

School-work dynamics: A within-person examination of how school stress appraisals can impact organizational citizenship behaviour at work

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ABSTRACT

School-work dynamics: A within-person examination of how school stress appraisals can impact organizational citizenship behaviour at work

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This dissertation reports the results of a within-person study concerning how various types of school stress appraisals (i.e., hindrance, threat and challenge) can impact organizational citizenship behaviour (OCB) at work for student-workers. Indirect effects via positive and negative affect were also examined. Theoretical foundations for this research included the transactional model of stress, the work-home resources model, and affective theories of OCB. Data were gathered every week over a period of four weeks from employed students who were pursuing an undergraduate degree in commerce. Findings provided limited support for the hypotheses that school stress appraisals can impact workplace OCB. The total effects of school stress appraisals on OCB were generally non-significant. However, and consistent with the hypotheses, it was found that appraising school as a hindrance had a negative indirect effect on OCB via positive affect, but this effect became non-significant after including work hindrance appraisal in the model. Furthermore, it was found that appraising school as a threat had a negative indirect effect on OCB via positive affect, but this effect also became non-significant when including work threat appraisal in the model. It was also found that school challenge appraisal had a positive indirect effect on OCB via positive affect, and this effect remained significant after controlling for work challenge appraisal. Supplementary analyses revealed that school stress appraisals are not strong predictors of task performance and CWB at work. One implication of this study is that when students adopt positive framing around school as a

challenge, this may have positive downstream effects their OCB and task performance at work via positive affect.

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INTRODUCTION

School and work are two important and formative life domains, and there are many students who work while attending post-secondary school. In Canada, the percentage of university-aged students (i.e., 20 to 24) who work has increased from 26% in 1977 to 47% in 2010 (Statistics Canada, 2010), and a 2020 mid-year report by the Canadian University Survey Consortium revealed that 56% of Canadian university students are also employed, working about 17 hours per week (Canadian University Survey Consortium, 2020). In the U.S, it has been estimated that, in 2014, 41% of full-time college students, as well as 80% of part-time college students, also worked (Kena, Hussar, McFarland, de Brey, Musu-Gillette, Wang, Rathbun, Wilkinson-Flicker, Diliberti, Barmer, Bullock Mann, Dunlop Velez, 2016). It has also been shown that university can be a particularly stressful time for students (Cooke, Bewick, Barkham, Bradley, & Audin, 2006). Accordingly, it seems important to understand how stressful conditions in school (namely post-secondary school) can impact work behaviours for student-workers, and this could have implications for several stakeholder groups. First, it could be valuable to student-workers, who may want to know how their schooling can impact their work outcomes. Second, it could be valuable for managers and instructors of student-workers, who seek information about how to better manage those who must simultaneously juggle school and work. As asserted by Calderwood and Gabriel (2017), managers and instructors currently have scant empirical information on how to manage student-workers. So, taken together, given the stressful nature of post-secondary school, the fact that many post-secondary students also work, and the limited information about how school impacts work, I aim to respond to the following question: **how do different stressful conditions in school for post-secondary students (i.e., different stress appraisals of school as a hindrance, threat and challenge for post-secondary students) impact the workplace outcome of organizational citizenship behaviour?** I examine this

question directly at the within-person level, and I also examine the within-person indirect relations between stress appraisals and OCB via affect. I also examine the impact of stressful conditions in school on task performance at work and counterproductive work behaviours, both directly and indirectly via affect, in supplementary analyses.

This research is predominantly about organizational citizenship behaviour (OCB). OCB is adaptive behaviour at work that supports the good functioning of the organization, but is considered not directly related to what someone was hired to do (i.e., not part of the technical core of the job; Borman & Motowidlo, 1993 as cited in Organ, 1997). OCB has been found to contribute to organizational effectiveness (Podsakoff & MacKenzie, 1997; Podsakoff, Whiting, Podsakoff, & Blume, 2009) and has been argued to hold promise for the long-term success of organizations (Van Dyne, Graham, & Dienesch, 1994). As such, studying what influences this behaviour should be important to organizational stakeholders.

Past research on the drivers of OCB has mainly focused on work-related drivers (e.g., work stress appraisals, work stressors, job satisfaction and leadership behaviours; see, for example, Rodell & Judge, 2009, and Illies, Scott & Judge, 2006) and person-related drivers (e.g., conscientiousness and agreeableness; see Podsakoff, MacKenzie, Paine & Bachrach, 2000, for a meta-analytic review). Less is known about how variables outside of work, such as the stressful conditions of being a student, can influence OCB at work. Accordingly, the first important contribution of this paper is that I will be investigating antecedents of OCB beyond the typically studied work-related and person-related variables, by examining factors from an outside contextual domain – that is, school. The notion that non-work factors can impact OCB has been supported in past research. For example, it has been found that when the family role conflicted with work, this adversely impacted OCB at work (Bragger, Rodriguez-Srednicki, Kutcher,

Indovino, & Rosner, 2005). This existing research, though sparse, provides a springboard to study how additional domains, other than work, may impact OCB at work.

A second important contribution of this research is that it extends our knowledge about how stress appraisals in the school domain can impact the work domain, which has not been widely studied (Calderwood & Gabriel, 2017). More specifically, I extend research by Calderwood and Gabriel (2017) who incorporated a portion of the stress appraisal paradigm (i.e., the hindrance-threat-challenge paradigm) by examining, among other things, how school hindrances impact work outcomes, including task performance, emotional exhaustion at work and work engagement. I extend their research by looking not only at school hindrance appraisals, but also at school threat and challenge appraisals, in addition to considering a different work outcome, namely workplace OCB. Given the aforesaid importance of OCB for organizations, OCB is arguably a beneficial variable to study. In addition, I investigate, in the supplementary analyses, how all three types of school stress appraisals impact task performance and counterproductive work behaviour (CWB) at work, which alongside OCB, make up the three dimensions of job performance (Viswesvaran & Ones, 2000).

My research also investigates the distinctiveness and dynamism of school stress appraisals. To my knowledge, no other studies have broached these topics. Investigating the distinctiveness of school stress appraisals is integral to this study, because I am proposing a three-factor model, whereby school hindrance, threat, and challenge appraisals are distinct and can each individually impact work outcomes in different ways. I also investigate the dynamism of school stress appraisals, which has not been done before. This was necessary given that this is a within-person study. Examining the dynamism of school stress appraisals opens the door to possibly more within-person research in this area. Thus, the third contribution of this research is that it provides an increased understanding of the constructs of school stress appraisals.

