PART I

Introduction

Introduction: conceptualizing gender differences in aspirations and attainment – a life course perspective

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This book introduces a life course perspective to the study of gender differences in aspirations and attainment, addressing the interplay of individual and structural factors in shaping the lives of men and women and how this interplay develops over time and in context. It examines and describes how aspirations, self-concepts, and attainments form and develop during childhood, adolescence, young adulthood, and later in adult life, and brings together evidence from across disciplines to gain a better understanding of the multiple influences on individual lives.

Gender differences in educational attainment and future outlook have been a topic of public debate since the late 1980s. Initially the focus was on the underrepresentation of females in the sciences. More recently focus has shifted to a concern about the academic underachievement of males – following evidence suggesting that boys were failing to improve their educational performance at the same rate as girls, and that girls were overtaking boys in their academic motivation and the level of qualifications obtained (Arnot, 2002; DiPrete & Buchmann, 2013). Beginning in elementary school, girls outperform boys and this gap continues throughout secondary school and higher education. The academic success and achievements of girls have been hailed as a story of the extraordinary success of post-war egalitarian movements. However, the shift in the gender balance, with girls catching up with or overtaking boys in their academic motivation and academic attainments, has also brought about something of a moral panic, leading to calls for support for underachieving boys to retrieve their educational advantage (Epstein, Elwood, Hey, & Maw, 1998; Younger & Warrington, 2006). The threat of boys' disengagement from the educational system is of particular concern in the current era of growing knowledge economies requiring a highly skilled labor force. However, it has also been argued that recent gains of women in the educational system reflect a "stalled gender revolution" (Carlson, 2011; England, 2010), affecting some groups and some areas of life more than others.

Huge strides have been made over the past half-century in terms of opportunities for women. The proportion of women in further education has grown persistently; women are now more strongly attached to the labor market than ever before, even after childbirth, and are increasingly represented in professional and managerial jobs. In the United States (US) and the United Kingdom (UK), for example, more and more women are taking on the role of main breadwinner in the family, representing a massive upheaval in general gender roles (Rosin, 2012).

Yet, there are persisting gender differences in the household division of labor with women taking on the lion's share of care responsibilities, as well as continuing gender segregation in the labor market. Key legal and economic rights – like equal pay – are yet to become reality. In the UK and the US, for example, women are outnumbered four to one in Parliament and Congress (Inter-Parliamentary Union, 2013), women working full-time are paid on average 15–19% less than men, and two thirds of low-paid workers are women (US Bureau of Labor Statistics, 2012). Furthermore, according to the UK Equal Opportunities Commission (EOC), 41% of pay gap differences are due to career choice.

Explaining gender differences in aspirations and attainment

The size of the gender gap differs considerably by country, by socio-economic background, as well as by race and ethnicity, reflecting complex interactions between individual characteristics and context. Explanations of the persistent gender differences in aspirations and attainment refer to differences in gender socialization and the choices men and women make, gender essentialism, as well as outright gender discrimination. In this book we argue that both structure and agency play a role, and that differences in early experiences can accumulate over time and have long-term implications. In order to gain a better understanding of persisting gender inequalities in attainment, it is vital to learn more about the interlinkages between structural constraints and individual values, attitudes, and capabilities, and to examine experiences of attainment, career choices, and career development in context and over time.

Gender socialization

As women have been catching up in education and labor force participation, one explanation for the persisting gender earnings gap is that women have different expectations than men regarding their labor market achievements and that they choose different career paths due to differences in self-perceptions, goals, and values linked to gender identity. For example, according to the expectancy-value perspective (Eccles, 1987, 2009), identity can be conceptualized in terms of two basic sets of self-perceptions: (a) perceptions related to one's skills, characteristics, and competencies, and (b) perceptions related to personal values and goals and the subjective importance of these various personal characteristics. Previous research suggests that girls tend to underestimate their abilities, especially in math and science; these differences in estimates of one's relative competencies across different subject areas, in turn, can serve as a critical filter regulating access to high-status and high-income occupations because they lead females and males to pursue different courses and occupations (Correll, 2004; Eccles, Wigfield, & Schiefele, 1998; Entwisle & Baker, 1983). Females

