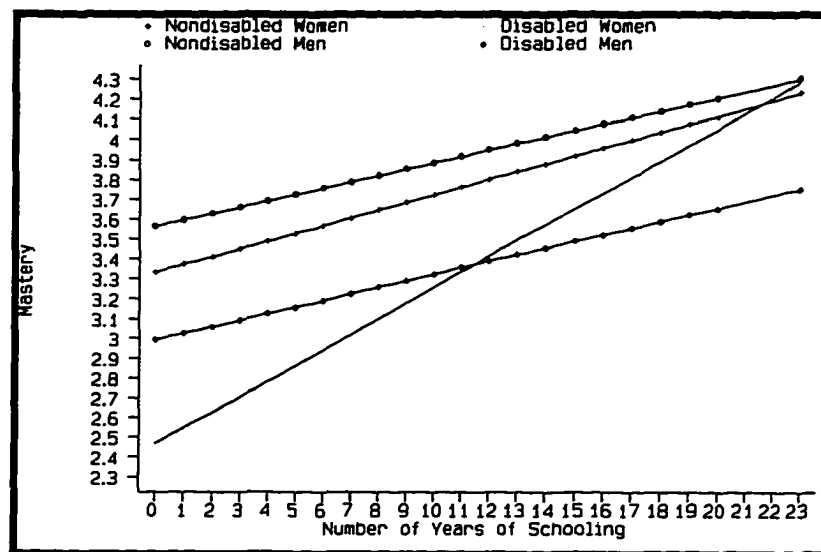


Figure 4.10 Mastery on Education by Disability and Gender  
Regression lines from Equation 4.9c and 4.9d of Table 4.9

Does education matter for the limitations-mastery association? Equation 4.9e of Table 4.9 tests the cultivated resourcefulness versus the undermined benefit hypothesis for limitations and education. If the negative effect of limitations on mastery is reduced by higher education, support is found for cultivated resourcefulness. If the benefits of education are found up to a certain point after which the benefits of education are

undermined, support is found for the undermined benefits hypothesis. The coefficient on the education by limitations interaction term is not significant. Neither hypothesis, therefore, is supported. The interaction term was tested in models for men and women separately, and by age group. In none of these models (not shown in Table 4.9) is the interaction term significant.

Does education matter for the age-mastery association? According to the cultivated resourcefulness hypothesis, education produces resources that can diminish the impact of age on mastery. It could also be that with age, the benefits of education are undermined. Both suggest the effect of age on mastery is conditional upon level of education and require testing an interaction between education and age. The former suggests a positive interaction term; the latter a negative interaction term. Table 4.10 shows output from regressions that test these questions.

**Table 4.10 Unstandardized Regression Coefficients (SE) of Mastery Regressed on Disability, Education, Age and Interaction\***

	Eq. 4.10a Total	Eq. 4.10b Women	Eq. 4.10c Men
Disability <sup>^</sup>	-.466 <sup>d</sup> (.039)	-.394 <sup>d</sup> (.052)	-.559 (.059)
Education	.094 <sup>d</sup> (.022)	.137 <sup>d</sup> (.032)	.050 (.033)
Gender <sup>^</sup>	-.059 (.038)		
Age	.001 (.004)	.007 (.006)	-.005 (.006)
Education*Age	-.001 <sup>a</sup> (.0004)	-.001 <sup>a</sup> (.001)	-.0003 (.001)
N	1577	871	706
Intercept	3.25	2.60	3.88
R <sup>2</sup>	.177	.179	.184

\* Analyses includes disabled and non-disabled respondents

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001

<sup>^</sup> For Disabled, 1 = Yes; For Gender, 1 = Women

From Equation 4.10a in Table 4.10:

$$M = 3.25 - .466(D) + .094(E) - .059(G) + .001(A) - .001(EA) \quad (4.10a)$$

at low education (5 years):

$$M = 3.72 - .466(D) - .059(G) - .004(A)$$

at the mean of education (11 years):

$$M = 4.28 - .466(D) - .059(G) - .01(A)$$

at high education (16 years):

$$M = 4.75 - .466(D) - .059(G) - .015(A)$$

These equations show negative interaction terms, suggesting support for the undermined benefit hypothesis. That is, at higher levels of education, the age-mastery association is more negative. Figure 4.11 depicts the associations. As age increases, the benefits of high education are almost entirely undermined.

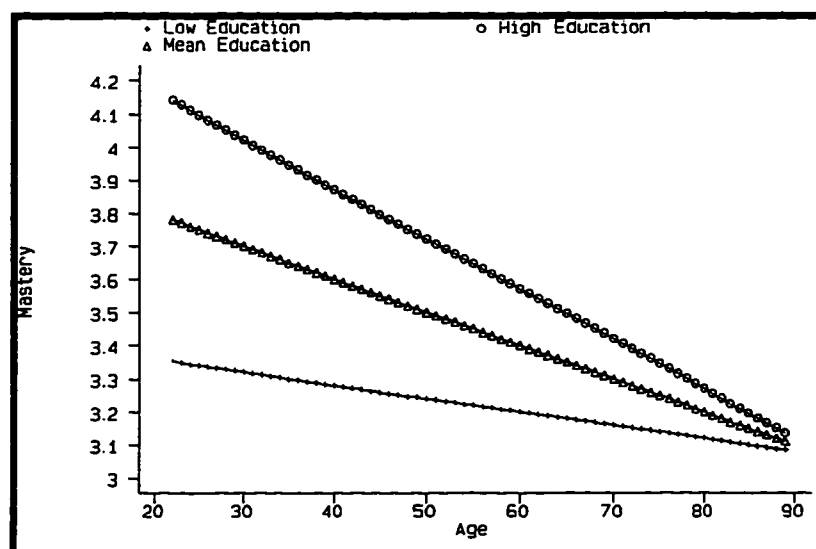


Figure 4.11 Mastery on Age by Education  
Regression lines from Equation 4.10a  
with low, medium, and high educational attainment

To test for a gender difference in the conditional effect of education and age on mastery, separate regressions were performed for men and women. The results are shown in Equations 4.10b and 4.10c in Table 4.10 and produce the following equations:

For women:

$$M = 2.60 - .394(D) + .137(E) + .007(A) - .001(EA) \quad (4.10b)$$

for low education (5):

$$M = 3.29 - .394(D) + .002(A)$$

for high education (16):

$$M = 4.79 - .394(D) - .009(A)$$

For men:

$$M = 3.88 - .559(D) + .050(E) - .005(A) - .0003(EA) \quad (4.10c)$$

for low education (5):

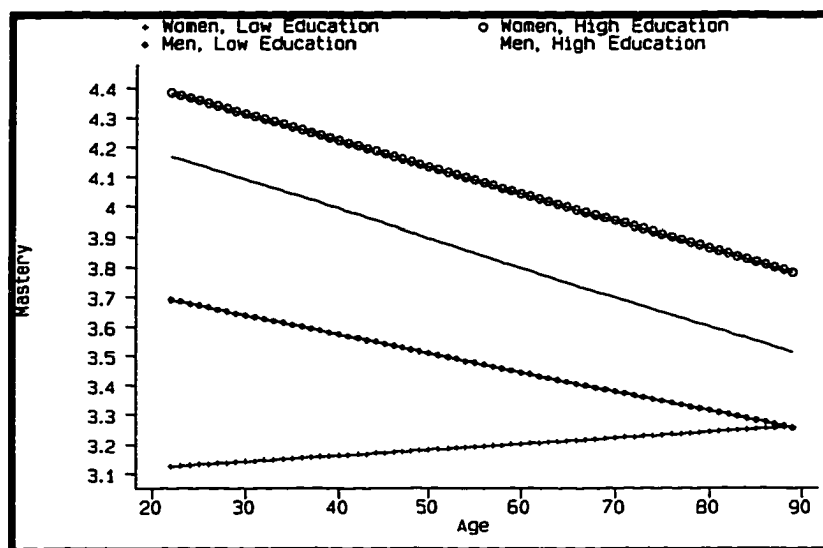
$$M = 4.13 - .559(D) - .0065(A)$$

for high education (16):

$$M = 4.68 - .559(D) - .0098(A)$$

These equations suggest that the effect of education on the age-mastery association is different for men and women. High education seems to buffer the negative effect of age on mastery slightly more so for women compared to men. The more striking aspect of the difference here is among low educated women. It appears that at low levels of education, mastery slightly increases with time. Among high and low educated men, the main difference in the age-mastery association is in the intercept. The slopes are not

substantially different. Among high and low educated women, both the intercepts and the slopes are dramatically different. Figure 4.12 shows the regression lines.



**Figure 4.12 Mastery on Age by Education and Gender**  
**Regression lines from Equation 4.10b and 4.10c**  
**with low, medium, and high educational attainment**

To summarize, education weakens the negative effect of disability. As education rises, the gap between disabled and nondisabled in mastery almost disappears. This supports the cultivated resourcefulness hypothesis for disability— that education produces resources that diminish the negative effect of disability on mastery. Support for the cultivated resourcefulness hypothesis, however, depends to some extent upon gender. That is, education diminishes the negative effect of disability on mastery, but the effect is much more dramatic among women. Indeed, disabled women with high levels of education have the similar levels of mastery as nondisabled men and women.

Evidence also supports the undermined benefit hypothesis for age— that at high levels of education, the age-mastery association is more strongly negative. It suggests that those with higher levels of education are higher in mastery up to age 60, but after that point the benefits from education disappear. The undermined benefit is only slightly more evident for men. More surprising is the slight positive association between age and mastery for low educated women. All other groups decline in mastery as age increases. It may be that these women start off low to begin with whereas the others have a higher baseline sense of mastery. As education rises, the resources that derive from education seem to pay-off the most for disabled women. In fact, at the highest level of education, disabled women have levels of mastery equivalent to nondisabled men and women. While the sense of mastery among disabled men also benefits from higher education, the benefits are not nearly as strong as those for women. These results have important implications— if education is higher, the detrimental effects of disability practically vanish, particularly among women.

#### Social Support: Resourcefulness versus Social Dependency

This section examines the effect of support on the age, disability, and limitations-mastery associations. Support resourcefulness suggests that age, disability and limitations are associated with mastery, but the effects are conditional upon support such that their negative association with mastery is strongest at low levels of support. If this were true, we would expect an interaction whereby the regression lines for low and high support diverge with higher age, having a disability, and/or greater limitations. The rationale for

this hypothesis is that support has a positive effect because it provides resources and helps people in need maintain a sense of control over their daily lives. In contrast, the social dependency hypothesis suggests that the relationships between age, disability, limitations and mastery depends on the level of support such that these three factors reduce mastery more at higher levels of support. The rationale for this hypothesis is that support is really indicative of greater loss in functional capacity and others are “filling in” with their support where the individual can no longer manage independently.