A fourth contribution of this study is that it involves taking a within-person approach to studying OCB. As pointed out by Bolino, Harvey, Bachrach, (2012), within-person research on OCB is scarce and the time seems right to examine how OCB changes within persons, especially since there is a growing body of research showing that OCB does indeed fluctuate within-individuals (e.g., Binnewies, Sonnentag, & Mojza, 2010; Dalal, Lam, Weiss, Welch & Hulin, 2009; Ilies, Scott & Judge, 2006; Methot, Lepak, Shipp, & Boswell, 2017). By taking a within-person approach, my research will provide insights about how fluctuations in different school stress appraisals influence within-person variation in OCB at work, an issue which does not appear to have been well-studied. In addition, I add to existing research about how changes in affect (both positive and negative) influence fluctuations in OCB. Much existing research has suggested that increases in positive affect are associated with increases in OCB (e.g., Dalal et al., 2009, Ilies et al., 2006), but the impact of negative affect on OCB seems less clear given some contradictory findings, as will be discussed. So, another contribution of this paper involves extending our knowledge about the relation between negative affect and OCB, where the evidence seems unclear. Overall, looking at school stress appraisals, as well as both positive and negative affect, my research can provide information about potential causes of variation in OCB, which managers can use to foster more OCB in the workplace.

A fifth and final contribution of this paper is that I extend knowledge about how work stress appraisals impact a variety of work outcomes. Although not its main goal, my research adds to knowledge about relations of work stress appraisals with work outcomes, including OCB, task performance and counterproductive work behaviour (CWB). I extend the work of Rodell and Judge (2009), who examined how work hindrances and challenges impact workplace OCB and CWB directly and via discrete emotional states. My research adds to this by incorporating not only work hindrance and challenge appraisals but also work threat appraisal. Furthermore,

Rodell and Judge (2009) only looked at the work outcomes of OCB and CWB, whereas I add task performance. Finally, Rodell and Judge (2009) considered discrete emotions as intervening mechanisms, such as attentiveness and anxiety, whereas I consider the broader constructs of positive and negative affect, as will be discussed later.

In what follows, the foundational ideas of this research are discussed, including the concepts of OCB, stress appraisals, inter-role theory, and affect. Following that, the literature is reviewed to examine how stress appraisals of school might impact OCB, through the mechanisms of positive and negative affect.

CORE CONSTRUCTS

Organizational Citizenship Behaviour (OCB)

OCB is a type of adaptive behaviour at work that is unrelated to the technical core of the job, but nevertheless supports the good functioning of the organization (Borman and Motowidlo, 1993, as cited in Organ, 1997). OCB has been described as discretionary, but in his 1997 monograph Organ questions this classification. And, it seems rightly so, given the fact that many employees actually consider OCB to be a part of their jobs (Morrison, 1994) and evidence showing that OCBs are being evaluated and rewarded by managers (Podsakoff et al., 2009). This speaks to OCB not being so discretionary. That said, OCBs are still considered as more discretionary than task performance, as OCB can be more easily and safely altered (Organ, 1990 as cited in Lee & Allen, 2002).

OCB includes five dimensions of behaviour: 1. Altruism, which involves helping co-workers with their work-related tasks, 2. Courtesy, which involves engaging in behaviours to prevent work-related problems with others (e.g., considering the impact on one's actions on others), 3. Civic virtue, which involves engaging in behaviours that show concern for the organization itself (e.g., providing feedback to improve the organization or attending non-mandatory company

events), 4. Conscientiousness, which involves going above and beyond what your employer would normally expect (e.g., making it to work even in a snowstorm or never taking a couple of minutes extra break), and 5. Sportsmanship, which involves tolerating less than ideal conditions and not complaining about it (Podsakoff, MacKenzie, Moorman, & Fetter, 1990). The dimensions of altruism and courtesy can be categorized as OCB-I, since they are directed towards individuals within the organization, whereas the dimensions of civic virtue, sportsmanship, and conscientiousness can be categorized as OCB-O, since they are directed towards the organization itself (Organ, 1997).

Despite the conceptual notion that there are five distinct dimensions of OCB, empirical evidence suggests that all dimensions fit into one multi-faceted construct. For example, it has been found that most of the dimensions of OCB, with the exception of sportsmanship, are highly correlated to each other, with correlations close to or above .70 (LePine, Erez, & Johnson, 2002). In addition, it has been found that the dimensions of OCB should be amalgamated into one omnibus construct that is related to but distinct from task performance (Hoffman, Blair, Meriac, & Woehr, 2007). Given these findings, all of the five dimensions of OCB will be amalgamated into a single construct in the present research.

OCB is important to organizations because it contributes to organizational effectiveness. For example, helping your co-workers can enhance their task performance and subsequently improve unit performance. Similarly, providing ideas to improve your unit can streamline core tasks and enhance unit productivity and efficiency. A meta-analysis by Podsakoff et al. (2009) supports the latter adaptive effects of engaging in OCB within organizations. Case in point, Podsakoff and colleagues found that unit-level OCB was positively related to things like unit performance, unit productivity, and unit efficiency, and negatively related to unit costs. Given

these benefits, it is small wonder that there has been such a hefty amount of research on the precursors of OCB (see Podsakoff et al., 2000, for a review).

There are numerous theories that have been put forward to explain why OCB may occur. Some are more work-related, whereas others are more person-related. Starting with the more work-related theories, some scholars have suggested that OCB in the workplace is a function of the prosocial behaviours of leadership (Smith, Organ, & Near, 1983). Support for this notion stems from social psychology, which argues that the actions of role models (e.g., the leaders) will influence subordinates to act in the same way. So, if leaders care for their subordinates, then, in return, their employees should be compelled to care about the company and the people within it, which should lead to more OCB. The norm of reciprocity can be used to explain why the prosocial behaviours of leadership can amplify OCB in the workplace. That is to say, subordinates may feel compelled to reciprocate, in kind, if they are treated nicely by their supervisors, therefore more likely to engage in favorable acts to help others and improve the company (see Rhoades and Eisenberg, 2002). Employees may choose OCB as a means of reciprocation for supportive leadership behaviour, rather than increasing task performance, because engaging in OCB may be less constrained by skills and abilities, making OCB a more efficient option to express gratitude (Smith et al., 1983). The notion that leadership behaviours can influence OCB is supported by the evidence, as meta-analytic findings have revealed that supportive leadership is positively related to all five dimensions of OCB (Podsakoff et al., 2000).

