# Theories of intelligence and students' daily self-handicapping behaviors

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## A B S T R A C T

The current study sought to examine the relationship between students' theory of intelligence and daily self-handicapping behaviors. Ninth grade students completed a background survey with an eight-item measure assessing one's theory of intelligence (Dweck, 1999) and global measures of procrastination and self-handicapping. Participants then completed daily surveys for 2 weeks in which they reported how much homework they had, perceived school difficulty, time spent studying and in other domains, and how much effort they spent on their homework/studying. Results revealed that the strength of one's entity theory of intelligence was positively associated with self-handicapping and procrastination, replicating past findings. It was also found that entity theories of intelligence were associated with reduced responsiveness to daily school demands when compared to incremental theories. Not only do these results demonstrate an association between theory of intelligence and maladaptive school behaviors, but they show how these behaviors manifest on a daily basis.

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## 1. Introduction

Previous research has demonstrated that people can have one of two implicit theories of intelligence (Dweck, 1999). Those holding an entity theory believe that intelligence is a fixed, stable quality. However, those with an incremental theory believe that intelligence is malleable or changeable with effort. Past research has shown that entity theories of intelligence are related to negative academic behaviors, including self-handicapping and procrastination (e.g., Howell & Buro, 2009; Ommundsen, 2001; Rhodewalt, 1994; Shih, 2011), as well as negative feelings toward school (e.g., King, McInerney, & Watkins, 2012; Robins & Pals, 2002). These negative outcomes likely emerge because of entity theorists' attributions to failure and success. When entity theorists fail, they form a global, stable belief of lack ability. Even when they succeed, entity theorists are still concerned with possible future failure if their ability is not adequate for future success (Dweck, Hong, & Chiu, 1993; Hong, Chiu, Dweck, Lin, & Wan, 1999; Siegle, Da Via Rubenstein, Pollard, & Romey, 2010). Entity theorists' view of their intelligence is thus constantly in a state of vulnerability, particularly when confronted with challenge. Therefore, they tend to respond to challenges with helplessness and a lack of self-regulation, rather than an effort-driven approach (Burnette, O'Boyle, VanEpps, Pollack, & Finkel, 2013; Diener & Dweck, 1978; Robins & Pals, 2002). On the other hand, incremental theorists are more likely to form a strong belief in the importance of effort, whether in the face of failure or success (Dweck et al., 1993; Hong et al., 1999).

While these associations have been identified between individuals, they have not been explored within individual students to examine how they manifest themselves in terms of specific behaviors toward schoolwork and feelings about school as they occur in students' lives. The goal of the current study is therefore to examine different patterns of school behaviors and feelings about school on a daily basis according to students' individual theories of intelligence.

### 1.1. Theories of intelligence and school behaviors

Previous studies have found many associations between entity theories of intelligence and students' self-reports of self-handicapping and procrastination (e.g., Howell & Buro, 2009; Ommundsen, 2001; Rhodewalt, 1994; Shih, 2011). Self-handicapping is defined as the creation of obstacles to compensate for possible future poor performance, thus allowing the self-handicapper to externalize the cause of failure (Midgley et al., 2000; Ommundsen, 2001; Rhodewalt, 1994). Procrastination is the tendency to delay or avoid a task due to a lack of self-regulation (Howell & Buro, 2009; Tuckman, 1991). In the current study, we conceptualize procrastination as a method of self-handicapping: the self-handicapper uses procrastination as a reason for possible failure or poor performance.

Those with entity theories are more likely to self-handicap because doing so provides them with an explanation for possible poor performance that does not reflect on their intelligence, or lack of intelligence, allowing for an attribution to something other than one's intelligence. They are motivated to do so because they believe that failure to demonstrate intelligence indicates a lack of intelligence, which they perceive to be unchangeable (Ommundsen, 2001; Rhodewalt, 1994). However, because less effort is put into studying and schoolwork, those who

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self-handicap do not do as well and are not as successful in school (Tice & Baumeister, 1997). Even when entity theorists are successful though, they attribute this success to external factors, such as luck, and not to internal factors, such as intelligence (Robins & Pals, 2002).

In addition to self-handicapping as a means for having an excuse for potential failure, entity theorists may also put less effort into their schoolwork because they believe that trying hard could be perceived as demonstrating a lack of intelligence (Hong et al., 1999; Robins & Pals, 2002). Entity theorists therefore also avoid challenges whenever possible (Dweck & Leggett, 1988). The result of this is that students with entity theories tend to be less academically successful as a school year progresses, with decreasing grades over time (Blackwell, Trzesniewski, & Dweck, 2007; Haimovitz, Wormington, & Henderlong Corpus, 2011).

On the other hand, previous research has shown that incremental theories of intelligence are associated with more academically adaptive behaviors. For example, incremental theories have been negatively correlated with procrastination and self-handicapping (Howell & Buro, 2009; Ommundsen, 2001), and positively correlated with increased effort and persistence in response to theoretical, academic challenge response statements (e.g., "When I encounter difficulties completing academic assignments and want to give up, I always tell myself to keep persisting," Diener & Dweck, 1978; Robins & Pals, 2002; Shih, 2011, p. 135). Blackwell et al. (2007) found that junior high school students who held an incremental theory of intelligence were less likely to respond to failure with helpless attributions and more likely to respond with positive self-regulation strategies such as increased effort in studying. They found that students with an incremental theory of intelligence at the beginning of junior high school had higher math grades two years later than students with an entity theory of intelligence (Blackwell et al., 2007).