**Table 4.11 Unstandardized Regression Coefficients (SE) of Mastery Regressed on Age, Support, and Interactions\***

	Eq. 4.11a Total	Eq. 4.11b Total	Eq. 4.11c Men	Eq. 4.11d Women
Age	-.012 <sup>d</sup> (.001)	-.010 (.009)	-.018 (.014)	.002 (.013)
Disability <sup>^</sup>	-.466 <sup>d</sup> (.037)	-.466 <sup>d</sup> (.037)	-.558 <sup>d</sup> (.057)	-.390 <sup>d</sup> (.048)
Gender <sup>^</sup>	-.081 <sup>a</sup> (.037)	-.081 <sup>a</sup> (.037)		
Support	.492 <sup>d</sup> (.036)	.517 <sup>d</sup> (.138)	.287 (.210)	.791 <sup>d</sup> (.185)
Support * Age		-.0004 (.002)	.001 (.003)	-.003 (.003)
N	1577	1577	706	871
Intercept	2.50	2.40	3.47	1.04
R <sup>2</sup>	.238	.238	.222	.266

\* Disabled and Non-disabled Respondents

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001

<sup>^</sup> For Disabled, 1 = Yes; For Gender, 1 = Women

Equation 4.11a in Table 4.11 shows that support is positively associated with mastery, adjusting for age, disability status, and sex. It is noteworthy that adjusting for support results in the coefficient on gender becoming significant. That is, women

experience significantly lower mastery than men, but only after controlling for social support. Is there evidence of a support resourcefulness or dependency? To test these hypotheses, a support by age interaction term was included in the model, shown in Equation 4.11b in Table 4.11. The interaction term is not significant. There appears to be no joint support-age effect on mastery. Equations 4.11c and 4.11d show that examining the support-age interaction separately for men and women produces no significant results. The interaction terms are somewhat different, but neither is significant.

Table 4.12 shows mastery regressed on age, limitations, support and a limitations by support interaction term. Equation 4.12a indicates that the interaction term is not significant. Equations 4.12b and 4.12c show separate regressions for men and women. Neither result in significant interaction terms, although the interactions are somewhat different.

**Table 4.12 Unstandardized Regression Coefficients (SE)  
for Mastery Regressed on Age, Limitations,  
Support, and Interaction (Disabled Only)**

	Eq. 4.12a Total*	Eq. 4.12b Men	Eq. 4.12c Women
Age	-.010 <sup>d</sup> (.001)	-.014 <sup>d</sup> (.002)	-.006 <sup>c</sup> (.002)
Limitations	-.160 (.291)	-.264 (.449)	.001 (.391)
Support	.477 <sup>d</sup> (.123)	.360 <sup>a</sup> (.178)	.616 <sup>d</sup> (.174)
Support * Limitations	-.019 (.070)	.002 (.108)	-.059 (.095)
N	727	319	408
Intercept	2.33	3.05	1.58
R <sup>2</sup>	.190	.181	.211

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001

\* Total Disabled only



Equations 4.13a through 4.13f in Table 4.8 show models for three age groups by gender. There is little evidence of a joint support-limitations effect on mastery. These results, overall, suggest that support's effect on mastery is not conditional upon limitations. That is, support neither provides additional resources for those with limitations (resourcefulness hypothesis), nor does it diminish the benefits of support for mastery (dependency). The only significant results are noted in Equation 4.13f for women over age 65. It appears that the beneficial effect of support on mastery is reduced for women in that age group if they have higher levels of functional limitations. The equations for that group (Eq. 4.13f in Table 4.13) are as follows:

$$M = -.664 + 1.00(L) + 1.05(P) - .303(PL) \quad (4.13f)$$

for low limits (1):

$$M = .336 + .747(P)$$

for high limits (3):

$$M = 2.33 + .141(P)$$

**Table 4.13 Unstandardized Regression Coefficients (SE) of Mastery Regressed on Age, Limitations, Support, and Interaction (Disabled Only)**

	Eq. 4.13a Men ≤ 45	Eq. 4.13b Women ≤ 45	Eq. 4.13c Men >45 & ≤ 65	Eq. 4.13d Women >45 & ≤ 65	Eq. 4.13e Men >65	Eq. 4.13f Women >65
Limitations	-1.21 (1.15)	-1.25 (1.41)	-.249 (.699)	-1.14 (.687)	-.096 (.710)	1.00 (.567)
Support	.055 (.393)	.317 (.487)	.463 (.272)	.136 (.295)	.276 (.317)	1.05 <sup>d</sup> (.286)
Support * Limitations	.156 (.272)	.235 (.360)	-.024 (.165)	.215 (.161)	-.019 (.172)	-.303 <sup>a</sup> (.140)
N	75	101	131	158	113	149
Intercept	4.32	2.74	1.82	3.09	2.32	-.664
R <sup>2</sup>	.184	.251	.150	.164	.063	.210

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001

It is noteworthy that at higher limits, the coefficient on support almost drops to zero. Women with fewer limitations are able to maintain a sense of mastery, and in fact gain dramatically from higher levels of support. In contrast, women who have higher limitations maintain their level of mastery, but do not experience the same gain in mastery that results from greater support found among those with low limitations. That suggests that higher levels of support for those with greater limits may be indicative of dependency. That is, support may be reflecting the need created by functional deficits— hence the dramatically different effect of support for mastery at higher levels of functional limitation. Figure 4.13 shows the regression lines.

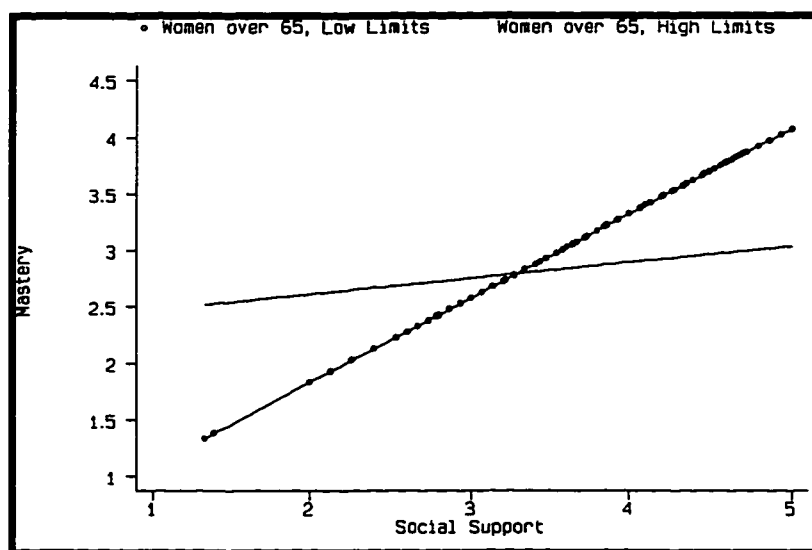


Figure 4.13 Mastery on Support by Limits, Women > Age 65  
Regression lines from Equation 4.13f of Table 4.13

Table 4.14 shows mastery regressed on age, disability, support, and a support by disability interaction. The results suggest that disability reduces the positive effect of

support on mastery. That is, the coefficient on support drops if one has a disability. This is more true, however, for women than for men.

**Table 4.14 Unstandardized Regression Coefficients (SE) of Mastery Regressed on Age, Disability, Support and Interaction\***

	Eq. 4.14a Total	Eq. 4.14b Men	Eq. 4.14c Women
Age	-.012 <sup>d</sup> (.001)	-.013 <sup>d</sup> (.001)	-.010 <sup>d</sup> (.001)
Disability	-.224 (.301)	-.536 (.436)	.378 (.417)
Support	.517 <sup>d</sup> (.058)	.365 <sup>d</sup> (.074)	.722 <sup>d</sup> (.075)
Support * Disability	-.060 (.071)	-.005 (.104)	-.181 <sup>b</sup> (.097)
N	1577	706	871
Intercept	2.35	3.15	1.32
R <sup>2</sup>	.236	.222	.268

\* Disabled and Non-disabled Respondents

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001

The coefficients Table 4.15 suggest that the interactions vary across age group as well. The significant finding is that the largest effect of disability on the support coefficient occurs in Equation 4.15d. Among middle-age women, the positive effect of support drops by 43 percent with inclusion of disability. Figure 4.14 shows these regression lines.

The equation for that group (Eq. 4.15d, Table 4.15) is as follows:

$$M = .115 + 1.04(D) + .858(P) - .354(PD) \quad (4.15d)$$

for nondisabled (0):

$$M = .115 + .858(P)$$

for disabled (1):

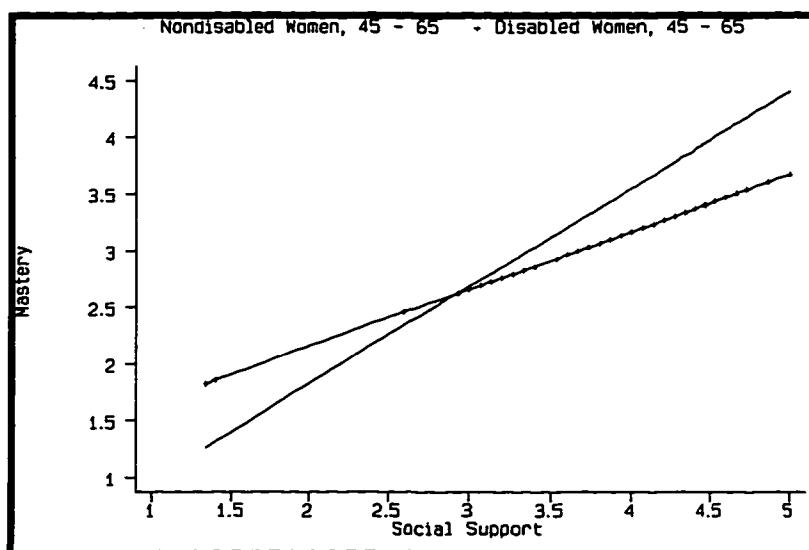
$$M = 1.15 + .505(P)$$

**Table 4.15 Unstandardized Regression Coefficients (SE) of Mastery Regressed on Age, Disability, Support and Interactions\***

	Eq. 4.15a Men ≤ 45	Eq. 4.15b Women ≤ 45	Eq. 4.15c Men >45 & ≤ 65	Eq. 4.15d Women >45 & ≤ 65	Eq. 4.15e Men > 65	Eq. 4.15f Women >65
Disability	-.319 (.964)	-.092 (.893)	-.569 (.684)	1.04 (.665)	-.385 (.774)	-.058 (.668)
Support	.245 (.176)	.716 <sup>d</sup> (.164)	.440 <sup>c</sup> (.127)	.858 <sup>d</sup> (.120)	.309 <sup>b</sup> (.108)	.593 <sup>d</sup> (.118)
Support * Disability	-.007 (.233)	-.055 (.209)	-.017 (.163)	-.354 <sup>a</sup> (.155)	-.047 (.185)	-.073 (.156)
N	155	211	283	335	268	325
Intercept	3.11	1.02	2.07	.115	2.48	1.13
R <sup>2</sup>	.083	.239	.252	.266	.180	.216