Beyond leadership, other work-related factors that have been theorized and found to influence OCB, include perceived organizational support (POS; Singh & Singh, 2010; Jain, Giga, and Cooper, 2013). In addition, perceived fairness/justice has also been employed to explain OCB (Lee & Allen, 2002; Tziner & Sharoni, 2014). The idea here is that if people feel they are being fairly treated by the organization, then they are more likely to engage in OCB to try to

maintain the fair relationship, whereas those who feel unfairly treated may be less likely to engage in OCB (Organ, 1990 as cited Lee & Allen, 2002). This fairness theory is also supported by data, as meta-analytic findings have revealed that perceived fairness is positively related to altruism, as well as generalized compliance, which is similar to conscientiousness (Podsakoff et al. 2000). Another organization-related influence on OCB is argued to be interdependence of activities, especially in groups where there are more frequent instances of interaction (Smith et al. 1983). The idea here is that collegial tasks make people develop a sense of social responsibility to their dependent partners, and this should engender cordial and prosocial behaviours, namely in the form of helping and being sensitive to others' needs (Smith et al., 1983), which represent the helping and courteousness dimensions of OCB-I. Related to this, another organizational precursor of OCB is argued to be norms within a team. That is to say, if it is normative to engage in OCB in a team, then OCB should flourish; if not, then it will likely be scarcer (Ehrhart & Naumann, 2004).

In addition, role stressors in the workplace have also been argued to influence OCB. In their meta-analytic review on this issue, Eatough, Miloslavica, Chang and Johnson (2011) explained that role stressors, such as role ambiguity, role conflict and role overload, can shape workplace OCB. The idea here is that stressors inspire negative emotions, which elicit avoidance behaviours and essentially "turn off" OCB. Eatough et al. (2011) also argued that job satisfaction may be one mechanism through which role stressors can affect OCB. The idea here is that these stressors can hinder the attainment of desired work outcomes, which should lower job satisfaction, and subsequently OCB. However, Eatough and colleagues specified that role overload should exhibit a weaker negative influence on OCB because some people may be challenged by overload, which may help to offset some of role overload's negative effects on OCB. In a somewhat similar vein to this argument, Rodell and Judge (2009) argued that role

overload may gin up positive affect (instead of reducing negative affect), thereby increasing OCB. Based on their meta-analytic results, Eatough et al., (2011) found that role ambiguity, role conflict and role overload each had negative relations with OCB, via job satisfaction. Other research has advanced other mechanisms to explain the relation between role stressors and OCB, besides negative affect and job satisfaction. For example, Pooja, De Clercq and Belausteguigoitia (2016) argued that role stressors, such as work overload and interpersonal conflict, negatively influence OCB through organizational commitment (namely affective commitment) because stressors make employees less (affectively) committed to their organization and low affective commitment subsequently adversely affects OCB. In fact, they found that these two role stressors negatively affected OCB via affective commitment. Additionally, Chang, Rosen and Levy (2009) argued that the stressor of perceived organizational politics should decrease OCB. The reasoning behind this is that politics increases psychological strain and lowers morale, which should attenuate incidences of OCB. In fact, in their meta-analytic review, Chang and colleagues found that organizational politics was negatively related to job performance (which included measures of task performance and OCB) via psychological strain and morale. Lastly, another predictor of OCB is said to be job stress, which is argued to be negatively related to OCB (De Clercq & Belausteguigoitia, 2020). The idea here is that since stress is resource depleting, and people have a drive to keep their resources (by conservation of resources theory; Hobfoll, 1989), people are less likely to exhaust their already stress-depleted resources by engaging in OCB when they are stressed, especially since OCB exceed the formal job description. In fact, De Clercq and Belausteguigoitia (2020) found that job stress was negatively related to OCB. So, overall, there are manifold organizational factors that can influence OCB, including leaders who behave in prosocial ways and who treat employees fairly, higher interdependence within a team, stronger norms for OCB within a team, role stressors, and job stress.

Turning to theories about person-related drivers of OCB, some scholars have proposed that personality traits, such as conscientiousness and agreeableness, are important antecedents of OCB. Studies have supported these theories, finding that both personality characteristics are positively related to the altruism and conscientiousness dimensions of OCB (see meta-analysis by Podsakoff et al., 2000). Positive affect should also influence OCB. One well-known theory that supports this viewpoint is the “feel-good-do-good” hypothesis, which suggests that experiencing a positive state should influence people to help others (Lyubomirsky, King, & Diener, 2005), which is a key dimension of OCB. Also, the broaden and build theory (Fredrickson, 2004) suggests that positive emotions should broaden a person’s scope of thinking. Drawing from this, positive affect could expand a person’s scope of job performance making activities associated with OCB more likely, such as proposing creative solutions to overcome organizational problems (civic virtue dimension of OCB) or helping co-workers in need. The evidence supports the notion that positive affect can engender OCB. For example, Ilies et al. (2006) found that daily positive affect was positively related to OCB at work over a period of 15 days. More will be discussed later about the relation between affect and OCB. Another personal characteristic that can impact OCB is vigor. In fact, Little, Nelson, Wallace, and Johnson, (2011) found that vigor was positively related to OCB at work. The rationality behind this finding, as per the researchers, is that vigor should amplify engagement with the environment, which should increase OCB. A final person-related factor that has been advanced to explain workplace OCB is emotional exhaustion at work. As noted earlier, COR would suggest that individuals are less likely to allocate already depleted resources to OCB. Further, employees who feel emotionally exhausted because of work may feel unfairly treated in the social exchange relationship with their organization, which will decrease organizational (affective) commitment and eventually OCB (Cropanzano, Rupp & Byrne, 2003). In fact, Cropanzano et al., (2003) found evidence that emotional exhaustion had a

negative impact on OCB via affective commitment. Overall, there are several important personal characteristics that can lead employees to engage in OCB, including personality traits (agreeableness and conscientiousness), positive affect, vigor and emotional exhaustion.

Another salient aspect of OCB to examine is its dynamism. Some research has assumed that OCB should remain relatively stable over time within-people. This is evidenced in research that links different personality characteristics with OCB (as noted previously). However, some researchers (e.g., Ilies et al., 2006; Dalal et al., 2009) have found that OCB can actually fluctuate within-people over time, namely in relation to one's positive affect on the day. Researchers have also suggested that OCB can change within-people depending on how a person appraises a situation (Ilies et al., 2006). The latter point is relevant to this paper, because I am examining how OCB can change within-people depending on how people appraise stressful situations related to school. The idea that OCB should exhibit dynamism is in line with Cognitive-Affective Personality System (CAPS) theory, which suggests that behaviours are not uniform in all situations, and can change depending on how someone cognitively appraises and affectively responds to their environment (Mischel & Shoda, 1995). So, for example a person might be more inclined to help a colleague that they like, rather than one that they do not like (hence OCB can change depending on the situation). Other scholars have also supported the potentially dynamic nature of OCB as noted earlier. For example, Beal, Weis, Barros and McDermid (2005) suggested that change in performance is substantial within-people. Also, Ilies et al. (2006) found that changes in job satisfaction and positive affect were positively related to changes in OCB over a period of 15 days. Also, Binnewies et al. (2010) did a within-person study and found that changes in the state of being recovered at the beginning of the week were positively related to changes in OCB during the week. Furthermore, it was found that changes in positive affect were positively related to changes in OCB at work over 15 working days (Dalal et al., 2009). Taken