also express less interest in mathematics and the physical sciences than males and more interest in literature and reading than males – and vice versa (Eccles, 2009). It is important to note that these gender differentiated self-perceptions and values exist despite the fact that females do just as well as males, on average, in science- and math-related courses (see, for example, Chow & Salmela-Aro; Jerrim & Schoon; Parker, Nagy, Trautwein, & Lüdtke; Wang & Kenny, this volume). However, as a consequence of these differentiated beliefs, both men's and women's career aspirations and choices are restricted to occupations that are congruent with these gender-stereotyped self-perceptions and values (Francis & Skelton, 2005; Watt & Eccles, 2008). Alas, the careers that females are more likely to select often provide lower salaries than the occupations that males are more likely to select (Marini & Fan, 1997; Scott, Crompton & Lyonette, 2010; see also Aisenbrey & Brückner, this volume). Gender differences in occupational choice and attainment can thus be understood as an example of social reproduction processes due to gendered perceptions of both one's own capabilities and interests resulting from the fact that males and females have been socialized to have different but equally important goals for their lives (Maccoby & Martin, 1983). Early socialization influences include the cultural milieu, comprising cultural stereotypes and family demographics, as well as the socializer's beliefs and behaviors (Eccles, 1987, 2009).

Gender essentialism

In contrast to theories grounded in social reproduction models of gendered patterns of educational and occupational choice, scholars focused on gender essentialism argue that women and men are *innately* and fundamentally different in interests and skills (Charles, 2011; Charles & Bradley, 2009; Ridgeway, 2009). According to this view, evolution has primed women to have different lifestyle preferences than men that cut across social class, education, and ability differences. Preferences for a "home-centered," "work-centered," or "adaptive" lifestyle can shift over the life course in their salience and emphasis for work versus family orientation (Hakim, 2000). Yet, evolution is assumed to have prepared women to make different occupational choices than men – prioritizing family over careers, preferring work that involves people not things – and it is suggested that these fundamental gender differences start in the very structure of the human brain (Baron-Cohen, 2003; Brizendine, 2006; Burman, Bitan, & Booth, 2008; Buss, 1991; Gurian Institute, Bering, & Goldberg, 2009; Pinker, 2008). This view, however, takes attention away from continuing gender inequalities due to structural discrimination (Fine, 2010).

Gender discrimination

Despite the fact that many barriers have been removed, gender discrimination still exists, even in highly developed countries. In particular, there is

persistent evidence about continuing discrimination against women in the labor market (Brückner, 2004; England, 2010; Scott et al., 2010). Even when women succeed in entering top managerial positions or male-dominated occupations, they are often paid less than men, despite having the same or higher-level qualifications and experience. Gender segregation in the workplace persists in terms of there being typical male and female jobs, and a structural devaluation of women's work creating economic penalties for working in the feminized sector (Crompton, 2006; England, 2010; Hegewisch, Williams, & Zhang, 2012; Lewis & Smee, 2009). Particular occupational fields, such as the teaching occupations, have become "feminized," which generally means they are lower status and less well paid, but offer more opportunities for combining work and family/care-related responsibilities. From a structural point of view, gender segregation in the labor market is seen as a by-product of gender discrimination and the gendered nature of the occupational system, which creates constraints for young women and allocates them to subordinate positions in the labor market (Krüger, 2003), often not in the positions, occupations, or fields to which they aspired (Aisenbrey & Brückner, 2006).

