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The role of adaptability in promoting control and reducing failure dynamics: A mediation model☆

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ABSTRACT

The negative impacts of failure and failure dynamics are well established. This study explores adaptability and control as factors reducing failure dynamics. The present study centers on a mediation model in which adaptability is hypothesized to enhance control, and control is hypothesized to reduce failure dynamics (anxiety, performance avoidance, self-handicapping, disengagement). The study focused on longitudinal data of $N = 969$ Australian high school students. Mediation, using a bootstrapping approach, was tested with structural equation modeling. Findings showed that control significantly mediated the relationship between adaptability and failure dynamics: adaptability positively predicted control and control was associated with reduced failure dynamics. Furthermore, analyses led to the rejection of an alternative mediation model in which adaptability operates as the mediator between control and failure dynamics. These findings offer conceptual and empirical direction for researchers and practitioners seeking to enhance students' control and adaptability and reduce failure dynamics in their academic lives.

1. Introduction

Students differ in their motive to avoid failure and motive to approach success (Atkinson, 1957; Covington, 1992, 2000; Elliot & Thrash, 2004; Martin & Marsh, 2003; McClelland, 1965). Students have been characterized in terms of three typologies: success oriented, failure avoidant, and failure accepting (Covington & Omelich, 1991; Martin & Marsh, 2003; Martin, Marsh, & Debus, 2001). The present study investigates factors relevant to the latter two typologies (failure avoiders and failure accepters). These factors are referred to as failure dynamics (or, failure dynamic factors) and comprise a constellation of constructs including, *inter alia*, anxiety, performance avoidance, self-handicapping, and disengagement (Martin & Marsh, 2003; Martin et al., 2001). The study also investigates processes that may reduce failure dynamics in students' academic lives. Specifically, it examines the recently proposed construct of 'adaptability' (Martin, Nejad, Colmar, & Liem, 2012, 2013) and its hypothesized impact on failure dynamics via control.

2. Failure dynamics: components and consequences

According to Martin and Marsh (2003), failure avoidant students tend to be high in anxiety (Martin et al., 2001), motivated by an avoidance orientation, pursue performance avoidance goals (Elliot, 2005; Elliot & Thrash, 2004), and are uncertain about their ability to achieve success or avoid failure (Covington, 1992; Covington & Omelich, 1991). Sometimes in response to their fear of failure, failure avoiders may sabotage their chances of success (referred to as self-handicapping; e.g., leave schoolwork until the last minute, invest little or no effort, procrastinate) in order to have an excuse if they do not do so well. Students thereby protect their self-worth by deflecting the cause of inadequate performance away from a lack of ability and onto something less threatening to self-worth, such as a lack of effort (Covington, 1992). Martin and Marsh (2003) developed a cascading model of fear of failure in which self-handicapping may eventually lead to failure acceptance (the second failure-based typology) — sometimes referred to as learned helplessness or disengagement (Seligman, 1972). These students tend to be cognitively, behaviorally and emotionally disengaged from tasks and evince a helpless pattern of engagement and motivation (Abramson, Seligman, & Teasdale, 1978; see also Covington, 1992, 2000).

Across these two typologies, then, there is evidence of anxiety, performance avoidance, self-handicapping, and disengagement. In their own right, these failure dynamics are maladaptive and unpleasant

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cognitive, emotional and behavioral states. However, these factors are also associated with problematic school pathways and outcomes, including absenteeism, attrition, under-achievement, and post-school difficulties in further education and work (e.g., see Covington, 1992, 2000; Curtis & McMillan, 2008; Finn & Rock, 1997; Martin, 2014; Martin et al., 2001; Meece, Wigfield, & Eccles, 1990; Thompson, 1994; Thompson & Hepburn, 2003). There is a need to investigate factors and processes that may reduce the presence and/or degree of failure dynamics in students' academic lives. This study investigates adaptability and control as two such factors.

3. Adaptability and control: ways to reduce failure dynamics?

3.1. Adaptability

Recently, the concept of adaptability has been introduced and found to explain significant variance in academic and non-academic well-being, beyond the effects of factors such as buoyancy and self-regulation (Martin et al., 2013). The American Psychological Association (APA) defined adaptability as "the capacity to make appropriate responses to changed or changing situations; the ability to modify or adjust one's behavior in meeting different circumstances or different people" (VandenBos, 2007, p. 17). Recent research extended this definition to also include modification to cognition and emotion (not just behavior). Thus, adaptability was defined as appropriate cognitive, behavioral and/or emotional adjustment in the face of uncertainty and novelty (Martin, 2012; Martin et al., 2012, 2013). Furthermore, this research detailed how adaptability is distinct from cognate factors such as coping (Frydenberg, 2008; Lazarus & Folkman, 1984), resilience (Howard & Johnson, 2000; Masten, 2001), buoyancy (Martin & Marsh, 2009; Putwain, Connors, Symes, & Douglas-Osborn, 2012), and self-regulation (Zimmerman, 2002).

