Ponds, Priorities, and College Academic Performance

Academic motivation is an important predictor of college performance. Academic motivation involves an interplay between individual and environmental characteristics. Individual characteristics include a student's overall academic orientation: his/her lowest-respectable grade-point (GPA) and the extent to which s/he prioritizes academics—such as earning good grades, learning as much as possible in the classroom, and so forth.

While individual-level measures of motivation and their effects on performance have been relatively well-studied, they have been limited in two primary ways. First, students' 'academic motivation' tends to be treated as fixed rather than changing over time in college. For example, Durik, Lovejoy, and Johnson (2009) show that, controlling for high school ability, achievement motivation and performance-approach goals in the first year are positively associated with college GPA two years later, while performance-avoidance goals are negatively associated with college GPA two years later (Durik, Lovejoy, Johnson 2009). Treating academic motivation as a fixed personal characteristic reduces it to a simple cross-sectional predictor variable that is examined for its association with various college outcomes (including persistence and grade attainment).

In reality, however, academic motivation serves as an embodiment of a larger dynamic process of adaptation and individual change over the course of one's time in college. Academic motivations change throughout college based on a wide variety of social, academic, and psychological adjustment experiences (Solberg Nes 2009; Miquelon 2005).

Second, more than simply an individual-level characteristic, motivation is also shown to be influenced by a variety of *contextual* factors like how competitive one's college or hard-working and intelligent one's peers (Durik 2009; Kaufman 2009; Kizilgunes 2009; Komarraju 2009; Turner 2009; Jones 2008; Shell 2008). In other words, students gauge themselves and their abilities relative to the students around them. Group-level social and institutional factors, like a college's average SAT score or GPA create a context within which student's set their own academic priorities and performance goals.

A prominent theory of institutional context's influence on individual (academic) performance is the frog pond theory (FPT). FPT states that, for a given student, increasing institutional selectivity is negatively associated with a variety of outcomes, such as how attending (elementary or secondary) schools with a higher school-average ability is inversely related to academic self-concepts, GPAs, and educational aspirations, controlling for individual student ability. FPT has been widely used to understand students' elementary and high school self-concepts, aspirations, and performance but remains relatively understudied in the context of college performance. The classic study of FPT examines how attending a more-selective college makes students more likely to be 'small fish' in a 'big pond', develop somewhat depressed self-concept, and be less-likely to go into high-performance careers (Davis 1966). More recent work related to FPT pertains to college *admission*, suggesting that attending a highly-selective public high school is negatively associated with admission to a highly-selective college because of the importance of class-rank in college admission decisions (Attewell 2001). In 2005, Espenshade and colleagues tested an extension of the frog pond hypothesis, examining whether a more selective high school environment is negatively correlated with college admission, even when controlling for students' academic abilities (Espenshade et al. 2005). In general, the authors find support for the frog pond

hypothesis in that students' odds of admission are lower if they attend a high-school with more- rather than less-talented peers (Espenshade et al. 2005).

Research examining the effects of a 'frog pond effect' *in-college* has focused on the association between college selectivity on *post-college* outcomes, such as career placement and labor market earnings. One study found that attending a more selective college (measured by average SAT score of enrolled students) was associated with an increase in weekly labor market earnings (Loury, Linda and Garman, David, 1995). Another study found no evidence of a 'mismatch effect' in graduation rates of students who manage to enroll at more-selective universities than their prior academic credentials alone would match them (Alon and Tienda 2005).

While FPT has been studied in the context of high schools, college admission, and post-college outcomes, the associations between college selectivity, students' academic priorities, and college performance have not been thoroughly studied. In the 'total institution' of a college, students form academic orientations—how much they prioritize academics—which influence their goals for their grade performance. The factors that shape students' academic priorities and GPA-goals and—in particular—how these factors *change over time based on actual performance and institutional context* remains understudied.

Research Questions:

1) How does a university's academic context influence a student's academic priorities in the first semester?
2) How important are first-semester academic priorities in predicting college performance after two years?
3) How do students re-assess their academic priorities after their first two years of college? Specifically, does university academic context and actual academic performance during the first two years of college influence students' reformulation of their academic priorities?