together, these studies support the notion that there is meaningful variance within-persons in OCB over time and that affect is one driver of this variation. This dynamic perspective of OCB is adopted in the present research, which aims to investigate how OCB changes within-individuals over time based on their school stress appraisals. Though past research seems to have typically adopted a daily time frame to investigate the dynamic precursors of OCB, I decided to take a weekly approach for a couple of reasons. Firstly, students likely do not work at their jobs every day and hence daily reports of OCB may not be tenable. Secondly, school demands, especially at the post-secondary level, tend to cycle weekly, with students learning new chapters and topics on a weekly basis, and so I believed that students' stress appraisals of school would likely change from week-to-week, more so than day-to-day.

Stress Appraisal

An appraisal is an evaluation of how a stimulus can impact a person's well-being (Lazarus & Folkman, 1987). There are three types of appraisals: irrelevant, beneficial and stressful (Lazarus & Folkman, 1987). Appraising a stimulus as irrelevant means that the person does not think it will affect their well-being, because there is nothing to be won or lost (i.e., no stakes; Lazarus & Folkman, 1987). Appraising a stimulus as beneficial means that the person thinks it will positively affect their well-being, and, so there is something to be won. For example, going to a friend's party would likely be considered a beneficial stimulus for most. Appraising a stimulus as stressful (i.e., a stress appraisal) means that the person thinks it poses some risk of harm, such as to one's well-being, and so there is a risk of loss (Lazarus & Folkman, 1987). Lazarus and Folkman (1987) described different kinds of stress appraisals, including threat and challenge, and research has since expanded the stress appraisal framework by adding hindrance appraisal (see Cavanaugh et al., 2000; Tuckey, Searle, Boyd, Winefield, & Winefield, 2015). Each of these stress appraisals will now be examined individually.

Hindrance stress appraisals reflect the extent to which a stimulus is perceived as a demanding situation that impedes progress towards valued goals (Cavanaugh et al., 2000). Stimuli that some people may consider hindering include having trouble understanding course material, or having to go through many hurdles to get work done, such as repeatedly having to push team members to get their work in on time (LePine, LePine & Jackson 2004). Threat stress appraisals reflect the extent to which a stimulus is perceived as a demanding situation that can induce harm to well-being, but unlike hindrances, there is no obstruction involved (Lazarus & Folkman, 1987; Tuckey et al., 2015). Stimuli that some people may find threatening include an exam that a person is afraid of failing or course material that may be too much to handle. Challenge stress appraisals reflect the extent to which a stimulus is perceived as a demanding situation that can offer advantages, such as learning, personal growth, accrual of desired gains, accomplishment and/or mastery of something (Cavanaugh, Boswell, Roehling & Boudreau, 2000; Lazarus and Folkman, 1987; LePine, Podsakoff, & LePine, 2005). So, there is a positive dimension to challenges in that they offer potential benefits. This likely explains why they are generally viewed as worth the temporary discomfort in order to reap the associated rewards, and have been argued to lead to positive outcomes, such as positive feelings, job satisfaction, as well as reduced job search and decreased turnover (Cavanaugh et al., 2000). Stimuli that some people may view as a challenge include a final exam that allows a person to meet their goal of graduating or an assignment for extra credit.

There are some key features of stress appraisals of which to take stock. The first, is that different stress appraisals, particularly in the work domain, have been shown to be empirically distinct from one another (Tuckey et al. 2015). Consequently, because stress appraisals (at least in the work domain) are distinct, it is possible for a person to appraise a stimulus as challenging, hindering and threatening to various degrees at the same time. For example, office politics may

be appraised as highly hindering by a person, if these politics are preventing said person from getting a desired raise. At the same time, office politics can also be appraised as highly threatening by the same person if they fear that the politics will devolve into personal attacks, which can affect the person's self-worth. A second thing to note about stress appraisals is that, based on the transactional model of stress, stress appraisals are in the eye of the beholder (Lazarus & Folkman, 1987). That is to say, not everyone will necessarily see a given stimulus as stressful (e.g., one may see it as stressful and another not), and further, two people who see a stimulus as stressful may appraise it in different ways (e.g., one may see it as more threatening and another as more challenging). As the theory's name suggests, a stress appraisal of a given stimulus is based on the "transaction" between the environment and the person; thus, a stimulus does not just objectively exist as a hindrance, threat, or challenge, without a person giving it meaning. I adopted this perspective in the present research, and aimed to be consistent with this perspective when I operationalized school stress appraisals. I did not want to assume a priori that certain stimuli associated with school were, for example, hindering, threatening or challenging when measuring these constructs. It is worth noting that some prior research on stress appraisals has done the latter, and measured whether a certain domain was hindering, threatening or challenging by including items that were a priori assumed to be hindering, threatening or challenging. For example, foundational research on stress appraisals at work by Cavanaugh et al. (2000) defined and measured specific stimuli as a priori being challenging and hindering, (e.g., job overload was defined and measured as being challenging, whereas having to go through red tape was treated as being hindering). I agree with other scholars who have questioned this measurement approach (e.g., Mazzola & Disselhorst, 2019; Webster, Beehr & Love 2011) and I tried my best to incorporate measures of school hindrance, threat and challenge appraisals that align with the spirit of the transactional model of stress. Thus, as described in the method section,

I asked participants whether they found school hindering, threatening or challenging using the theoretical definitions of these constructs, while avoiding any a priori assumptions that certain stimuli related to school were hindering, threatening or challenging.

A third factor to note about stress appraisals is that they can change within a person over time; that is to say, they are dynamic and unfolding processes (Jerusalem & Schwarzer, 1992). In fact, in the work domain, it has been found that hindrance, threat and challenge appraisals display significant within-person variance (see Rodell & Judge, 2009; Tuckey et al., 2015). In the school domain, Jerusalem and Schwarzer (1992) argue that a student might consider school highly threatening one day, and less threatening the next. This can happen for many reasons, according to them. For example, the requirements of school may lessen over time, so the appraisal of school as a threat may decrease accordingly. Alternatively, a student's ability may improve, making school less threatening as time passes. Empirical research seems to support the possible fluid nature of stress appraisals for students. For example, Folkman and Lazarus (1985) found that students who experienced high challenge emotions (e.g., eager, confident, hopeful) and high threat emotions (e.g., worried, fearful, anxious) prior to an exam, later experienced these emotions less intensely as time since the exam passed. Also, Smith and Ellsworth (1987) did a similar study, finding that students who felt things such as feeling hopeful, challenged and afraid before an exam, which are feelings that may be associated with challenge and threat appraisals, felt less so after receiving their grades. Given this information, it seems reasonable to suggest that school stress appraisals will fluctuate within students over the course of the semester, and it seems worthwhile to examine the consequences of these fluctuations on OCB. That said, in this study, I will actually test the dynamism of the constructs of school stress appraisals themselves, rather than make conclusions regarding the fluidity of school stress appraisals based on the fluctuation of certain emotions associated with these stress appraisals. To my knowledge the

distinctiveness of the constructs of school stress appraisals (as a hindrance, threat and challenge) has yet to be investigated empirically.