Uncertainty and novelty disrupt routines and create new circumstances to which individuals must habituate (Pinquart & Silbereisen, 2004; Tomasik & Silbereisen, 2009; Tomasik, Silbereisen, & Heckhausen, 2010). Furthermore, the chances of failure and failure dynamics are increased when the individual attempts new tasks, is faced with uncertainty, or experiences significant transitions (Elliott & Lemert, 2006; Heckhausen & Schulz, 1995). Hence, adaptability may be particularly appropriate in helping individuals reduce failure experiences and failure dynamics when in these situations and circumstances.

The first study into adaptability developed and validated a measurement instrument (the Adaptability Scale) that assessed high school students' capacity to appropriately adjust and modify psycho-behavioral functions in response to uncertain and novel circumstances, conditions and situations (Martin et al., 2012). Building on this measurement work, a subsequent longitudinal study (Martin et al., 2013) investigated dispositional predictors (personality, implicit theories) of adaptability, and the extent to which adaptability predicted academic (motivation, engagement) and personal well-being (meaning and purpose, self-esteem, life satisfaction, mental health) outcomes. Findings demonstrated that personality and implicit theories significantly predicted adaptability. Findings also demonstrated that adaptability predicted academic and personal well-being outcomes. This longitudinal study therefore identified unique variance attributable to adaptability when explaining wellbeing outcomes. However, that study also emphasized the importance of better understanding the mechanisms that might be involved in the positive effects of adaptability. Herein we propose that it may be via control that adaptability exerts its positive effects.

3.2. Control

The development of the adaptability concept was influenced by the life span theory of control. This theory recognizes the salience of success and failure in individuals' lives and emphasizes the importance of primary and secondary controls in managing and navigating these successes and failures (Heckhausen & Schulz, 1995; Heckhausen, Wrosch, & Schulz, 2010; Wrosch, Schulz, & Heckhausen, 2002). Primary control is aimed at the external world and is relevant to efforts to change one's context so it fits the needs and desires of the individual. Secondary control is directed at internal processes, such as goal setting and adjusting cognition and behavior (Heckhausen & Schulz, 1995; Heckhausen et al., 2010; Wrosch et al., 2002; Rothbaum, Weisz, & Snyder, 1982 for aligned conceptualizing).

The concept of control is founded on the premise that humans are fundamentally motivated to control their environment and direct resources to courses of action that enhance and maintain their capacity for control (Schindler & Tomasik, 2010). According to Schulz and Heckhausen (1996), failure dynamics and failure experiences undermine motivation and require the exercise of control strategies to effectively reduce these dynamics and experiences and/or their impacts. Control strategies include goal striving, self-regulation, persistence, and agency (Bandura, 1997; Connell, 1985; Martin, 2007, 2009; Skinner, 1996; Thompson, 1994). In various ways these reduce the likelihood of poor performance, promote efficacy, and thus generally reduce failure dynamics that may take the forms of anxiety, fear of failure, self-handicapping and disengagement (Covington, 1992; Martin & Marsh, 2003; Martin et al., 2001; Thompson, 1994). According to Schulz and Heckhausen (1996), strategies that maximize control are key to optimizing development through the life course. In the academic domain, therefore, adaptability positively impacting control and leading to a reduction in failure dynamics may be similarly considered to optimize the academic life course. Indeed, testing this link between adaptability, control, and failure dynamics is the central purpose of the present study.

4. Accounting for covariates and prior variance

It is important to understand control, adaptability and failure dynamics independently of covariates with which they may share variance. Thus, socio-demographic and achievement covariates were included so as to partial out their influence. Socio-demographic variables were language background, age, gender, and socio-economic status (SES). Achievement was based on literacy and numeracy test performance. Prior research has shown adaptability (Martin et al., 2012, 2013) and control (Martin, 2007, 2009) to share significant variance with these covariates and so they are important to partial out of models investigating unique effects attributable to substantive factors and processes.

The study also accounts for prior variance in dependent measures and control via auto-regressive paths. These paths link variables at Time 1 with corresponding variables at Time 2 (e.g., the path between Time 1 anxiety and Time 2 anxiety). Having accounted for this variance, factors predicting Time 2 outcomes (e.g., Time 2 anxiety) can be more appropriately interpreted as 'uniquely' predictive constructs (MacCallum & Austin, 2000; Martin, 2011). Essentially, then, accounting for prior variance in our design provides an opportunity to examine predictive paths on the dependent measures after controlling for Time 1 variance in these dependent measures to better establish the unique effects of adaptability and control.

5. Aims of the present study

Following life span control theory, adaptability has been identified as a strategy aimed at enhancing and maintaining control (Martin et al., 2012, 2013). Thus, control may be an important mechanism in adaptability's proposed effects, including its relationship with failure dynamics. However, this mechanism has not been tested to date. Accordingly, the present study centers on a mediation model in which adaptability is hypothesized to enhance control, and control is hypothesized to reduce failure dynamics (anxiety, performance avoidance, self-handicapping, disengagement). Fig. 1 demonstrates these hypothesized relationships.