Data and Methods

This study uses the Campus Life in America Student Survey (CLASS). CLASS is a restricted-use sample of approximately 2,500 college freshmen at six public and private four-year universities in 2004 who are re-surveyed in their junior year. Using structural equation modeling, we simultaneously model the effects of initial college priorities on students' lowest-respectable-GPA assessment, and how both predict students' grade attainment (GPA) after two years of college. We then examine how initial college priorities and grades attained during the first two years of college influence students' re-calibration of their academic priorities and GPA goals in their last two years of college. Please refer to Figure 1 for model diagram.

Findings

We find that: 1) During the first half of college, the institutional context of a student's university (average SAT score of the entering class, size of the university, whether it is public or private, how 'prestigious' it is) played a significant role in defininining students' perceptions of their own abilities and corresponding priorities in the first two years; 2) Grades earned during the first two years of college are used to update students' benchmark of their academic abilities; 3) As a result of updating their benchmarks, students gradually become less-influenced by their institution's contextual factors. Please refer to Figure 2 for summary of results.

Figure 1. Conceptual Model of Academic Priorities and College Performance

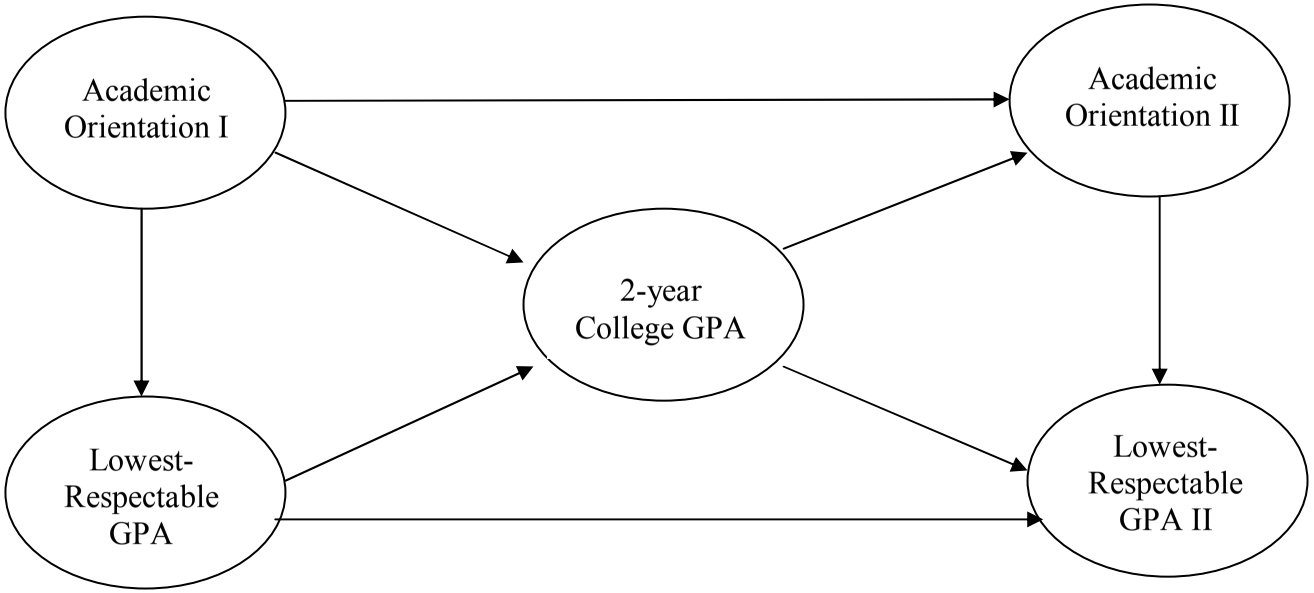
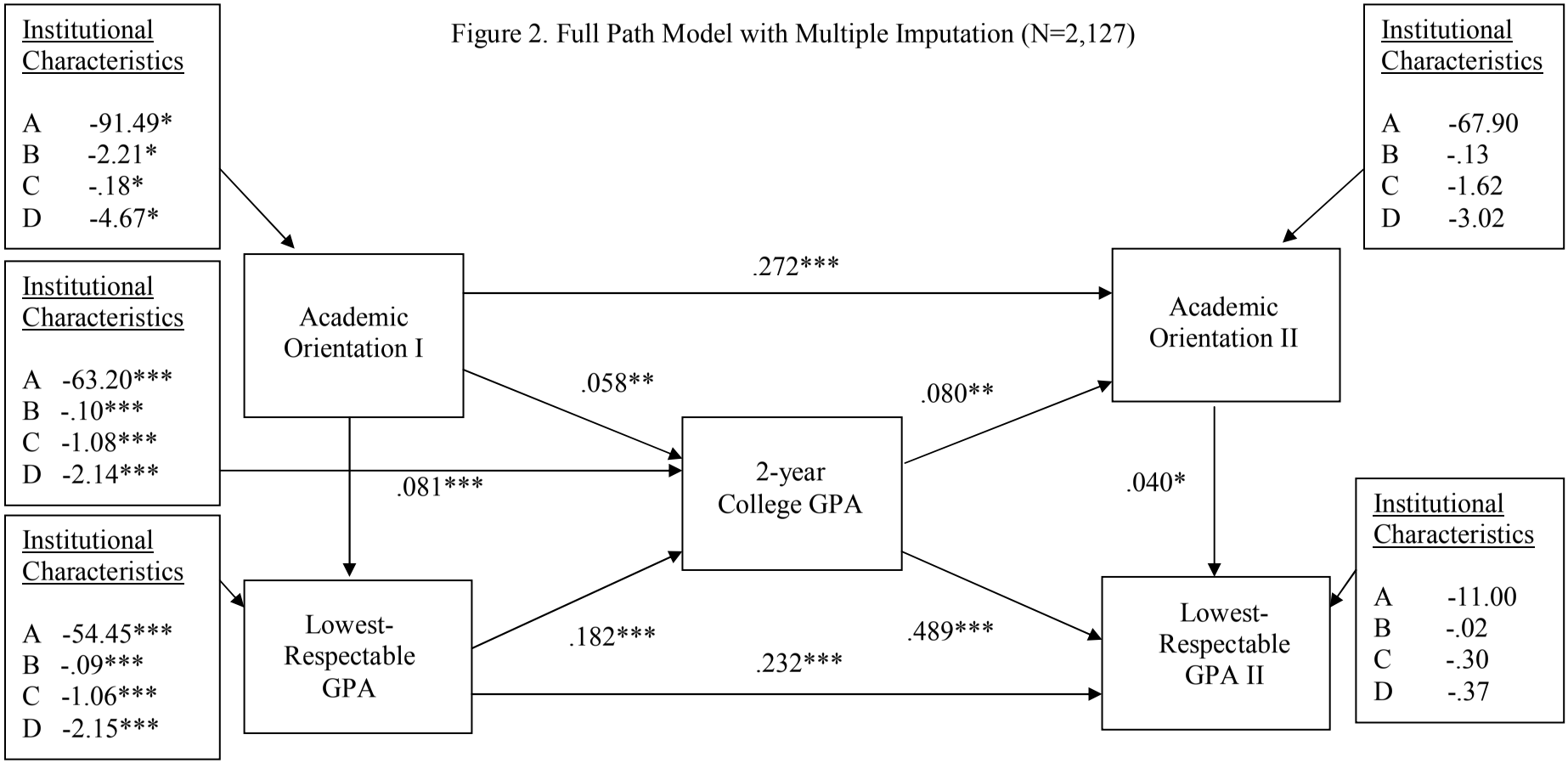


Figure 2. Full Path Model with Multiple Imputation (N=2,127)



Notes: + p<.10 *p<.05 **p<.01 ***p<.001. Rectangles indicate observed (non-latent) variables.
The following controls are included in predicting each of the endogenous variables, displayed in rectangular boxes: **high school characteristics** (high school size, high school average SAT or ACT score, public/private/religious high school type, and percent of high school that is black, Hispanic, or American Indian), **individual characteristics** (SAT score, high school GPA, high school rank, race, gender, parents' number of years of schooling, whether receiving financial aid, proposed major, whether major changed between freshman and junior year, and student's highest numbers of years of education desired), and **university characteristics** (average SAT of entering class, number of undergraduates enrolled, percent of undergraduate body that is black or Hispanic, and public/private university status). Control variables listed under "Institutional Characteristics" are as follows: A= Avg. SAT of freshman class; B=Dummy for private university; C=# of undergraduates at university; D=% of undergraduates who are black, Hispanic, or American Indian.