Cumulation of experiences

Life chances and opportunities remain circumscribed by gender, ethnicity, social origin, institutional structures, and the social and economic resources inherent in the connections young people have to their families and the wider social context. Furthermore, the notion of time is important, in particular regarding the timing of effects and the cumulation of experiences over time. It has been argued that the persisting and repeated experience of discrimination, of gendered expectations and stereotypes can affect minds, self- and social perceptions, choices and behavior, and in turn become again part of the gendered social world (Correll, 2001; Fine, 2010; Steele, 1997). While the impact of existing gender stereotypes and gender beliefs on an outcome in any one situation may be small, individual lives are lived through multiple, repeating, social relational contexts, and small biasing effects tend to accumulate over the life course, resulting in substantially different pathways and social outcomes for men and women who are otherwise similar in background or ability (Ridgeway & Correll, 2004). In this book we thus adopt a life course perspective to assess influences in early childhood, adolescence, young adulthood, and later life and how these influences change and accumulate over time.

A developmental-contextual approach for the study of motivation and behavior

The chapters included in this book examine the antecedents, correlates, and longer-term outcomes of career aspirations and choices. The main

theme running through the book concerns the processes of selection and exclusion that reflect and create gender inequalities in aspirations and attainment. A useful integrative framework for studying gendered pathways and decision making draws on assumptions developed within an ecological life course perspective of human development (Bronfenbrenner, 1979; Elder, 1998; Schoon, 2006) and Eccles' socio-cultural expectancy-value model of motivated behavioral choices (Eccles (Parsons) et al., 1983; Eccles, 1987, 2008). Both approaches are explicit developmental models, taking into account the interplay between structure and agency over time, and conceptualizing the multiple and interlinked influences shaping individual lives. However, while life course theory focuses more on the role of the socio-historical context and institutional structures, the model of motivated behavioral choices focuses more on the role of individual agency and the fit between characteristics of the individual and those of their social environment. Combining both approaches gives a better understanding of the dynamic interplay between agency and structure over time and in context.

Context and timing

According to life course theory, human development is understood to take place in a changing socio-historical context, where the context not merely provides the setting in which individual lives are lived, but through its interactions with the individual constitutes a formative process that makes people who they are (Elder, Johnson & Crosnoe, 2004). Key principles of the life course are (a) that development is a lifelong process; (b) that the antecedents and consequences of behavior can vary according to their timing in a life course; (c) that individuals construct their own life course through the choices and actions they take and within the opportunities and constraints they encounter; and (d) that lives are lived interdependently, and individual experiences are connected to the lives of significant others (Elder, 1998, 1999). A distinctive feature of this ecology is the social inequality associated with class, race, and gender. These are expressed across individual lives and generations in the cumulative dynamics of advantage and disadvantage built up through childhood, adolescence, and the adult years.

The life course perspective views the socio-cultural environment as a crucial influence on human development. Developmental processes occur in a multilevel context and are shaped by social institutions and through interactions with significant others, such as parents, teachers, and peers (Elder, 1998). Individual lives are guided through age-related legal norms as well as population-based norms and informal expectations regarding the timing and sequencing of social roles, or "scripts of life" (Buchmann, 1989; see also Heckhausen, this volume). Age-related norms and expectations can vary by gender, ethnicity, and social class – and are also highly responsive to social change (Elder et al., 2004). For example, changing labor markets requiring a highly skilled labor force led to the widening of educational opportunities in the 1960s, which in turn was associated with

increased and extended education participation among previously disadvantaged groups, including women (see McMunn, Webb, Bartley, Blane, & Netuveli, this volume).

Within the life course framework, pathways through life are understood as developmental processes extending over time, and being shaped by complex interdependent relationships, including links to the wider social context, to one's family of origin, to biographical experiences, and individual agency processes. The individual actively steers the developmental process, bringing to each new situation his or her attitudes, expectations, and feelings, which in turn are influenced by his or her history of earlier interactions with the social context in which they grew up.