\* Disabled and Non-disabled Respondents

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001



**Figure 4.14 Mastery on Support by Disability, Middle Age Women  
Regression lines from Equation 4.15d of Table 4.15**

### Social Participation: Resourcefulness versus Dependency

Does social participation in the community like church groups or civic-political associations matter for mastery? If so, how do disability and limitations interact with social

participation in their effects on mastery? Equation 4.16a of Table 4.16 shows a regression model of mastery on age, disability and social participation for the total sample. The coefficient on social participation is positive and significant, indicating that with age and disability status held constant, social participation is beneficial for mastery. Do these effects differ by gender? Equations 4.16b and 4.16c in Table 4.16 show that there is a gender difference in the effect of social participation on mastery. The coefficient on social participation for women is 60% larger than that for men. This suggests that women derive more benefits for their mastery by engaging in social participation or social activities. The equations show the results:

$$M = 4.56 - .012(A) - .595(D) + .027(R) \quad (4.16b)$$

$$M = 4.35 - .011(A) - .455(D) + .067(R) \quad (4.16c)$$

**Table 4.16 Unstandardized Regression Coefficients (SE) for Mastery Regressed on Age, Disability, and Social Participation \***

	Eq. 4.16a Total	Eq.4.16b Men	Eq. 4.16c Women
Age	-.011 <sup>d</sup> (.001)	-.012 <sup>d</sup> (.002)	-.011 <sup>d</sup> (.002)
Disability <sup>^</sup>	-.517 <sup>d</sup> (.039)	-.595 <sup>d</sup> (.059)	-.455 <sup>d</sup> (.053)
Social Participation	.051 <sup>d</sup> (.012)	.027 (.019)	.067 <sup>d</sup> (.015)
N	1573	704	869
Intercept	4.43	4.56	4.35
R <sup>2</sup>	.156	.170	.148

\* Disabled and Non-disabled Respondents

<sup>a</sup> p < .05; <sup>b</sup> p < .01; <sup>c</sup> p < .001; <sup>d</sup> p < .0001

<sup>^</sup> 1= Disabled

Table 4.17 shows regression output that examines interaction effects. Equation 4.17a shows output to test if the effect of disability status on mastery is conditional upon

the level of social participation one maintains. In Equation 4.17a, the coefficient on the disability by social participation interaction term is significant ( $t = 2.42$ ;  $P = .015$ ). Among the disabled, the effect of social participation on mastery increases by roughly 68%; that is the coefficient on social participation increases from .027 to .085. At higher levels of social participation, mastery of the disabled and the nondisabled converge.

**Table 4.17 Unstandardized Regression Coefficients (SE) for Mastery on Age, Disability, Social Participation and Interactions\***

	Eq. 4.17a Total	Eq. 4.17b Men	Eq. 4.17c Women	Eq. 4.17d Disabled	Eq. 4.17e Total
Age	-.011 <sup>d</sup> (.001)	-.012 <sup>d</sup> (.002)	-.011 <sup>d</sup> (.002)	-.010 <sup>d</sup> (.002)	-.011 <sup>d</sup> (.001)
Disability <sup>^</sup>	-.604 <sup>d</sup> (.053)	-.626 <sup>d</sup> (.082)	-.577 <sup>d</sup> (.070)		-.516 <sup>d</sup> (.039)
Social Participation	.027 (.015)	.018 (.023)	.033 (.020)	-.038 (.055)	.071 (.043)
Participation * Disabled	.058 <sup>a</sup> (.024)	.021 (.038)	.082 <sup>b</sup> (.031)		
Limitations				-.302 <sup>d</sup> (.054)	
Participation * Limits				.078 <sup>a</sup> (.034)	
Participation * Age					-.0003 (.001)
N	1573	704	869	723	1573
Intercept	4.47	4.58	4.41	4.24	4.40
R <sup>2</sup>	.159	.170	.155	.122	.155

\* Disabled and Non-disabled Respondents

<sup>a</sup>  $p < .05$ ; <sup>b</sup>  $p < .01$ ; <sup>c</sup>  $p < .001$ ; <sup>d</sup>  $p < .0001$

<sup>^</sup> 1= Disabled

These findings lend support to the social resourcefulness hypothesis which suggests that while disability is negatively associated with mastery, social participation is more beneficial for mastery among the disabled. That is, the positive effect of the connectedness that comes with greater social participation has greater pay-off for level of

mastery; this is substantially more true for those with a disability. Figure 4.15 shows the regression lines. The equations are:

$$M = 4.47 - .011(A) - .604(D) + .027(R) + .058(DR) \quad (4.17a)$$

among nondisabled (0) the equation simplifies to:

$$M = 4.47 - .011(A) + .027(R)$$

among the disabled (1) the equation simplifies to:

$$M = 3.87 - .011(A) + .085(R)$$

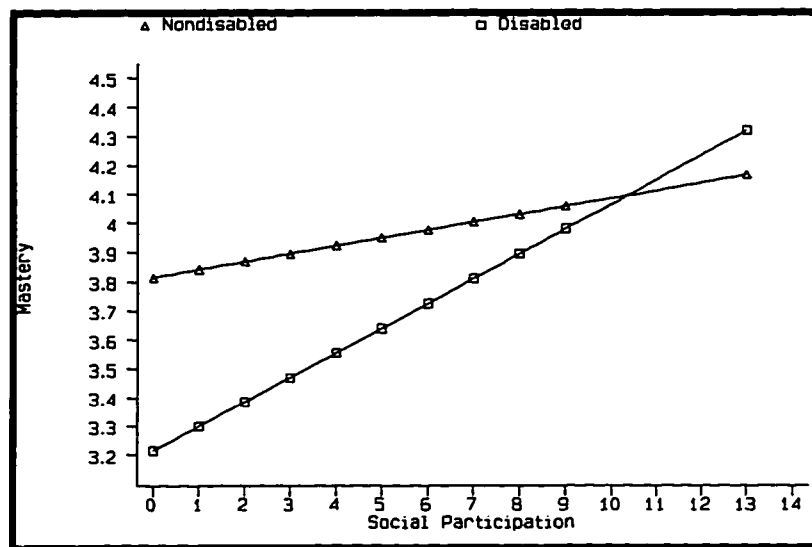


Figure 4.15 Mastery on Social Participation by Disability  
Regression lines from Equation 4.17a of Table 4.17

The separate regressions show that men and women are different in terms of the mastery-benefits gained via social participation. Does disability and social participation interact differently for men and women? Equations 4.17b and 4.17c in Table 4.17 show that there is a gender difference in the coefficients on the disability by social participation

interaction terms. For women, the coefficient on disability by participation (.082) is significant ( $t = 2.68$ ;  $P = .007$ ). The same is not true for men. The coefficient of mastery on social participation is twice as large among disabled women compared to nondisabled women. The benefits of social participation for the sense of control are greatest among disabled women. Men do not seem to derive the same psychosocial benefits from engaging in social activities and voluntary associations. Figure 4.16 shows these associations.

For men:

$$M = 4.58 - .012(A) - .626(D) + .018(R) + .021(DR) \quad (4.17b)$$

for nondisabled(0):

$$M = 4.58 - .012(A) + .018(R)$$

for disabled(1):

$$M = 3.95 - .012(A) + .039(R)$$

For women:

$$M = 4.41 - .011(A) - .577(D) + .033(R) + .082(DR) \quad (4.17c)$$

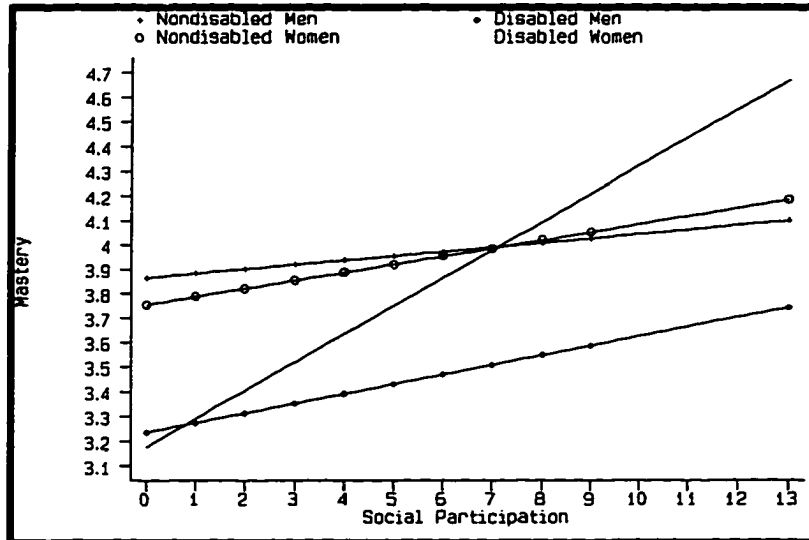
for nondisabled (0):

$$M = 4.41 - .011(A) + .033(R)$$

for disabled (1):

$$M = 3.83 - .011(A) + .115(R)$$





**Figure 4.16 Mastery on Social Participation by Gender and Disability**  
**Regression lines from Equation 4.17c of Table 4.17**

Equation 4.17d shows results for mastery regressed on age, limitations, social participation, and a participation by limitations interaction. The following equations are produced and Figure 4.17 shows the associations.

$$M = 4.24 - .010(A) - .038(R) - .302(L) + .078(RL) \quad (4.17d)$$

for low limitations(1):

$$M = 3.94 - .010(A) + .040(R)$$

for high limitations(4):

$$M = 3.03 - .010(A) + .274(R)$$

The results suggest that social participation is beneficial for mastery among both disabled and nondisabled. It appears, however, that the relationship is further conditional upon gender such that women with disabilities derive the most benefit for mastery via their participation in social activities and voluntary associations. The pay-off appears to be so dramatic that those very involved socially surpass the other three groups in their sense of

control. The same positive benefits of social participation holds true for functional limitations. That is, for those with higher levels of limitations we would expect greater benefits for mastery with greater social participation. The more involved, the greater the mastery—and this is substantially more true among those with greater limitations. Unlike with disability and social participation, no significant gender difference was found for limitations and social participation. Finally, Equation 4.17e shows that the effects of participation on mastery are not conditional upon age.