Taken together, the literature seems to support three main ideas about stress appraisals. The first is that hindrance, threat and challenge stress appraisals are distinct constructs. The second is that stress appraisals are unique to the person, meaning that what is stressful to one person may not be to another, and that people may appraise stressful situations differently (i.e., one person may see things as more challenging and another as more threatening). The latter is a foundational idea in the stress literature associated with the transactional model of stress. The last idea about stress appraisals is that they should change within a person over time (see Rodell & Judge, 2009; Tuckey et al., 2015), giving credence to the idea of studying fluctuations in school stress appraisals within-person.

Inter-role Dynamics

One of the underlying assumptions of this research is that, when an individual occupies multiple roles, these roles can impact one another. Drawing from the literature on interactions between work and family roles, it is clear that different roles can either conflict with each other (e.g., work-family conflict; Greenhaus & Beutell, 1985) or enrich each other (e.g., work-family enrichment; Greenhaus & Powell, 2006).

Drawing from Greenhaus and Beutell's (1985) foundational work-family conflict theory, inter-role conflict occurs when participation in one role makes it more difficult to participate in another role. There are three forms of inter-role conflict per this theory. The first type is time-based inter-role conflict, which happens when the demands in one role reduce available time for another role, thereby impairing performance in the other role. The second type is strain-based inter-role conflict, which arises when the demands in one role cause strain (e.g., anxiety, fatigue), which makes it more difficult to perform in another role. The third type of inter-role conflict is

behaviour-based, which occurs when the behaviour required in one role persists in another role, but is unsuited for it, making it difficult to perform well in the other role.

Another foundational model that can be used to explain inter-role conflict is spillover theory, which suggests that experiences in one domain, such as someone's mood, emotions, attitude, or behaviour can "spillover" and create similar experiences in another domain (Edwards & Rothbard, 2000). So, if one role is imbuing someone with negative affect or a poor attitude, then this can spillover to create the same negative affect or poor attitude in another domain, which can conceivably make these two domains incompatible and give rise to inter-role conflict. In support of spillover, namely negative spillover, Judge and Ilies (2004) found that negative affect at work was positively related to a negative affect at home. Moreover, Williams and Alliger (1994) found that distress and fatigue in the work (family) role spilled over to the family (work) role.

A more recent model that has been proposed to explain the dynamics of inter-role conflict is the work-home resources model (WH-R model; ten Brummelhuis & Bakker, 2012). Drawing from the WH-R model, it proposes that inter-role conflict happens when contextual demands in one role (e.g., physical, cognitive and emotional) negatively impact a person's personal resources (e.g., induce negative affect, decrease positive affect, reduce energy/health, or cost someone time) which can subsequently impair outcomes in another role (e.g., decreases performance). The WH-R model also postulates short-term and long-term processes about how one role can adversely impact another. Specifically, the model suggests that experiencing a demanding role in the short-term is more likely to adversely impact volatile personal resources, such as affect, energy and attention, which should have short-term adverse outcomes on another role. On the other hand, experiencing a demanding role in the long-term, is more likely to adversely impact

structural personal resources, such as health and outlook on life, which will in turn have longer-term adverse consequences on another role.

There is vast empirical support for the notion of inter-role conflict in the context of work and family roles (see a meta-analysis by Michel, Kotrba, Mitchelson, Clark, & Baltes, 2011 concerning how the work and family roles can impact one another). Comparatively less research has been done in the context of work and school roles, but there is a good deal of evidence that conflicts between work and school do happen. For example, studies have shown that work demands are positively related to work-to-school conflict (e.g., Adebayo, 2006; Butler, 2007; Markel & Frone, 1998; Olson, 2014; Wyland et al., 2016), and that school involvement and school demands are positively related to school-to-work conflict (Olson, 2014; Wyland, Lester, Mone, Winkel, 2013; Wyland, Lester, Ehrhardt & Standifer, 2016). The topic of this paper is on the latter direction, regarding the effect of school on work.

Despite that fact that engaging in multiple roles can be difficult, it can also be an enriching experience. According to Greenhaus and Powell (2006), there are three beneficial effects of engaging in multiple roles. Firstly, if someone is fortunate enough to engage in two enjoyable roles, then this can have additive effects on their well-being. For example, research has shown that satisfaction with work and family roles have additive effects on happiness (Rice, Frone, & McFarlin, 1992 as cited in Greenhaus & Powell, 2006). Another beneficial effect of engaging in multiple roles is the buffering effect. That is to say, when someone participates in one enjoyable role, but also has a less enjoyable role, then the enjoyable role can mitigate against the negative experiences in the non-enjoyable role. For example, if someone is stressed from work, but he or she has a happy home life, then just thinking about their loving home life can help to alleviate any work stress. Finally, a third benefit of engaging in multiple roles is the possibility of one role transferring useful resources to another that can improve outcomes in the

latter role. For example, a parent who cares for a young child, may subsequently make them a more understanding, caring and supportive manager at work. According to Greenhaus and Powell (2006), the latter type of enrichment best captures the idea of inter-role enrichment.

The spillover model mentioned earlier can also be used to explain inter-role enrichment. Specifically, the spillover model says that if one domain is endowing a person with positive affect or a positive attitude, then these positive experiences can spillover to another domain (Edwards and Rothbard, 2000), which can conceivably create positive outcomes in the second domain. In support of positive spillover from one role to another, Judge and Ilies (2004) found that positive affect at work was positively related to a positive affect at home. In addition, Williams and Alliger (1994) found that elation in the family role spilled over to the work role.