Interdependent lives and co-regulation

The principle of linked lives in life course theory highlights the role of significant others in regulating and shaping the timing of life trajectories through a network of informal controls (Elder, 1998). This network of shared social relationships can be understood as a developmental context that extends from the family to friends, teachers, neighbors, peers, and work colleagues. In both life course theory and the model of motivated behavior, the expectations, actions, and beliefs of significant others, or key socializers (Eccles, 2009), are understood to direct and channel behavior in certain directions, to transmit values and beliefs, and to influence aspirations and engagement for certain activities. These influences can stretch across generations, including the reproduction of education, occupation, health, and health behaviors.

Significant others can influence perceptions of self-concepts or choice options through the information and experiences they provide (e.g., by encouraging, ignoring, or discouraging various options linked to college education), or they can act as role models that shape views of how best to integrate work and family obligations. The direction of these influences can, however, also be reciprocal, in that the expectations, beliefs, and behaviors of the developing person can affect the expectations, beliefs, and behaviors of those with whom they are interacting. For example, if a young person is doing well at school it is more likely that parents express high educational aspirations for their child than is the case with low academic achievements.

Motivated choices and behavior

In accordance with life course theory the socio-cultural expectancy-value model of motivated behavior emphasizes that individual lives are shaped through ongoing interactions with the environment (Eccles (Parsons) et al., 1983; Eccles, 2008, 2009), and offers a more in-depth understanding of individual choice and agency processes. Individuals continually make choices, both consciously and non-consciously, regarding how they will spend their time and their

energy. Many significant gender differences in behavior (e.g., educational and vocational aspirations and choices, and decisions about how to integrate work and family obligations) involve an element of choice, even if these choices are heavily influenced by socialization pressures and cultural norms.

Conceptualizing gendered behavior patterns in terms of choices highlights the importance of understanding what becomes part of an individual's perception of the range of possible choices. Although individuals choose from among several options, they do not consider the full range of objectively available options in making their selections. Many options are never considered because the individual is unaware of their existence. Other options are not seriously considered because the individual has inaccurate information regarding either the option itself or the individual's possibility of achieving the option. Still others may not be seriously considered because they do not fit in well with the individual's various social schema, including those linked to gender. Thus, it is likely that gender roles influence educational and vocational choices, in part, through their impact on individuals' perceptions of the field of viable options, as well as through their impact on individuals' own expectations and subjective task values, and the opportunities provided to each individual to develop their skills and interests. Consistent with a life course perspective, beliefs and opportunities are formed over one's lifetime and each opportunity and choice contributes to the pathway along which each person travels.

In Eccles' model of motivated behavior, an individual's expectations for success and the importance or value the individual attaches to the various options are assumed to be the most proximal psychological influences on the choices people make. These two sets of beliefs (expectations for success and importance of the option or task value), in turn, are assumed to be shaped by cultural norms, social roles, and social experiences, as well as personal experiences and one's interpretations and memories of these experiences, and one's aptitudes, talents, personality, and temperamental characteristics. Understanding the processes shaping individuals' perceptions of their field of viable options is essential to our understanding of the dynamics leading women and men to make different life-defining choices. Furthermore, the model assumes that choices are made within life contexts that present each individual with a wide variety of choices. The choice is often between two or more positive options or between two or more options that have both positive and negative components and consequences. Furthermore, each choice has both long-range and immediate consequences. For example, majoring in engineering or science rather than education might make it more difficult to return to the same level of employment or the same position after a career break due to childbirth.

Eccles' socio-cultural expectancy-value model of motivated behavior is a developmental model, taking into account change across time and across situations (Eccles, 2009). Constructs and processes like self-schema and short- and long-term goals and identity formation change over time in part in response to: (a) the acquisition of new experiences and new information; (b) social and biological

clocks that influence the salience of different demands and choices at different ages and in different social niches; (c) entry and exit from different social contexts that influence the salience of different aspects of the social-embedded self as one moves from context to context; and (d) the accumulation of the consequences of prior choices. Because these constructs influence both expectancies and the importance of a task at hand, individuals' behavioral choices will change over time and across situations.