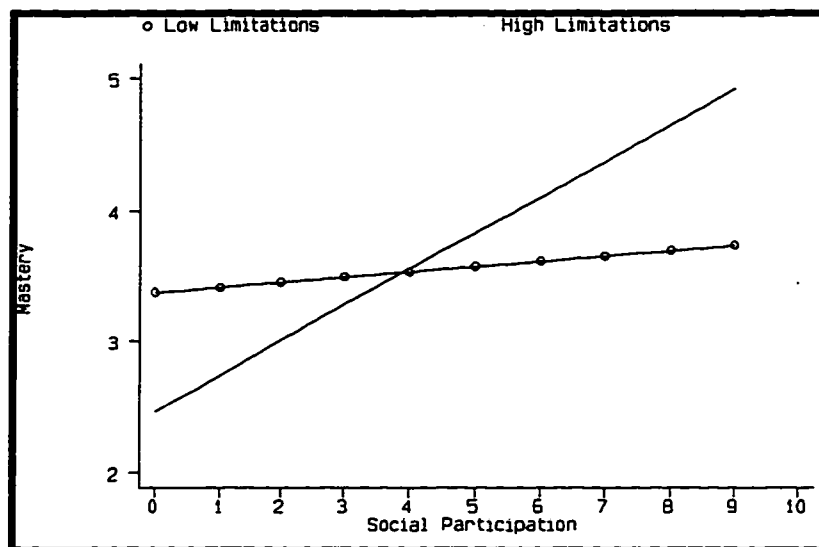


Figure 4.17 Mastery on Social Participation by Limitations  
Regression lines from Equation 4.17d of Table 4.17

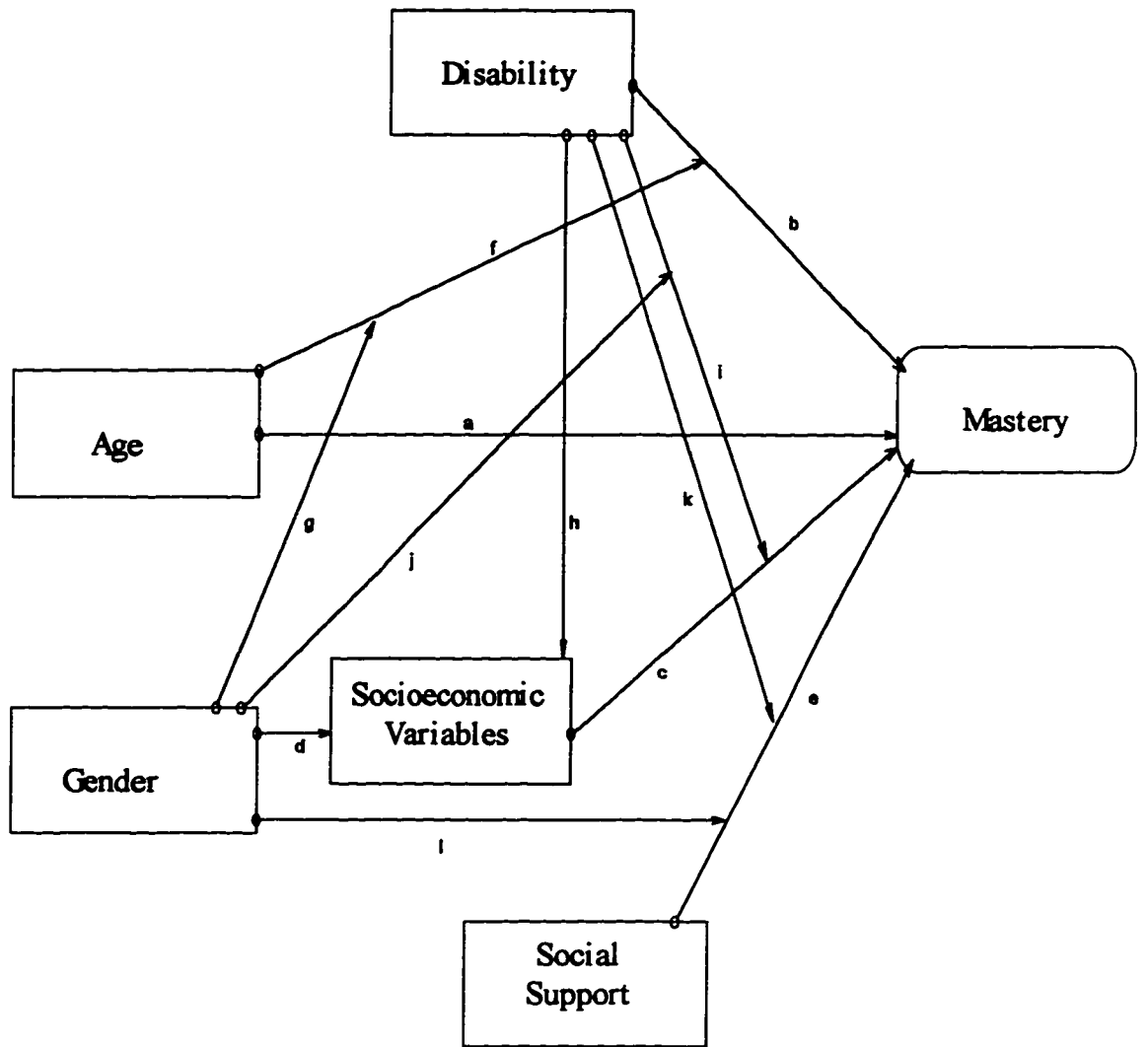


Figure 4.18 Summary of Main Findings

**Summary of Main Findings as Depicted (by letter) in Figure 4.18**

- a. Age has a direct negative effect on mastery.**
- b. Disability has a direct negative effect on mastery.**
- c. Education, employment, and income each have direct positive effects on mastery.**
- d. Gender is associated with SES variables such that men are more likely to be employed and have higher income.**
- e. Social support has a direct positive effect on mastery.**
- f. Age and disability have jointly negative effects on mastery— up to age 60.**
- g. The age/disability interaction depends on gender such that men fare more poorly if they are younger and disabled.**
- h. Disabled report significantly lower education, employment and income, which explains part of the negative disability-mastery.**
- i. The benefits of education on mastery are conditioned by disability such that the benefits are greater among disabled.**
- j. The interaction of education and disability on mastery depends on gender such that the interaction is more salient among women.**
- k. The benefit of social support for mastery is conditioned by disability such that those with disability derive less benefit from high support compared to nondisabled.**
- l. Compared with men, women derive greater benefits from social support for mastery.**

## CHAPTER 6

### SUMMARY AND CONCLUSIONS

The findings described in the present study have important implications for the understanding of mastery and its role in aging and disability processes. More broadly, the findings enhance our understanding of the way mastery is effected by various aspects of social stratification and social resources. Previous research has established that mastery is associated with the distribution of social resources. There is little doubt that social position has an effect on self-processes. The broader question addressed in the present study is how mastery is distributed by a central stratifying variable—age. In that context, the role of physical capacity (disability status) and socioeconomic capacity (education, employment, income) appear to have meaningful associations.

The results of the present study suggest that age and disability are negatively associated with mastery. At first glance, it is apparent that disability and age combine in their negative influence on mastery— but the pattern is observed only up to age 60. General statements of support for either the double-disadvantage or the reference-normative hypotheses may fail to accurately depict the associations in these data. As such, the results require us to examine the possible explanations for the age and gender differences within the context of normative physical decline and status inequalities.

### Social Comparison: Age-Normative Physical Decline

As noted in Chapter 2, common cultural conceptions of age convey the sense of inevitable decline. That decline, however, is perceived as occurring in a particular normative sequence. A “socially prescribed timetable” (Neugarten, 1996) of decline stresses the biological changes that typically increase over the life course and may insidiously emerge in later-life (Mirowsky and Ross, 1992). Research documents that those with poorer health, chronic disease, physical or mental disorder, and limitations in activities tend to report lower sense of control (Baltes, Wahl, and Schmid-Frustoss, 1990). What if these changes or health issues appear in the younger years? The timing of the cumulative physical problems associated with age may be worse for those who perceive their condition to be “off-time” relative to age peers. The negative consequences of off-time events may be the result of unfavorable social comparisons with age-peers who are not experiencing the same kind of situation. The more the condition is perceived as off-time, the more it is potentially stressful in its consequences.

The patterns reported in this study are consistent with existing theoretical notions regarding social reference comparisons regarding normative health and functioning. References to others take the form “compared to others like me (in age), my health is....”. In related studies, research documents a process of social comparison in self-assessed health status. People often minimize or even ignore their prevalent health problems and employ comparisons to reference groups as common psychosocial coping devices. In some instances, older respondents, regardless of level of disability or chronic conditions, are more likely to rate their health in more optimistic and positive terms (Idler, 1993).

Despite equal levels of disability and functional limitations, research finds that younger tend to report a more negative self-perceived health status than older respondents (Bultena and Powers, 1978). Evidence suggests that older people seem to be less emotional about illness, reporting less anger, fear and shame than their younger counterparts. That finding implies an ability to actually reduce the cognitive salience of illness (Neugarten, 1996). The divergent patterns observed between older and younger groups in the present study can be interpreted in the context of social comparison theory. For instance, older disabled may be making the type of comparisons with age-peers that reflect more normative expectations regarding impairment levels, which in turn might explain the disappearance of the age by disability interaction during the post-60 period. In contrast, we would expect the young with impairment to compare themselves to age-peers without impairment—with the stark recognition that having impairment is particularly dissonant with age-referent perceptions of sound physical health and functional capacity. The consequences of such social comparison may be reflected in reduced sense of personal control and have further ramifications on self-processes.

Bultena and Powers (1978) note that “ironically, the negative stereotypes about older persons that are so widely promulgated in American society may be functional in the sense of providing a sufficiently dreary picture of old age that many aged persons, by comparison, feel advantaged” ( 753). The “functional” aspect of the stereotype may apply to disabled as well. That is, older persons may be able to psychologically cope and manage impairment in the sense that it is more typical of their age peers and is consistent with the socially prescribed timetable of physical decline (Neugarten, 1996). In contrast, those in

their 40s and 50s are less able to engage in age-referent action whereby particular stereotypes of “dreary old age” can be employed to psychologically protect them from the negative connotations and consequences of disability.

In addition, the findings implicate the process whereby individuals minimize impairment. These processes may provide some explanation for the disappearance of the synergistic effects of age and disability in later-life. Similar levels of impairment for a 30 year-old compared to a 70-year-old appears to have dramatically different implications for the self. To explain differences regarding age and perceptions about physical function, Peck (1968) employs Eriksonian models. For instance, one of the psychosocial tasks of late-life is the resolution of the tension between body transcendence and body preoccupation. Part of the successful adaptation in later-life is conditional upon one’s capacity to re-orient their values to social and mental sources of esteem and pleasure. That is contrary to earlier life-orientations that emphasize the importance of physical health and implies that disability in later-life would pose less of a threat to self-processes relative to younger age peers. Eriksonian notions may be operating in these data to the extent that with increasing age, impaired older respondents fare less poorly in mastery relative to their younger, disabled counterparts.

#### Social Comparison: Age-Normative Status Achievement

The results suggest that education, employment, and income are important status variables in determining mastery. Those with greater SES report higher mastery— a finding that is consistent with previous research (Mirowsky and Ross, 1992; Mirowsky,



1995). Several findings implicate these status variables in explaining part of the negative associations between age, disability, and mastery. Educational and occupational attainment index the life cycle, and thus, their interruption may have particularly unexpected consequences for the sense of self. As individuals progress through young adulthood, the rate of marriage, employment, income, and occupational achievement increases. After age 60, however, the progression into later-life brings about a reversal of these trends. Some research shows a mirror-image fall and rise in depression with the distribution of these SES factors across age. Mastery is strongly associated with depression (Pearlin et al., 1981). It seems that processes defined by pre- and post-retirement age demarcation in the life course may be operating in these data to the extent that status variables matter differentially for mastery among the under age 60 group. The interpretation of these patterns, however, in the context of the hypotheses presented in this study is a major challenge and requires a broader interpretation of social comparison beyond normative physical function comparisons.