The WH-R model also proposes a paradigm for inter-role enrichment (ten Brummelhuis & Bakker, 2012). Drawing from the WH-R model, it posits that inter-role enrichment happens when one role provides contextual resources (e.g., social support, autonomy, opportunities for development or feedback), which can increase personal resources (e.g., positive affect, physical/cognitive energy, optimism, knowledge, perspectives, skills etc.), which can then be leveraged to improve outcomes in another role (e.g., better performance or being more satisfied in the other role). The model also postulates short-term and long-term processes for how one role can positively impact another. For example, contextual resources provided in the short-term, like recognition from a supervisor (a form of social support), can increase volatile personal resources in the short term, such as positive affect, which can positively (albeit temporarily) impact another role, such as increasing performance. On the other hand, if one role endows a person with more long-term contextual resources, such as a good marriage or an extensive social network, then this should imbue a person with longer lasting personal resources, such as good health, self-esteem,

and/or an optimistic outlook, which should allow for more longer-term positive impacts on another role.

There is ample empirical support for the notion of inter-role enrichment across work and family roles and vice versa (see a meta-analysis by Lapierre, Li, Kwan, Greenhaus, DiRenzo & Shao, 2018). Of course, inter-role enrichment should also apply to other roles beyond just work and family. Indeed, there is some evidence that the work and school domains can enrich one another. For example, it has been found that school relevance (i.e., the extent to which school knowledge can be applied to the work domain) and cross-domain interpersonal support at school (i.e., receiving support from the school domain that can be applied in the work domain) are positively related to school-to-work facilitation (Wyland et al., 2016). It has also been found that job control, job-school congruence, and cross-domain interpersonal support at work (i.e., receiving support in the work domain, whereby the content of support is relevant to the school domain) are positively related to work-to-school facilitation (Butler, 2007; Wyland et al., 2016). Additionally, Creed, French and Hood (2015) found that work-based benefits, such as learning skills at work that can help in school, feeling a sense of self-importance from being employed, and work involvement, are all positively related to work-to-school facilitation. It has also been found that when students are more satisfied in the school domain, they reported lower work stress (Kirby, Biever, Martinez & Gomez, 2004).

Altogether, it seems clear that different life roles, including the roles of being a student and a worker, can impact each other and these effects can be either positive or negative. My research aims to examine both the positive and negative effects that school can have on work. I will leverage the stress appraisal model (school as a hindrance, threat and challenge) to examine how these stressful conditions in school impact OCB (as well as task performance, and CWB) directly and indirectly via affect. Based on my knowledge, only one other study has incorporated

the stress appraisal model to examine how school can impact work, and this study was done by Calderwood and Gabriel (2017). As previously mentioned, I will expand on their work. In order to build my hypotheses, I borrow from the WH-R model (as did Calderwood & Gabriel, 2017), which provides a framework for how different roles can influence one another. The logic that contextual demands and resources from one role can influence personal resources, which can subsequently impact another role seems applicable not just to the work-home interface, but the school-work interface as well. Using this model, I assume that school hindrance and threat appraisals will be contextual demands, whereas school challenge appraisal will be both a contextual demand and a contextual resource. I also assume that affect will represent personal resources, and that OCB (as well as task performance and CWB) will be the outcome in another role

Affect

Affect is a broad term and covers a wide range of feelings that people experience from short-term positive and negative discrete emotions (e.g., anxiety, fear, guilt, alert, enthusiasm) to longer-lasting and more diffuse positive and negative mood states to enduring personality characteristics, called trait positive affect and trait negative affect (Fisher, 2000; Barsky & Kaplan, 2007). In this study (namely for measuring affect in the hypotheses), I adopt the conceptualization of positive affect (PA) and negative affect (NA) developed by Watson and colleagues (Watson, Clark & Tellegen, 1988; Watson & Clark, 1994). They defined positive affect (PA) as a general feeling of pleasant engagement with the environment that includes experiencing a broad range of positive emotions, such as feeling enthusiastic, active, alert, strong and being concentrated. In addition, they define negative affect (NA) as a general feeling of unpleasant engagement with the environment that includes experiencing a broad range of negative emotions, such as distress, hostility, fear, and nervousness. The conceptualization of PA

and NA has been used extensively in past research, and has emerged as one of the dominant paradigms of emotional experience, and importantly has also been used in intraindividual analyses, suggesting that these dimensions of affect have within-person variance (Watson and Clark, 1994). It is also worth mentioning that PA and NA have been found to be empirically distinct constructs, meaning that having high PA does not signify having low NA (Watson et al., 1988). The distinctiveness of PA and NA is an important idea in this paper, because I propose that different school stress appraisals can impact both PA and NA. In the context of this paper, PA and NA will be measured as medium-term affective states, experienced, on average, over the last week.

THEORETICAL FRAMEWORK: BUILDING TOWARD AN INTEGRATED MODEL OF LINKS BETWEEN SCHOOL STRESS APPRAISALS AND OCB

The idea that stress appraisals (i.e., hindrance, threat and challenge) and/or stressors (e.g., role ambiguity, role overload) can impact OCB seems to be supported by the literature (e.g., Chang et al., 2009; Eatough et al., 2011; Parker, Bell & Gagne, 2019; Rodell & Judge, 2009). One of the key mechanisms that can explain this relationship is affect. For example, Rodell and Judge (2009) found that work challenge appraisal had a positive indirect effect on OCB via attentiveness, and a negative indirect effect on OCB via anxiety. They also found that work hindrance appraisal had a negative indirect effect on OCB via anxiety. Extending from these findings, another avenue that seems worthy of pursuing is the cross-domain relationship of how school stress appraisals (as a hindrance, threat and challenge) can impact OCB via affect. To my knowledge there is only one other study that has adopted this hindrance-threat-challenge framework to examine how school impacts work (i.e., Calderwood & Gabrield, 2017, as previously noted). More specifically, Calderwood and Gabriel (2017) investigated how school hindrance appraisal impacted the work outcomes of task performance, engagement at work, and

emotional exhaustion at work, but they found no significant relationships. However, Calderwood and Gabriel (2017) measured school hindrance appraisal based on stimuli that were a priori assumed to be hindering, when they may not have been considered so by participants. In addition, they did not measure school threat or school challenge appraisals. To get a better look at the cross-domain impact of school on OCB, I take a different approach as previously mentioned, and I include all three stress appraisals.

In what follows, I build towards forming my hypotheses by understanding how various school stress appraisals (as a hindrance, threat and challenge) may impact workplace OCB via positive and negative affect. I do this by first discussing how different stress appraisals may be related to affect, and second by discussing how affect may be related to OCB. Afterwards hypotheses will be advanced concerning the indirect effects of school stress appraisals on OCB via positive and negative affect.

Relation of Stress Appraisals with Positive and Negative Affect.