Person × context interactions

According to the person–environment-fit theory (Eccles & Midgley, 1989), behavior, motivation, and associated health and wellbeing are influenced by the fit between the characteristics individuals bring to their social environments and the characteristics of these social environments. Individuals are not likely to do very well, or be very motivated, if they are in social environments that do not meet their psychological needs. For example, if the academic and social environments in the typical junior high or middle school do not fit with the psychological needs of adolescents, then person–environment-fit theory predicts a decline in motivation, interest, performance, and behavior as adolescents move into and through this environment (e.g., see Symonds, Galton, & Hargreaves, this volume). What is critical to note about this argument is not that any transition is bad at this age. Instead it is the specific nature of the transition that matters – and how it matches the developmental status of the individual. The stage-environment-fit theory draws specifically on Elder's (1998) notions of the developmental timing of experiences, arguing that particular types of structural changes, as for example those typical during the shift from elementary school to middle/junior high school, can be inappropriate for early adolescents, and if so, should be changed. The person–environment-fit theory applies to all life stages and transition points, not just the transition from primary to secondary school (e.g., see Salmela-Aro; Heckhausen, this volume). What is crucial is the need to match changing developmental demands to the capacities and resources individuals bring to the situation to facilitate a smooth transition.

Understanding the persisting gender differences in aspirations and attainment requires a broad view of the options and roles available to both men and women, and how these are perceived and evaluated at different life stages. The combination of ecological life course approaches and the socio-cultural expectancy-value model of motivated behavior and person–environment-fit theory provides a conceptual framework that enables us to gain a better understanding of the reciprocal interactions between structure and agency, the dynamic interactions between a changing individual and a changing socio-historical context in shaping aspirations and attainment of men and women. Individual decision making and choice have to be understood against the backdrop of socio-cultural constraints and opportunities, as well as opportunities and challenges arising

from the developmental tasks at a particular stage in life and their integration in one's own life and identity.

Outline of the chapters

Assuming that both structure and agency play a role in shaping gendered pathways through life, the chapters in this book examine the role of structural and individual factors in shaping gender differences in career aspirations and attainment within a life course perspective. Because we are most interested in what happens in school and the labor market, we start with experiences in preschool and extend well into adulthood. We selected authors who could address such questions as: What is the role of parents, peers, and teachers in shaping school experiences and informing the career choices of young people? Does the school context matter, and to what extent do education experiences influence young people's self-concept and their outlook to the future? Do teenage aspirations influence later outcomes regarding education attainment and the assumption of work- and family-related roles? What is the role of institutional structures and the wider socio-historical context in helping young people to realize their ambitions? We also stressed the importance of longitudinal studies to answer these questions. Although each chapter alone does not address all of these questions, as a set they contribute to a better understanding of the different influences on career orientations and outcomes across the life course. The book brings together contributions from different Western countries, drawing on evidence from different disciplines including psychology, sociology, economics, epidemiology, and social policy. Thus the chapters in this book present evidence from across different disciplines and from different countries that are characterized by different education systems and policies aimed at reducing gender inequalities in education and employment opportunities.

The following chapters are arranged into five parts: Parts II to V are organized around different life stages, and the final part examines the role of changing societal conditions. Starting with evidence regarding gender differences in academic attainment during childhood and contextual factors that reinforce or reduce these differences, we examine how both individual and contextual influences shape career orientations and attainment among men and women across much of the life-span. First, in Part II, we describe experiences in preschool and during the transition from primary to secondary education, highlighting in particular the role of significant others, such as parents, teachers, and peers, in shaping school adjustment and attainment. In Part III, career planning and individual decision making during adolescence are examined, focusing on motivational, personal, and contextual factors shaping the experiences and decisions of young people. Next, because so much recent research has focused on occupations in science and technology, Part IV is dedicated to the analysis of factors and processes involved in choosing a science career, investigating antecedents and predictors