Given the considerations above, the patterns described in the present study may suggest that the basis of normative comparison is not disability in itself. Otherwise we would see the greatest gap between the disabled and nondisabled in mastery among the youngest group, since disability in one's 20s is particularly "non-normative." Instead, the pattern suggest that the most influential basis of social comparison may revolve around status-related factors. Thus, when the disabled compare themselves to age peers, individuals in their 30s, 40s and 50s are likely to see the greatest deficits in education, income, and occupations achievement and marital status. The fact that other analyses

reveal a particularly strong impact of status variables on mastery is consistent with this explanation.

Why would the disability gap in mastery be so apparent in middle-age? The development of mastery over time may be due to a reciprocity between self and environment. For instance, early self-competence among men in educational spheres of life like college influence subsequent life events in work and family realms. These life events are shown to have effects on self-competence for almost a decade after their experience. Research suggests that the gender differences that are commonly cited may not hold when social role occupancy is adjusted. At the point of middle-age, Neugarten (1996) notes that there is increased introspection and “taking stock” of life at this point in the life course. These notions also are consistent with the finding in the current study that those in the older, disabled group are less effected psychologically by deficits in their physical capacities if they are making age-peer references. In contrast, disabled who “take stock” in the 40s and 50s most likely employ age-referent normative expectations of what such “stock” should contain (i.e. status achievement). It may be that men fare more poorly from the unemployment associated with disability because they derive greater benefits for mastery from employment. Given these considerations, the present study contributes to scholarship which acknowledges the implications of the socially prescribed timetable in physical, social, and psychological development and the consequences of action, status, or outcome that is not age-appropriate.

## The Relevance of Gender

In addition to the above considerations, the disability gap in mastery increases with age differentially for men and women. These results are somewhat consistent with recent work by Mirowsky (1996) which found that the gender gap in depression rises in adulthood as men and women experience their unequal statuses. Status mediation in the way mastery is distributed differently by disability status across age groups poses an important puzzle for further research. One unanswered question from the present research is the possible reduction of the coefficient of mastery on disability with adjustment for status. If status variables are as important for the disability gap in mastery as they are for the gender gap in depression, we should witness similar results that occur with status adjustment.

Pearlin and Schooler (1978; 17) note that “between the sexes, men clearly appear to have an advantage, for the personality characteristics and response repertoires shown to have some potency in controlling stress are predominately found among men.” The results in the present study show that, with a rise in successive age group, men fare more poorly in terms of mastery if they are disabled and under age 60. One potential explanation for the gender differential involves the distribution of statuses. At a time in the life course (age 30 to 55) when men are expected to be relatively “fit” for productive work and the achievement of particular social statuses, status barriers associated with disability seem to interfere. The physical aspects of a “robust, productive” period of years following early adulthood may be more salient for identity among men. It is highly plausible, therefore,

that the interruption of occupational or family achievement could conceivably harm personal agency.

The socially prescribed timetable of physical and social events that disability interferes with (i.e., education, employment, income) may be central to identity among men. If so, the components of the self are challenged to a greater extent by their disability status. It has been stressed that these aspects of psychological centrality are age-normative (Neugarten, 1996). In addition, theories of gender and identity salience may offer insight into this process. Turner and Roszell (1994; 197) note, “the more salient the identity that is called into question, the greater will be the impact of a serious negative event on the self-image and well-being of the individual. The traditional assumption is that work tends to be more salient for the male identity while interpersonal relations tend to be more central for the female identity.”

The extent of the gender differences reported in the present study implies that disability impacts differentially on the various dimensions of personal agency as disabled and nondisabled live out their unequal statuses. For disabled men, more so than women, age may have different meaning as it defines and marks the expected normative status-achievement stages in the life course—the “shoulds” of achievement. The combination, therefore, of age (under 60) and impairment presents a complex pattern of double-disadvantage and normative-reference. The mastery-age association is more negative among those with a disability (the former), but disability really appears to be indicative of status disadvantage that is normative for that age in the life cycle (the latter). These findings lend new weight to the suggestion that structure (i.e., statuses differentials) have

definitive consequences for psychosocial processes like mastery. In addition, the results imply that gender differences in these structural variables condition the associations between structure and psychosocial outcomes.

To summarize, the overall support for the reference-normative hypothesis is more complex than originally hypothesized. Further research into the particular configurations of disability, age, gender, and physical and social identity may provide better detail as to the precise mechanisms and meanings that create these dynamic associations.

### Resource Differences: Education

The results have important implications for our understanding of the way social and structural variables influence levels of mastery, particularly in the context of age and impairment. There is little doubt that mastery is enhanced with greater levels of education. One unexpected finding, however, was that the benefits of education for mastery are conditioned by both disability and gender. Broadly speaking, disabled derive greater benefits from education— a finding that lends support for the cultivated resourcefulness hypothesis. That association, however, is more dramatic among women. These results suggest that the particular psychosocial benefits typically accorded to education are more apparent among women. In addition, these findings imply that the disability gap in mastery may be more dramatically reduced by education among women, whereas the same gap is more affected by employment among men.

Results also suggest partial support for the undermined benefits hypothesis. The benefits derived for mastery by education are undermined by age. At the youngest ages,

higher education has significantly greater benefits for mastery compared to lower education. With increasing age, however, that same high level of education provides relatively similar levels of benefit for mastery as low education; the expected pattern of enhanced mastery with higher education are actually undermined with age.

Why would the positive effects of education be diminished in late-life? There are two possibilities for education's diminished effect on mastery that occurs with age. The first is that higher education makes one more optimistic about their life chances—and these initial effects are most visible before age 40. With age, it may be that other factors erode the psychosocial benefits of education. Those other factors could be greater general physical limitations and/or increased difficulties in occupational spheres due to impairment. In addition, the achievement of the younger group, particularly in occupational realms of life, provides more tangible pay-offs for those with higher education—producing the higher levels of mastery at younger ages. In later-life, these advantages may have fewer perceived pay-offs or become overshadowed by increased limitations. We know that older persons tend to be more optimistic about their health. It could be that those older persons with higher education are also more realistic about the implications of increasing limitations on their capacity to control and interact with their social and physical world.

A second possible explanation for the diminished benefits of education with age is that the qualitative aspects of education have changed over the past century. With advanced technology and sources of knowledge, 16 years of education today, compared to 16 years of education in the distant past, is likely to provide a very different set of skills and resources for thriving. Hence, similar levels of education for young and old are

qualitatively different—the former have education that provides a better “fit” for adjusting to the strains and obstacles posed in the present society. And it is that difference that explains the diminished benefit of greater education with advanced age. Both of these possibilities, advanced physical decline and qualitatively different education, may explain the undermined benefits of education, although the former is perhaps easier to test empirically.

### Resource Differences: Support and Participation

The results regarding the associations between social support and mastery, like education, are conditioned by gender and disability. Disability reduces the positive effect of support for mastery among women, in general, more than for men. In particular, disability status undermines the positive effect of support for mastery among women in the middle age group. That is, the slope of mastery on support is strong and positive— but it is dramatically reduced among disabled women in the middle-years. Among men, neither the diminished effect of support, nor the particularly strong association between support and mastery, is observed.

Tests for the impact of increased limitations on the support-mastery association indicate somewhat different patterns. The undermining effect of limitations on the positive association between social support and mastery is more apparent among the older group. Limitations, like disability, appears to diminish the enhanced sense of mastery perceived by those women with greater levels of support. The reduced support-mastery association, however, is apparent only among the oldest group of women. These findings are

consistent with the theoretical notion that support among the impaired or those with greater limitations actually reflects forms of social dependency. Those in greater need of assistance may require the support of others on a daily basis. The personal acknowledgement of this need for assistance may be associated with lower perceived control or mastery over life circumstances and chances.

Peggy Thoits (1985) elaborated on the mechanisms whereby support enhances health. She notes that social relationships produce a positive sense of self and identity, or even an enhanced self-efficacy. Some work indicates that men with health conditions fare better in health outcomes if they have support. There is little doubt in the present study that support enhances mastery; the more noteworthy finding is differences observed for both disability and gender. The benefits of social support for mastery are more apparent among women—in particular, disabled women.

Gender variations in the nature of interpersonal relationships are well documented in social science literature. Heather Turner (1994; 522) notes, “it appears that men and women often differ in both the quantitative and qualitative aspects of their relationships, including the size and composition of their social networks, the amount of support they report receiving, and the degree of emotional exchange and intimacy that characterize their relationships.” Turner discusses a paradox in the relationships between gender, support, and depression. She hypothesized that one reason women have both higher support and higher depression may be the duality inherent in their involvement in social relationships. In other words, the nature of relationships among women may make them more vulnerable to the negative and stressful aspects of social relations. That rationale



derives from the notion that more intensive and emotional involvement in relationships increases the potential for supportive interactions and also for negative ones.

To some degree, the support found among impaired women may be qualitatively different than that among men. Depending on the nature and meaning of that support, it may actually undermine the often observed benefits of support for mastery. Greater support among disabled and impaired may reflect greater dependency via assistance with daily living. Women, more than men, may be willing to let intimate others assist with their functional limitations. Or, others' empathy may inadvertently reinforce dependency attributed to impairment. Turner (1994; 536) argues, "it may be that greater emotional involvement in relationships not only increases the potential for receiving emotional support, but also creates circumstances in which one becomes more exposed and/or vulnerable to negative interactions. Thus, factors that allow women to experience emotional support from their social ties may also increase their chances of being hurt by them."

The results from the present study support the hypothesis that social support among impaired has different implications for the sense of mastery. It may be that support reflects the very types of interpersonal exchange that undermines self-potency measures like mastery. As noted in the literature review, social support in terms of the negative functional effects theory implies that the benefits we typically expect to be associated with support may be undermined by the particular context within which support is received. In the case of women with impairment, the effect is most apparent. Explanations for the gender differences in these associations is unclear. It is noteworthy, however, that the

effect of gender on mastery is significant only when social support is included in the equation— in that condition, women have significantly lower mastery.

In addition, the results confirm the particularly strong, positive effect of social participation in the community on the sense of mastery. While those results are not particularly surprising, the gender and disability differences again emerge in an unexpected manner. Social participation is much more beneficial for mastery among the disabled and impaired. Indeed, at the highest levels of participation, disabled surpass nondisabled in mastery. More noteworthy, however, is the finding that disabled women derive the most benefit in mastery from greater social participation.

These findings suggest that greater participation is somehow providing different psychosocial payoffs differently for disabled and nondisabled, and for men and women. It may be that greater community involvement is reflective of greater resilience to overcome any challenges posed by impairment. The characteristics and qualitative nature of respondents motivated towards greater social participation may further reinforce that resiliency— hence, the benefits of participation enhance mastery more dramatically. These results contrast the finding that disability and limits undermine the benefits of social support for mastery. Instead, participation may be reflective of involvement that enhances the sense of self potency and empowerment. Social support on an interpersonal level involves greater assistance with challenges, and therefore undermines mastery. Participation, in contrast, may involve a more active self that engages with others in the community and takes greater control over challenges in daily living.