Relation of Hindrance Appraisal with Positive and Negative Affect. LePine et al. (2005) argued that hindrances stimulate negative affective states. This is in line with evidence showing that hindrances are positively related psychological distress, fatigue (Tuckey et al. 2015), anxiety, anger (Rodell & Judge, 2009), psychological strain (see meta-analysis by Mazzola & Disselhorst, 2019; as well as Webster et al. 2010), strain (see meta-analyses by Lepine et al., 2005, and Podsakoff, LePine & LePine, 2007, who measured strain by using, among other things, negative emotions such as anxiety, tension, and frustration), burnout (Mazzola & Disselhorst, 2019), and emotional exhaustion (Tuckey et al., 2015; Sawney & Michel, 2021). Also, hindrances have been found to be negatively related to job satisfaction (see meta-analysis by Podsakoff et al., 2007), which suggests that hindrances are associated with negative attitudes, and are thus also likely to enhance negative affect.

Although less intuitive, it seems reasonable to suggest that hindrances will also impair positive affect. A key aspect in the construct of positive affect is the notion of having energy (e.g., being attentive, alert, active, inspired and strong; Watson et al., 1988) and it seems reasonable to suggest that hindrances will impair a person's energy (and thus their positive affect), given that having to deal with hindrances seems inherently depleting. Consistent with this, there is evidence that hindrances are negatively related to vigor (Van den Broeck et al, 2010) as well as motivation (see meta-analysis by LePine et al., 2005). Further, the idea that hindrances are associated with low energy/positive affect is in line with findings that hindrances are negatively related to engagement (see meta-analysis by Mazzola & Disselhorst, 2019). For these reasons, hindrance appraisal of school should be positively related to negative affect and negatively related to positive affect.

Relation of Threat Appraisal with Positive and Negative Affect. It seems reasonable to suggest that, like hindrances, threats will also stimulate negative affect and impair positive affect. Firstly, it has been proposed that threats engender negative affective states, such as anxiety, fear and worry (Folkman & Lazarus, 1985). The notion that threats should generate negative affect is also consistent with the conservation of resources (COR) theory, which suggests that threats generate anxiety because they endanger resources (Hobfoll, 1989). Empirically, threats have been found to be positively related to the negative affective states of psychological distress, anger, anxiety, and emotional exhaustion (Tuckey et al. 2015) which suggests that threats should give up negative affect. In addition to threats evoking negative affect, it also seems reasonable to suggest that threats can impair positive affect. Because people have an innate drive to expend energy to eliminate threats (Tuckey et al. 2015), it makes sense that threats should be depleting, and a person may feel less strong, active and inspired (key of components of positive affect) as a result of having to cope with them. In support of the notion that threats deplete energy and thus positive affect, Tuckey et al., (2015) found that threats decrease work dedication (which was captured using the

energy components of enthusiasm and inspiration). Taken together, it seems that threat appraisals of school should increase negative affect and reduce positive affect.

Relation of Challenge Appraisal with Positive and Negative Affect. Scholars have argued that challenges should evoke positive affect in people (LePine et al., 2005), such as hopefulness, eagerness, and excitement (Folkman & Lazarus, 1985). In line with this, empirically, Rodell and Judge (2009) found that work challenge appraisal engendered the positive emotion of attentiveness, Tuckey et al. (2015) found that challenges increase activated pleasant affect, and a meta-analytic review by Mazzola and Disselhorst (2019) found that challenges were positively related to positive affect. Mazzola and Disselhorst (2019) also found that challenges were positively related to engagement, as did a more recent study by Sawhney and Michel (2021). Challenges have also been found to be positively related to job satisfaction (Webster, Beehr & Christiansen, 2010), which suggests that challenges are associated with positive attitudes, and are thus also likely to enhance positive affect. Furthermore, Van den Broeck et al. (2010) argued that challenges are stimulating, which suggests that they should inspire a sense of vigor (which is akin to positive affect). Indeed, they found that challenges were positively related to vigor (Van den Broeck et al., 2010). Also, Tuckey et al. (2015) found that challenges at work were positively related to work dedication (which was measured using dimensions indicative of positive affect, such as enthusiasm and inspiration).

That said, challenges are not exclusively associated with positive affect, as previously discussed. This is because they remain inherently demanding and thus may induce negative affect as well. Supporting this fact, it has been found that challenging work was positively related to anxiety (Rodell & Judge, 2009), psychological strain (Webster et al., 2010; see meta-analysis by Mazzola & Disselhorst, 2019), strain (see meta-analyses by LePine et al., 2005 and Podsakoff et al., 2007, who measured strain by including among other things, indicators of negative affect,

such as anxiety, tension, frustration;) and burnout (Mazzola & Disselhorst, 2019). So, challenges may provoke positive affect, as well as negative affect.

Relation of Positive and Negative Affect with OCB

Relation of Positive Affect with OCB. Numerous theories suggest that positive affect will increase OCB. First, as previously noted, the feel-good-do-good hypothesis, suggests that being in a positive state should compel people to help others (Lyubomirsky et al., 2005), which is a key dimension of OCB. Second, as noted earlier, the broaden and build theory posits that positive emotions broaden the thought and action repertoire (Fredrickson, 2004), and so it seems to make sense that people experiencing positive affect may be more likely to act in ways that go beyond their technical job requirements. Third, positive emotions have been theorized to engender approach behaviours rather than avoidance behaviours (Lyubomirsky et al., 2005), and thus, people who are experiencing positive affect may amplify their engagement at work, yielding more OCB. Related to this, Staw, Sutton and Pelled (1994) proposed that positive affect should engender greater interpersonal attraction, (which aligns with OCB-I), and should also enhance task activity, (which aligns with the conscientiousness component of OCB). Fourth, the theory of mood maintenance suggests that those in a positive state will want to remain in this state (Eisenberg, 1991), and so, if someone is experiencing positive affect, it may be more likely that they do good things, like OCB, in order to stay in this state.

Empirical evidence has supported the notion that positive affect engenders OCB. For example, it has been found that positive mood is positively related to OCB intentions at work (Williams & Shiaw, 1999), the number of solutions proposed to solve a problem (civic virtue component of OCB; Vosburg, 1998), and helping co-workers (George, 1991). Furthermore, Ilies et al. (2006) found that daily changes in positive affect were positively related to daily changes in OCB within-person over 15 days. Lastly, Dalal et al., (2009) found that positive affect was

positively related to OCB within-persons. Taking theory and evidence together, it seems clear that positive affect should give up OCB.

