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Gender inequalities in the college pipeline

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ABSTRACT

In this paper, we present a comprehensive framework for understanding gender inequality in baccalaureate degree attainment. Our "college pipeline" model addresses two main shortcomings in prior research. First, we examine multiple outcomes and stages in the pipeline that lead to four-year college entry and completion. Second, we examine multiple different pathways that students can pursue in attaining a four-year degree. Our findings indicate that females enjoy a cumulative advantage over males in the pursuit of a baccalaureate degree, but with two important exceptions. First, although females are more likely apply to college at the end of high school, they are also more likely to terminate their schooling in a two-year college than comparable males. Second, females who make an on-time transition into a four-year college experience the greatest advantages over males, and females who delay entering the college pipeline actually do no better than males in attaining a bachelor's degree.

1. Introduction

The growing gender gap in college enrollment and attainment is one of the most important trends in American education during the past 30 years. The female advantage in bachelor's degree attainment increased during the 1990s, and higher percentages of females are both attending and graduating from four-year colleges (U.S. Department of Education, 2002, 2004).[1] These divergent trends in educational attainment by gender are enormously important because earning a bachelor's degree is a powerful predictor of many adult outcomes, such as income, occupational attainment, health, etc. (Pallas, 2000).

In this paper, we argue that prior research on gender differences in baccalaureate attainment has focused too narrowly on four-year enrollment and completion (e.g., Buchmann and DiPrete, 2006; Jacob, 2002). We present a more comprehensive framework for understanding gender inequality in educational attainment, which addresses two main shortcomings in prior research. First, we will examine how gender inequality unfolds as a *process* that includes numerous interconnected and interdependent outcomes. Our analyses will explore the transition into college in greater depth than prior research and examine several important stages (such as on-time college application) that lead students into the college pipeline. Second, we will examine gender differences in the many different paths to a bachelor's degree — e.g., "on-time" entry, delayed entry, and two-to-four-year transfer. Prior research suggests that some of these pathways are more likely to lead to a baccalaureate degree than others. However, no research has examined how gender differences in these pathways are related to female advantages in bachelor's degree attainment.

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[1] During the 1990s, the number females earning a B.A. increased by 21%, while men experienced an increase of 6% (U.S. Department of Education, 2003). Fifty-six percent of enrollees in four-year colleges were female in 1999–2000, and women earned 57% of B.A.s in 2001–2002 (U.S. Department of Education, 2002, 2004).

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Our findings indicate that women are advantaged at each intermediate stage that leads to a baccalaureate degree, with the important exception of college enrollment. Among comparable male and female students, females are more likely to attend a two-year college (and go no further) than enroll directly in a four-year institution. This inequality in enrollment is striking given that we find a significant female advantage in college application. Among students who attend a four-year college, females regain their advantage in the final stage of the process (college completion), although females who delay college entry lose their advantage over males in completion. Overall, the findings suggest a pattern of cumulative advantage for females who make an on-time transition into college, but not for women who delay the decision to attend a four-year college.

1.1. Gender differences in college graduation: taking the long view

Previous research has examined how individual attributes are related to gender differences in college attainment. Females hold numerous advantages over males as they finish their secondary school careers. Jacobs (1989, 2003) argues that gender segregation across occupations leads women to have higher aspirations and make different choices about enrolling in post-secondary education. Since female dominated occupations are more closely tied to post-secondary credentials, females are more likely to pursue post-secondary education than men. Female students also enjoy advantages in both academic skills and habits relative to males from kindergarten through the end of high school (Buchmann et al., 2008). Female students receive higher grades and test scores than males throughout high school (U.S. Department of Education, 2004; Hyde et al., 2008). Females are also exposed to a more rigorous academic curriculum in high school than males (National Science Board, 2008; Reynolds and Burge, 2008; Xie and Shauman, 2003). Finally, female students also exert greater effort in school and are more procedurally engaged than male students, and are less likely to form and/or join an oppositional culture (Carbonaro, 2005; Jacob, 2002; Rosenbaum, 2001; Smerdon, 1999). Prior research has linked many of these female advantages (especially academic skills and experiences) to higher levels of college enrollment and completion by young women after high school (Adelman, 2006; Buchmann and DiPrete, 2006; Jacob, 2002; Stephan et al., 2009).

However, in order to fully understand gender differences in bachelor's degree attainment, we must recognize that college graduation is the culmination of a series of prior, sequentially-ordered stages that students must successfully navigate to have a chance to graduate. Recent research on gender differences in bachelor's degree attainment (e.g., Buchmann and DiPrete, 2006; Jacob, 2002) presents an overly narrow view of the path to a bachelor's degree, focusing solely on college enrollment and completion. This approach overlooks prior stages in the attainment process that might reveal important gender inequalities. In addition, the timing and variation in the pathways leading to four-year college attendance have been ignored. By broadening the theoretical scope of our analysis, we hope to gain new insights into the underlying causes of the female advantage in bachelor's degree attainment.

The literature on college choice provides a useful model for understanding the sequentially-ordered stages that lead to college graduation (DesJardins et al., 2006). Generally, college choice is conceptualized as a three stage process: aspiration formation, search, and choice (Hossler et al., 1989). We have borrowed from and modified this framework to create a conceptual model that highlights key stages and processes that may lead to gender inequality in bachelor's degree attainment. Fig. 1 provides a visual representation of our model. We will use the metaphor of a "pipeline" to describe the process of attaining a bachelor's degree.

Our model begins with the formation of *college ambitions*. Students must self-select into the college pipeline, and the first step in that process is forming a desire to attend college. The next stage in the process entails some minimal level of *planning* for college. Planning includes gathering information about admission requirements, college costs, and (possibly) financial aid, as well as meeting admission requirements (e.g., taking requisite course work, admission tests, etc.). Together, students' college ambitions and planning will lead students to enter the college pipeline by *applying* for admission to a four-year

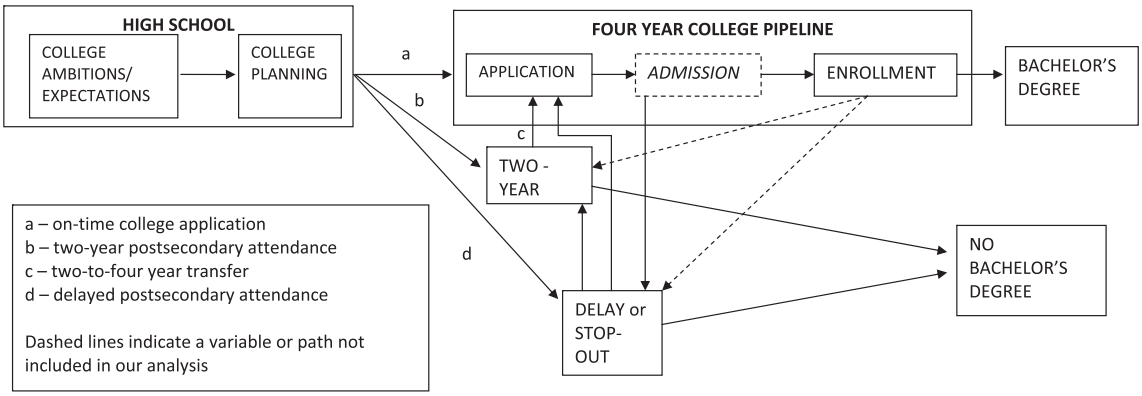

Fig. 1. Stages in the college pipeline.