### Implications for the Study of Mastery in Stress Process Research

The results in the present study have important implications for our understanding mastery and the structure of coping. Within the various dimensions of coping, the issue of persistent, unchangeable circumstances presents unique dynamics in the stress process. Pearlin and Schooler (1978) argue that in circumstances where coping does not change the situation, an individual may still reduce the impact of the stressor. The tactics may consist of responses that function to control the meaning of the problem. The particular “threat” posed by a set of experiences like impairment may evoke a variety of meanings and perceptions.

These differential perceptions may explain why disability is more detrimental for self-potency among the young and among men. There are numerous cognitive processes that help neutralize threats experienced in daily life. The most commonly employed coping mechanism involves the use of positive comparisons. These include judgments that one’s own conditions are less severe, or perhaps equal in severity, to referenced others. If such cognitive processes are employed, they may effectively reduce or minimize the negative meanings of perceived between self and age peers in physical and social life-dimensions.

Pearlin (1983) has written extensively on the effect of the loss and gain of roles on mental health and well-being. He argues that people change over time as a consequence of the strains they experience—partly in their effort to cope and partly as a result of the effects of strain on self-concept. In the context of loss, specific losses like employment have been shown to create economic strain, which in turn, has detrimental effects on self-concept. Pearlin and Schooler (1978; 15) note that “the younger are more likely than the

older to be self-denigrating, but they are also more apt than the older to entertain a sense of mastery.” Their overall conclusions, however, refute the view of aging as a process of increasing vulnerability and incapacity to deal with life strains. Gecas (1989) notes the obvious fact that the life course is associated with aging, but that fact, in itself, does not account for changes in self-potency over the life course. Rather, the manner in which life events occur and are distributed in the life course can influence self-efficacy. It may not be the fact of impairment that harms the sense of mastery. The negative consequences on mastery attributed to impairment, rather, may be due to the timing of life events and the normative “appropriateness” and of self-reference regarding status position during periods of the life course.

The major detrimental aspect of role strains that emerge over the life course involves their chronicity. That is, the manner in which they can persist in the lives of people, and their often insidious development, implicate role strains as a powerful factor in the stress process. Individuals faced with such conditions may come to experience their detrimental effects on self-evaluative and self-potency processes. Conditions like disability can impinge upon the very aspects of our lives that enhance and bolster these self-processes. Role strains, therefore, can hover in the background of people’s lives as a constant reminder about their incapacity to change the constraints set by such conditions.

Pearlin adds (27):

Adversity that becomes a fixture of life can come to implicate these dimensions of self. They symbolize, first, the inability to be mastery of one’s own fate or to alter even those aspects of life that are particularly noxious. Second, to the extent that continued role strains are interpreted as personal failure, they can prompt a process of self-denigration.... To a large extent, therefore, the effects of role strain on stress are indirect, working

through the diminishment of self...Damage to the self, then, is one of the key elements in the stress process.

Given these considerations, it appears that age-referent and normative expectations reflected from the socially prescribed timetable impress powerfully upon the self—and is nearly impossible to “cognitively avoid.” In addition, the potential use and effect of cognitive tactics may be conditional upon age, gender, severity of disability, the nature and perceived meaning of one’s support system, and a host of other factors. The results discussed in the present study make important contributions to the ongoing scholarship and research of the associations between age, disability, and self-processes like personal agency.

### Policy Implications

The applied significance of the present research differs depending on the perspective of the reader. The patterns documented in this study are interesting in their own right for basic sociology. In addition, they can potentially make important contributions to applied sociology and social policy. Put simply: how can we use these findings to make the world a better place— or at least inform practice and policy so that individuals have concrete social knowledge to better guide their actions?

There are two domains of applied work that may benefit from the ideas posed in the present work. First, we can outline some of the potential uses of these findings for health practitioners who work with aging and/or impaired individuals. These practitioners may gain insight from the present study that will help them in designing appropriate and

optimal strategies for the day-to-day care of aging and/or impaired individuals. Second, these results may be useful for policy makers involved in broader decision-making about program formation and structure, policy debate, and social legislation regarding age and disability. Individuals working in broader arenas whose efforts contribute to more general social policy regarding disability and aging may extract knowledge from these analyses that questions assumptions about age, impairment, and issues of personal agency. While these two perspectives have sometimes divergent interests, goals, and desired outcomes, a common theme connects their efforts— how to empower individuals to maintain health and an independent functioning in the face of the potential loss that emerges with age and/or impairment. The discussion that follows elaborates on these two perspectives and attempts to link the central findings of the present study to practical social knowledge and social policy.

The results regarding the initial hypotheses of the double-disadvantage versus the reference normative comparison are foremost in this discussion. The fact that the patterns observed in the interaction of age and disability are different for pre- and post-60-year-old age groups is important in several respects. First, these patterns confirm what life course and human development scholars have proposed over decades of research— that age should be viewed as more than a simple continuous variable in social research. The extent to which mastery plays a role in adult developmental, psychological, and physical processes, both in early and later-life, is well-documented. The dramatic divergence of mastery among disabled and nondisabled in younger and older groups suggests that impairment has differential effects on mastery according to age. In this regard, we might

better understand the particularly detrimental consequences for disability on the self only in the broader context of age-referent thought and action.

· Medical sociologists have long held that mastery is important for health, functioning, and as a stress-buffer. The fact that this psychosocial resource plays such a crucial role within health processes should get the attention of policy makers and applied practitioners interested in the maintenance of health and well-being. Given the importance of mastery for the array of positive action like persistence in the face of disability and adherence to medical regimens, practitioners who work closely with impaired individuals of all ages should recognize the interactive effects of age and disability.

Secondly, this research reinforces the suggestion that age provides a reference-base for individuals through which they judge normative physical, social and psychological dimensions of life—and that such conceptions differ for men and women. Practitioners in applied settings may view this research as further indication of the important differences in psychosocial dimensions across the life course, along with the fact that they are inextricably linked to dimensions of impairment. Care providers will often address the specific clinical needs of impaired individuals. The results presented here confirm the additional need to recognize the psychosocial processes involved in disability. To what extent are care receivers' making social reference comparisons in their day-to-day lives? And how does this influence the extent to which one feels self-potent? Assuming that impaired individuals have some combination of informal and formal care providers, the responses to these questions may shape the process and the outcomes of caregiving.

The findings regarding the hypothesis of reflected impairment, in which both the negative effects of age and disability on mastery are reduced with adjustment of status variables, suggests the importance of status disadvantage among the impaired. Status attainment enhances mastery. Individually, age and disability are both negatively associated with the sense of mastery. A common perception about the loss of control with age is often attributed to explain increasing limitations with age. If disability and advanced age are both negatively associated with status variables, and these same variables enhance mastery, we would expect that adjustment for these variables would reduce the negative associations between them and mastery. The divergence between disabled and nondisabled in mastery may reflect the real obstacles in physical and status that are a part of the lives of the impaired. Health practitioners may correctly focus on the “problem-at-hand” or the condition that causes impairment, and fail to address the broader dimensions of one’s position in the social structure—particularly as they may have been influenced by impairment. The present findings suggest, however, that those involved in the supervision of care should also consider the ways that social position influences the experience of illness, impairment, age and various dimensions of the self.

In addition, broader social policy initiatives should consider the function these social status resources play in the associations between age, disability and mastery. While politically feasible strategies rarely include direct redistribution of status resources, it is important to acknowledge the disadvantage impairment creates in the acquisition of education, employment, and income. Since policy decision-makers are often left with little fiscal flexibility, a general effort to reduce (or at least address) the employment



disadvantages faced by the impaired can represent a central starting point. The evidence in the present study suggests that among men under age 60, employment is particularly beneficial for mastery, while unemployment is especially detrimental.

Given the disparity between disabled and nondisabled in employment, one possible policy initiative might channel resources toward the provision of some form of work that is consistent with individuals' physical capacity to work. One problem with that approach, however, is that if governmental assistance is tied to one's absence from the workforce, finding low-paying work may inadvertently conflict state-supported provision. It seems beneficial, in the general sense, to reinforce the notion that work is linked to earned income—we know that these rewards have direct benefits for the sense of control. Receiving assistance that is not tied to work, however, may actually reduce perceived control because of the external nature of the income source. State benefits are often not directly linked to one's efforts. It is within the context of balancing assistance, work, and dependency that policy makers must address the issue of impairment and unemployment. This action, no doubt, can benefit from the knowledge produced by social research like the present study that examines the specific associations between mastery, work, and income among impaired as it occurs during the socially-prescribed "productive years." We readily acknowledge that work typically, but not always, cultivates higher levels of mastery. In addition, while the findings suggest employment is more beneficial for mastery among men, women are increasingly represented in the workforce. To the extent that employment also becomes an increasingly important source of identity for women, we might expect the psychosocial benefits of work to become more similar for men and women. These

considerations highlight the need for further research that specifically addresses the characteristics of work and its implications for the self in the context of age and impairment.

Health practitioners may also benefit from the findings regarding the importance of social resources. Education and social support are crucial factors in health and well-being. In addition, both are potentially modifiable. The present study found that education is more beneficial for mastery among the disabled. Additionally, disability undermines some of the benefits of support, particularly in later life and among women. These findings have important consequences in settings involving dyads of doctor and patient, or increasingly, triads of doctor-patient-caregiver. Individuals in health care settings who are provided with more education about their condition, for instance its cause and development, and the dimensions of treatment, may experience an enhanced sense of control. Because education appears to provide more benefits to mastery among impaired individuals, it may be that small changes in care provider and receiver interactions can directly influence one's sense of personal agency. Providers can also instill caregivers within the triad with more knowledge about various dimensions of the patient's condition.

While we know from existing research and the present study that social support often serves health-enhancing functions, this study suggests that support can be also detrimental in certain contexts. Support may actually undermine mastery among impaired. Caregivers involved in the provision of support should be aware of the potentially negative consequences of support on the sense of personal agency among care receivers. Clinical providers can play an important role in clarifying for both the impaired individual and the

caregiver the extent of physical limitation and the degree of “appropriate” support the impaired individuals needs. That is, assistance with particular activities of daily living should match need. The potential consequence of incompatibility between need and assistance may work to undermine the impaired person’s sense of control. In these types of care interactions, the outcomes of support are important if the overall goal is to maintain independent functioning and psychosocial well-being. Social research like the present study can help guide a more sound approach to caregiving and assistance of the impaired that considers the consequences of such action on the self.