However, previous work is limited in that it assesses students' self-reports of their likelihood of self-handicapping, rather than their specific self-handicapping behaviors. Using self-report measures of likelihood of procrastination in general has previously been found to be less accurate in predicting students' academic performance than the use of behavioral measurements of procrastination (Moon & Illingworth, 2005; Steel, Brothen, & Wambach, 2001). This is because such self-report measures do not take into account fluctuations in academic deadlines and other pressures and resulting changes in procrastination behaviors. For example, in a study by Howell and Buro (2009), students filled out a procrastination survey measuring their likelihood to delay starting or completing a task. Similarly, Rhodewalt (1994) had students fill out a self-handicapping scale rating themselves on lack of effort and procrastination. By asking students explicitly whether or not they procrastinate or self-handicap, many may give socially desirable answers instead of the truth. Students may also simply be unaware of their behaviors and thus unable to answer these kinds of questions correctly.

In general, daily reports provide greater ecological validity than one-time measures of behavior and are also less likely to suffer from problems of retrospective bias (Hurlburt & Melancon, 1987). While previous research has explored associations between individuals' theories of intelligence and their perceptions of their procrastination or self-handicapping behaviors (Howell & Buro, 2009; Ommundsen, 2001; Rhodewalt, 1994; Shih, 2011), the goal of the current study is to explore what self-handicapping look like in terms of the actual behaviors students engage in on a daily basis. Therefore, in addition to asking general questions about whether or not they tend to procrastinate and self-handicap, we also explore students' daily behaviors such as time use and effort on school work, and whether these vary on a daily basis according to school challenges. Rather than asking retrospective questions targeted at the previous week, month, or school year, our measures specifically assess students' behaviors for that current day so as to eliminate any memory loss or confusion from long-term recall, or re-interpretation of behaviors (Hurlburt & Melancon, 1987).

### 1.2. Theories of intelligence and school feelings

In addition to academic behaviors, theories of intelligence have also been found to be associated with feelings toward school. For example, for junior high school students, entity theories of intelligence have been found to predict negative feelings toward school including anger, anxiety, shame, boredom, and hopelessness (King et al., 2012; Robins & Pals, 2002). Entity theorists are also more likely to have declining motivation as the school year progresses (Haimovitz et al., 2011). In contrast, incremental theorists are more likely to have positive emotions toward school, such as determination, enthusiasm, and inspiration (Robins & Pals, 2002; Shih, 2011).

Again, however, this work is limited in that it relies on students' global reports of school feelings. Given entity theorists' particular concern with challenge and failure, it is likely that feelings about school will fluctuate according to these experiences on a regular basis. For example, entity theorists may be less likely to report liking school on days in which they find schoolwork difficult since this difficulty might challenge their view of their own. However, entity theorists may be more likely to report liking school on days in which their schoolwork is not difficult, thus reaffirming their confidence in their intelligence.

### 1.3. The current study

The purpose of this study is to examine whether global associations between theories of intelligence and school behaviors are replicated when students' actual daily behaviors are examined. First, before exploring daily behaviors, we attempt to replicate associations between theories of intelligence and global measures of self-handicapping and procrastination. We hypothesize that an entity theory of intelligence will be positively correlated with self-handicapping and procrastination. Next, we will examine associations between theories of intelligence and averages of daily school experiences and feelings. We hypothesize that an entity theory of intelligence will be negatively associated with positive feelings toward school and feelings of being a good student, averaged across the days of the study. Finally, we will explore how self-handicapping manifests on a daily basis by examining whether students with incremental and entity theories of intelligence respond differently to daily changes in academic pressure, such as having a lot of homework or feeling like school is hard, in terms of their time use and effort on schoolwork. We hypothesize that entity theorists will spend less time and effort studying on days in which they report having more or challenging homework, while spending more time engaged in non-school related activities.

We also explore gender differences, given mixed findings from previous research in both mean levels of theories of intelligence and associations between theories of intelligence and behavior. For example, Howell and Buro (2009) found that undergraduate women scored lower than men on incremental beliefs but no differences were found for entity beliefs or procrastination. In contrast, Rhodewalt (1994) found that females believed effort had greater impact on ability than did males (supporting an incremental theory). Stipek and Gralinski (1996) found that, on average, third through sixth grade boys scored higher than girls on an entity scale, and Ommundsen (2001) found that ninth grade boys were more likely to have entity theory than girls. However, Ommundsen (2001) also found that girls reported more self-handicapping behavior than boys. Given these inconsistencies in previous work, no specific hypotheses regarding gender are proposed.

## 2. Method

### 2.1. Participants

All ninth grade students from a single high school in the Pacific Northwest were recruited for participation in a local IRB-approved