The discussion above is certainly only a brief sketch of the applied possibilities of the current work. The present findings, in themselves, are minor compared to the overall effort that is documented in the medical sociology literature regarding the various dimensions of age and disability. Their importance for contributing to what we know about the distribution of personal resources, however, is unique. In the broader sense, as age becomes more politicized with changing demographics and fiscal strains of health care for older adults, policy-makers may look increasingly toward the extension of independence and prolonged self-care in later life. In addition, the role of age and impairment in the distribution of self-processes will undoubtedly continue to be an important topic for applied sociological research as the public, care providers, and policy makers seek to help individuals at all ages remain functional and independent for as long as possible.

## Limitations

Several limitations of the present study should be acknowledged. They involve three broad areas: 1) the cross-sectional analyses; 2) data regarding social comparison processes and referent action; and 3) cross-cultural differences.

First, these findings were obtained using cross-sectional analyses and therefore fail to address any aspect of change in mastery over time. Rather, the focus was to understand differences in the level of mastery across age, disability and other factors. While age differences may represent life-course changes, they also reflect cohort differences that arise from differing historical and social contexts. Future research should consider a slightly different analytical approach that considers how mastery changes over time and factors that determine such change.

Some previous evidence documents that the sense of control does indeed change over time. Further research is needed that addresses the extent of that change, the direction, and the possible determinants in the context of advancing age across many years of individual lives. Multiwave panel designs may provide some answers regarding the extent of change in mastery over a significant time-frame. Yet most studies that have examined different periods of the life course have found inconclusive evidence about the direction of change in mastery. Some report increased control, others document loss. The lack of consistent findings points to the difficulty in drawing sound conclusions from data that spans over a few years or has truncated age ranges. In contrast, to adequately assess the degree of change over the life course, researchers must collect observations that track

respondents over an entire age-range to more effectively examine possible physical, social, and psychological causal factors involved in the change in mastery over the life course.

The documented patterns found in this study are helpful for highlighting the dramatic differences between disabled and nondisabled, as well as young and old. In addition, however, practitioners and caregivers may benefit from information on how increased impairment influences mastery over time. Those involved in the care and maintenance of physical function are likely to strive for *the* most optimal configurations of care, assistance, and support. Social research that enhances knowledge about the dynamic nature of the impairment-mastery association as it changes over time will have important consequences for all involved in the assistance of impaired individuals of any age. For example, previous research that has focused on the impact of impairment in later-life has provided caregivers with useful information regarding the physical, social, and psychological consequences of giving elders more control over their environment. In the present study, however, the implications of age-referent impairments highlight the importance of recognizing the different impact of impairment outside the normative boundaries set by the socially prescribed timetable. While the circumstances of such impairment vary greatly, the themes that emerge in illness experiences and the patterns that surface in analyses can be combined to tell an important story about how impairment impresses upon adults' sense of personal agency—both young and old adults.

Moreover, the obstacles posed by limitations may lead to lower mastery, which in turn can negatively affect one's motivation to engage in physical exercise and maintain physical function. It seems unlikely that these processes, and the expectations about

physical capacity, have the same trajectories for the young and the old. Again, the cross-sectional frame of analysis in the present research places constraints on the ability to assess specific trajectories of limitations and mastery. In addition, further research could address the extent to which non-normative impairment sets in motion a process of accelerated decline in personal agency which, in turn, influences later impairment.

Given the findings and their interpretation, two more critical questions regarding the limitations of the present study are warranted. They involve the interpretation of age by disability interaction effects that vary by age. First, there is a critical need to understand the extent to which individuals are oriented to social comparison reference-making action. The present data contain no direct measures regarding the extent of one's use of social comparison in their cognitive processes. Until such new data are available regarding the degree of individual orientation toward reference-making, we can only speculate about the degree that these processes explain the patterns observed in the present study. Having direct measures of social comparison would allow us to better implicate social comparison and reference-normative psychosocial processes in the complex patterns observed between age, disability, and mastery. In addition, longitudinal analyses would enable the examination of the change in social comparisons over time and the influence of such change on the joint effect of age and disability on mastery.

A second question involves the extent to which social involvement and support help explain the processes of social comparison. Impaired individuals may have different forms of support and social participation depending on the severity of their condition. Are individuals who seek greater social involvement or support to assist in coping with the

obstacles presented by impairment less likely to engage in generalized references to age-peers? Essentially, this is a question that seeks to explain variation in the conditional effect informal support and social participation has on mastery according to the context in which it occurs. The present study considers the benefits of support and social participation, along with the effect of disability and impairment on such benefits, but is limited in its capacity to assess the meaning and practical implications of support. What type of support is damaging? What exactly are the contexts in which support would have negative versus positive effects? Is it an issue of “amount” of support, type of support, or source of support? These questions provide possible direction for future research that might examine the qualitative aspects of support and social participation and seek to better understand their potential benefits for both mastery in the context of age and disability.

Finally, the present study is limited by its homogeneity with respect to race and ethnicity. There is some evidence that broad cross-cultural differences exist in illness experience and meaning, the socially prescribed timetable, and perceptions about self-potency and personal agency. Given the importance of cross-cultural factors in these processes, we do not know whether the findings in the present study would hold true to ethnically or culturally diverse samples. There is little doubt that further research is needed to test the extent to which the patterns discovered regarding age, impairment, and mastery would be found among different ethnic groups in the population.

## Future Research and Conclusions

Given the above discussion concerning the limitations of the current research, the following section addresses three broad areas for future research. These include age, disability, and status variables. I examine these issues separately with recognition that there is substantial overlap between them.

First, additional research is needed to address what additional factors might explain why mastery is negatively associated with age. The present study examine how variables influence the level of mastery across level of age. Not addressed, however, is whether mastery actually *changes* over time with increasing age. It may be that there are cohort or period effects at work in these data such that the differences in mastery are due to factors beyond those associated with aging as a process of change. That is, older adults may feel less in control because of particular historical experiences common to their age-group. While this seems less plausible than the hypothesis that aging itself causes changes in the sense of control, some research suggests that cohorts experience different qualitative educational experiences and that such experiences shape the perceptions of self differently across successive age-cohorts.

There are several implications of the present research regarding impairment that raise the need for future research. The first involves a qualitative understanding of the timing and perceived disruption of impairment. The timing of the impairment is “off-time” if it occurs during the years of young adulthood to middle-age (or when the greatest advancement in status attainment is expected). Future research would benefit from examining the extent to which individuals self-define their condition as “off-time” and



measure the degree of perceived disruption of other activities of daily living. That is, does the individual's evaluation of the timing of impairment influence mastery? And what are the mechanisms that occur between perceived timing and personal agency?

A second issue that deserves further investigation involves the Activities of Daily Living (ADL) scale. Although the present study addresses the limitations in basic activities of daily living, there was no measure of "higher-level" function disruption. New measures of combined ADL and Instrumental ADLs (IADL) indices would better assess the full range of functional limitations. Indeed, an individual's capacity to function independently accounts for significant aspects of their quality of life and state of health and well-being. While this may be particularly true for older adults who typically suffer greater impairment, the present research finds that it is particularly important for the sense of mastery among younger persons (men) with disabilities. Combining ADLs and IADLs would assist in our ability to identify the extent of dysfunction, and the degree and nature of the influence of that dysfunction on self-processes. The extended ADL scale, in combination with greater qualitative assessment of perceived need for assistance, may also enhance our understanding of the association between ADLs and mastery. For example, the negative association may be reduced if assistance with ADLs is highly desired and perceived as age-normative.

Additional research is also needed to address several important questions regarding the importance of status variables: 1) what is the meaning of work (quality and quantity) for the self and how does it vary depending on the combination of age and functional status? 2) what is the effect of previous employment status or income level on the impact

of disability on mastery? and 3) does the negative effect of disability occur because it removes one from status positions or because it poses obstacles to the achievement of status gains?

This study focused, for example, on the importance of status variables in reducing the negative association between disability and mastery. Since no variables are actually manipulated in the current study, inferences regarding causality are offered tentatively. That is, disability is implicated in producing obstacles that block the attainment of status variables. Future research must determine, for example, whether these findings would generalize to cases where individuals were in low status positions during the period before disability. It may be that disability is less detrimental for mastery depending on the sequencing of impairment and status attainment.

Moreover, although the current research considers the significance of employment on mastery, it may be more important to consider occupational prestige in the analyses. That is, if one has a high prestige job and loses it because of impairment, we might expect the status disruption to be greater than it would for an individual in a lower prestige position. In addition, the importance of age and the socially prescribed timetable is directly relevant here. If the loss of prestigious work due to impairment occurs in one's prime productive years, it may be more damaging than if it arrives closer to retirement age when physical decline is somewhat more normative. In addition, higher prestigious work is often less physical in nature, and therefore may place less restrictions on impaired individuals. In contrast, lower prestige, physical labor will by its very nature exclude workers with more severe impairments. These factors need to be closely examined in future research.

The results presented in these analyses raise provocative questions regarding the social distribution of the sense of mastery. The findings suggest that our understanding of how mastery is distributed in the population is improved if our lens includes disability and functional limitation. In these contexts, the distribution of mastery often depends on gender, age, or a combination of both of these stratifying variables. In addition, age and gender help illuminate the nature and extent of the effect social resources like education, social support, and social participation have on mastery.

While the patterns described in this research contribute to the growing scholarly investigation of psychosocial process of disability and aging, there is much to learn about the actual mechanisms that connect mastery to the broader physical, psychological, and social dimensions of our lives. We know mastery is important as an outcome and antecedent in medical sociological research. In addition, research documents the ways in which mastery is distributed by social variables. The complex association between age, mastery, disability, and functional limitation over time remains ripe for further investigation. Cross-sectional analyses limited my ability to sketch the actual dimensions and causes of change in the sense of control over time. A longitudinal approach, however, with both disabled and nondisabled samples may enhance our access to the precise mechanisms that cause personal agency to decline with age, as well as the way increasing limitations over time interact with previous levels of mastery to potentially effect both future limitations and mastery.

## REFERENCES

- Antonovsky, A. 1987. *Unraveling the mystery of health: how people manage stress and stay well*. San Francisco: Jossey-Bass.
- Baltes, M. M., and P. B. Baltes (eds). 1986. *The Psychology of Control and Aging*. N.J., Lawrence Erlbaum Associates.
- Baltes, M. M., H.W. Wahl, and U. Schmidt-Furtoss. 1990. "The daily life of elderly Germans: activity patterns, personal control, and functional health." *Journal of Gerontology*, 45: 173-79.
- Bandura, A. 1981. "Self-referent thought: a developmental analysis of self-efficacy." In J.H. Flavell & L. Ross (Eds.), *Social cognitive development: Frontiers and possible futures* (pp. 200-239). New York: Cambridge University Press.
- Berk, L. 1989. *Child Development*. MA., Allyn and Bacon.
- Bultena, G., & E. Powers. 1978. "Denial of aging: age identification and reference group orientations." *Journal of Gerontology*, 33:748-754
- Caplan, G. 1981. "Mastery of stress: psychosocial aspects." *American Journal of Psychiatry*, 138: 413-420.
- Cobb, S. 1976. "Social support as a moderator of life stress. *Psychosomatic Medicine* 38:300-14.
- Cohn, S. & Wills, T.A. 1985. Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, 98, 310-357.
- Dean, A., N. Lin, M. Tausig, & W. Ensel. 1980. "Relating types of social support to depression in the life course." *Paper presented at the American Sociological Association Meetings*. New York.
- Diggins, J. 1996. *Max Weber: The Politics of Spirit and Tragedy*.
- Downey, G., P. Moen. 1987. "Personal efficacy, income, and family transitions: a longitudinal study of women heading households." *Journal of Health and Social Behavior* 28:320-333.
- Durkheim, E. 1951. *Suicide*. Free Press: NY.
- Elder, G., J. Liker. 1982. "Hard times in women's lives: historical influences across forty years." *American Journal of Sociology* 88(2):241-69.

- Ferree, M. 1976. "Working class jobs: housework and paid work as sources of satisfaction." *Social Problems*. 23:431-441.
- Garrity, T.F. 1973. "Vocational adjustment after first myocardial infarction: comparative assessment of several variables suggested in the literature." *Social Science and Medicine*, 7, 705-717.
- Gecas, V. 1989. "The social psychology of self-efficacy." *Annual Review of Sociology* 15:291-316
- Gecas, V. and M.L. Schwalbe. 1983. "Beyond the looking glass self: social structure and efficacy-based self-esteem." *Social Psychology Quarterly*, 43(2):77-88.
- Gecas, V. and M.L. Schwalbe. 1993. "The self-concept." *Annual Review of Sociology*.
- Gordon, C. 1971. "Role and value development across the life cycle." In Jackson, J. W. (ed), *Role: Sociological Studies IV*. London: Cambridge University Press.
- Gove, W., J. Tudor. 1973. "Adult sex roles and mental illness." *American Journal of Sociology* 78:812-35.
- Gurkanik, J. M., and G. Kaplan. 1989. "Predictors of healthy aging: prospective evidence from the Alameda County Study." *American Journal of Public Health*, 79(6):703-708.
- Henrard, J.C. 1996. "Cultural problems of aging especially regarding gender and intergenerational equity." *Social Science and Medicine*, 43, 5: 667-680.
- Hickey, T. 1980. *Health and Aging*. Monterey, CA: Brooks/Cole Publishing.
- House, J. S., R. Kessler, A. R. Herzog, R.P. Mero, A.M. Kinney, and M.J. Breslow. 1991. "Age, socioeconomic status, and health." *The Milbank Quarterly*, 68: 383-411.
- House, J., K. Lanis, and D. Umberson. 1988. Social relationships and health. *Science* 241:540-45.
- Idler, E. 1993. "Age differences in self-assessments of health: age changes, cohort differences, or survivorship?" *Journal of Gerontology*, 48:S289-S300.
- Johnson, R. J., & F. Wolinsky. 1993. "The structure of health status among older adults: disease, disability, functional limitations, and perceived health." *Journal of Health and Social Behavior*, 34: 105-121.

- Kaplan, R.M., Chadwick, M.W., & Schimmel, L.E. 1985. "Social learning intervention to promote metabolic control in Type I diabetes mellitus: private experiment results." *Diabetes Care*, 8, 152-155.
- Kaplan, R. B., & M. Toshima. 1990. "The functional effects of social relationships on chronic illness and disability." Pp. 427-53 in *Social Support: An Interactional View*, edited by B.R. Sarason, I.G. Sarason, and G.R. Pierce. New York: Wiley.
- Katz, S.A., A.B. Ford, R.W. Moskowitz, B.A. Jackson, and M.W. Jaffe. "Studies of illness in the aged: the index of ADL." *Journal of the American Medical Association*, 183:914-19.
- Kobasa, S.C. 1979. Stressful life events, personality, and health. *Journal of Personality and Social Psychology*, 37, 1-11.
- Kobasa, S.C. 1982. "The hardy personality: toward a social psychology of stress and health. In G.S. Sanders & J. Suls (Eds.), *Social psychology in health and illness* (pp. 3-32), Hillsdale, NJ: Erlbaum.
- Kohn, M. 1972. "Class, family and schizophrenia: a reformulation." *Social Forces* 50 (3): 295-313.
- Kohn, M., and C. Schooler. 1978. "The reciprocal effects of substantive complexity of work and intellectual flexibility: A longitudinal assessment." *American Journal of Sociology* 84:24-52.
- Kuhl, J. 1986. "Aging and models of control: the hidden costs of wisdom." In Baltes & Baltes (eds.) *The Psychology of Control and Aging*. NJ: Erlbaum.
- Langer, E., & J. Rodin. 1976. "The efforts of choice and enhanced personal responsibilities for the aged: A field experiment in an institutional setting." *Journal of Personality and Social Psychology*, 34, 191-198.
- Levine, S. 1995. "Time for creative integration in medical sociology." *Journal of Health and Social Behavior* Extra Issue): 1-4.
- Mechanic, D. 1995. "Sociological dimensions of illness behavior." *Social Science and Medicine*, 41: 1207-1216.
- Mirowsky, J. 1995. "Age and the sense of control." *Social Psychology Quarterly* 58: 31-43.
- Mirowsky, J. 1996. "Age and the gender gap in depression." *Journal of Health and Social Behavior*, 37: 362-380.

- Mirowsky, J. & C. Ross. 1989. *Social Causes of Psychological Distress*. Hawthorne, NY: Aldine.
- Mirowsky, J. & C. Ross. 1996. "Age and depression." *Journal of Health and Social Behavior*, 33: 187-205.
- Neugarten, B. 1996. *The Meanings of Age*. Chicago: University of Chicago Press.
- O'Leary, A. 1985. "Self-efficacy and health." *Behavioral Research and Therapy*. 23:437- 51.
- Pearlin, L., M. Lieberman, E. Menaghan, J. Mullan. 1981. "The stress process." *Journal of Health and Social Behavior* 22: 337-56.
- Pearlin, L., and C. Schooler. 1978. "The structure of coping." *Journal of Health and Social Behavior* 19:2-21.
- Peck, R. 1968. "Psychological developments in the second half of life." In B. Neugarten (Ed.), *Middle Age and Aging: A Reader in Social Psychology*. Chicago: University of Chicago Press.
- Rodin, J. 1986a. "Health, control, and aging." In Baltes & Baltes (eds.) *The Psychology of Control and Aging*. NJ: Erlbaum.
- Rodin, J. 1986b. "Aging and health: effects of the sense of control." *Science* 233:1271-76.
- Rodin, J., & E.J. Langer. 1980. "Age labels: the decline of control and the fall of self-esteem." *Journal of Social Issues*, 36, 12-29.
- Rodin, J., & C. Timko. 1992. "Sense of control, aging, and health." In Ory, Abeles, & Lipman (eds) *Aging, Health, and Behavior*. Newbury Park, CA. Sage.
- Ross, C., and C. Bird. 1994. "Sex stratification and health lifestyle: consequences for men's and women's perceived health." *Journal of Health and Social Behavior* 35:161-178.
- Ross, C & Mirowsky, J. 1992. "Households, employment, and the sense of control." *Social Psychology Quarterly* 55: 217-235.
- Rowe, J. W., and R. Kahn. 1987. "Human aging: usual and successful." *Science* 143(JUL 10): 143-49.

- Schaie, K. W. 1983. "The Seattle longitudinal study: a 21-year exploration of psychometric intelligence in adulthood." Pp. 64-135 in *Longitudinal Studies of Adult Psychological Development*, edited by K. Warner Schaie. New York: Guilford.
- Schwalbe, M.L., & V. Gecas. 1988. Social psychological consequences of job-related disabilities. In *Work Experience and Psychological Development Through the Life Span*, ed. J. T. Mortimer, K. M. Borman, pp. 233-72. Boulder, Colorado: Westview.
- Seeman, M. 1959. "On the meaning of alienation." *American Sociological Review*, 24, 783-791.
- Seeman, M. & T. Seeman. 1983. "Health behavior and personal autonomy: a longitudinal study of the sense of control in illness." *Journal of Health and Social Behavior*, 24, 144-60.
- Seligman, M. 1975. *Helplessness: On Depression, Development, and Death*. San Francisco: W. H. Freeman and Company.
- Smith, M. B. 1968. "Competence and socialization." Pp. 270-320 in *Socialization and Society*, edited by J.A. Clausen. Boston: Little, Brown.
- Strickland, B.R. 1978. "Internal-external expectancies and health-related behaviors." *Journal of Consulting and Clinical Psychology*, 46: 1192-1211.
- Thoits, P. 1984. "Explaining distributions of psychological vulnerability: lack of social support in the face of life stress." *Social Forces* 63: 453-81.
- Thoits, P. 1987. "Gender and marital status differences in control and distress: common versus unique stress explanations." *Journal of Health and Social Behavior*, 28: 7-22.
- Thoits, P. 1995. "Stress, coping, and social support processes: where are we? what next?" *Journal of Health and Social Behavior* (Extra Issue): 53-79.
- Turner, H. 1994. "Gender and social support: taking the bad with the good?" *Sex Roles*, 30: 521-541.
- Turner, R. J. 1983. "Direct, indirect and moderating effects of social support on psychological distress and associated conditions." In Howard Kaplan (ed.) *Psychosocial Stress: Trends in Theory and Research*. New York: Academic Press.



- Turner, R. J., and F. Marino. 1994. "Social support and social structure: a descriptive epidemiology." *Journal of Health and Social Behavior*, 35: 193-212.
- Turner, R. J., and S. Noh. 1988. "Physical disability and depression: A longitudinal analysis." *Journal of Health and Social Behavior*, 29: 263-77.
- Turner, R. J., and P. Roszell. 1994. "Personal resources and the stress process. In W.R. Avison and I.H. Gotlib (eds), *Stress and Mental Health: Contemporary Issues and Prospects for the Future*. N.Y.:Plenum Press.
- Turner, R. J., and W. Wood. 1985. "Depression and disability: the stress process in a chronically strained population." *Research in Community and Mental Health*, 5:77-109.
- Verbrugge, L. M., J. M. Reoma, and A. L. Gruber-Baldini. 1994. "Short-term dynamics of disability and well-being." *Journal of Health and Social Behavior* 35: 97-117.
- Waldron, I. 1983. "Sex differences in illness incidence, prognosis, and mortality: issues and evidence." *Social Science and Medicine* 17(16): 1107-23.
- Wallston, K. A., & B. S. Wallston. 1982. "Who is responsible for your health? The construct of health locus of control." In G.S. Sanders & J. Suls (Eds.), *Social psychology in health and illness* (pp. 3-32), Hillsdale, NJ: Erlbaum.
- Weiss, R.S. 1974. The provisions of social relationships. In Z. Rubin (Ed.) *Doing unto others*. Englewood Cliffs, NJ: Prentice-Hall.
- Wheaton, B. 1980. "The sociogenesis of psychological disorder: an attributional theory." *Journal of Health and Social Behavior* 21:100-24.
- Wheaton, B. 1983. "Stress, personal coping resources, and psychiatric symptoms: an investigation of interactive models." *Journal of Health and Social Behavior*, 24: 100-24.