Relation of Negative Affect with OCB. Existing theories seem to suggest that the relation between negative affect and OCB may be complex. On one hand, some researchers have argued that being in a negative state causes people to narrow their focus on the negative state that they are in or the problem at hand (Folkman & Moskowitz, 2000), which could make it more difficult to pay attention to other things, such as OCB. The narrowing of focus premise seems to have accrued empirical support. For example, it has been found that people experiencing a depressed mood are more likely to ruminate about it, by, for example, thinking about reasons why they tend to react negatively to things or thinking about the ramifications of them being in a negative state, such as not being able to do their job properly (Nolen-Hoeksema, Parker, & Larson, 1994). Also, Gasper and Clore (2002) found that people in a sad mood were less able to reproduce pictures from memory as compared to people in a good mood, suggesting that people in sad mood had a narrower cognitive scope than did people in a good mood. Self-regulation theory (Beal et al. 2005) can also be used to elucidate why negative affect should subdue OCB. Self-regulation theory proposes that it takes resources to modulate our behaviour, and because many people try to self-regulate their negative state while in public, this could exhaust resources, leaving less energy for OCB at work.

On the other hand, negative states may also cause people to engage in more OCB. The rationale for this argument is based on negative state relief theory, which postulates that when people are in a negative state, they will be more likely to help others (which is a key dimension of OCB), in order to alleviate their negative state and make themselves feel good (Cialdini, Darby, Vincent, 1973). Many studies have supported the notion that a negative state can induce helping behaviour. For example, Cialdini et al. (1973) found that when people were exposed to an event

to induce a negative state, and not given a chance to improve their state afterwards, it was found that these people helped more than those given a chance to improve their state. On the basis of this, they concluded that people experiencing negative states help more. These results were echoed by Glomb, Bhave, Miner and Wall, (2011), who found that negative affect was positively related to the altruism dimension of OCB, and that people had a higher positive affect after the altruistic act, as compared to before. Thus, the notion that negative affect may spur magnanimous behaviour, such as the helping dimension of OCB, seems to be supported by the available evidence. Drawing from this theory, it may also follow that a negative state could compel people to do other nice acts beyond just helping that are associated with OCB more generally, such as being courteous, showing sportsmanship and being very conscientious at work. Consistent with this, Ilies, Peng, Savani, and Dimotakis (2013) found that the negative affective state of guilt, following feedback based on elevated levels of CWB, was positively related to OCB intentions and actual OCB at work.

Taken together, the relation between negative affect and OCB appears to be complicated, with theory and evidence suggesting that negative affect can decrease OCB or increase it. In light of this, in the hypotheses to come, I advance competing propositions regarding the link between negative affect and OCB.

Indirect Effects of School Stress Appraisals on OCB via Positive and Negative Affect

In the previous section, I reviewed literature about how different types of stress appraisals may impact affect, and how affect may impact OCB at work. At this point, I put everything together and propose models about how various school stress appraisals can impact OCB indirectly via affect. I present my hypotheses, starting with school hindrance and threat appraisal, followed by school challenge appraisal. School hindrance and threat appraisal are discussed together for parsimony reasons, because I predict that they will have parallel effects on OCB.

School Hindrance and Threat Appraisal. Based on previous discussions, I propose that when a student-worker appraises school as more of a hindrance or more of a threat, this should increase negative affect and decrease positive affect, as compared to times when the same student-worker appraises school as less of a hindrance or less of a threat. In turn, the more a student-worker experiences negative affect (from school), then this should lead the same student-worker to engage in either less OCB at work, if their attention narrows to focus on the cause of the negative state (in this case school), or it could lead to more OCB at work, if they aim to get out of their negative state by doing something good to make themselves feel better. Also, the less a student-worker experiences positive affect (from school), then this should lead the student-worker to engage in less OCB at work.

My rationale is generally consistent with the WH-R model. I reasoned that school hindrance and threat appraisals can be considered contextual demands (since they are stressful), that can negatively impact a person's short-term personal resources (i.e., increase negative affect and decrease positive affect), which can subsequently adversely impact another role, namely workplace OCB. My rationale is also consistent with spillover theory because I assumed that affect generated from school would carry over to work for student workers. Accordingly, I propose the following hypotheses for school hindrance appraisal and school threat appraisal, respectively.

For school hindrance appraisal:

H1a: Within individuals, there is a negative indirect effect of appraising school as a hindrance on workplace OCB via negative affect.

H1b: Within individuals, there is a positive indirect effect of appraising school as a hindrance on workplace OCB via negative affect.

H2: Within-individuals, there is a negative indirect effect of appraising school as a

hindrance on workplace OCB via positive affect.

For school threat appraisal:

H3a: Within individuals, there is a negative indirect effect of appraising school as a threat on workplace OCB via negative affect.

H3b: Within individuals, there is a positive indirect effect of appraising school as a threat on workplace OCB via negative affect.

H4: Within-individuals, there is a negative indirect effect of appraising school as a threat on workplace OCB via positive affect.

Taken together, the above hypotheses, which are represented in Figures 1 and 2, suggest that the total effect of school hindrance and school threat appraisal on OCB is unclear. In some cases, school hindrance appraisal and school threat appraisal are expected to increase OCB, whereas in others, they are expected to decrease OCB. Existing theory and evidence provide support for each of these claims. As such, two research questions are proposed regarding the overall relationships between school hindrance appraisal and school threat appraisal with workplace OCB.

Research Question 1: At the within-person level, what is the total effect of school hindrance appraisal on OCB?

Research Question 2: At the within-person level, what is the total effect of school threat appraisal on OCB?

School Challenge Appraisal. As previously discussed, challenges may engender both positive and negative affect. Thus, I propose that when a student-worker appraises school as more challenging, this should engender more positive affect and more negative affect, as compared to times when the same student-worker appraises school as less challenging. In turn, the more a student-worker experiences positive affect (from school), the more this same student-worker

Figure 1: Model for the Indirect Effects of School Hindrance Appraisal on OCB via Affect

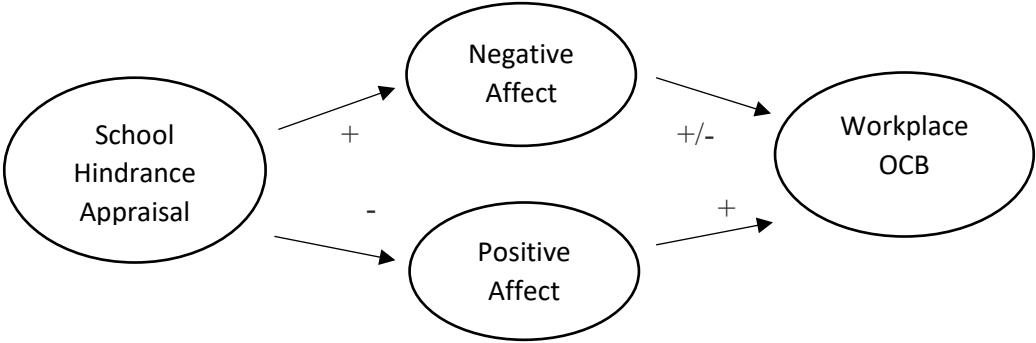
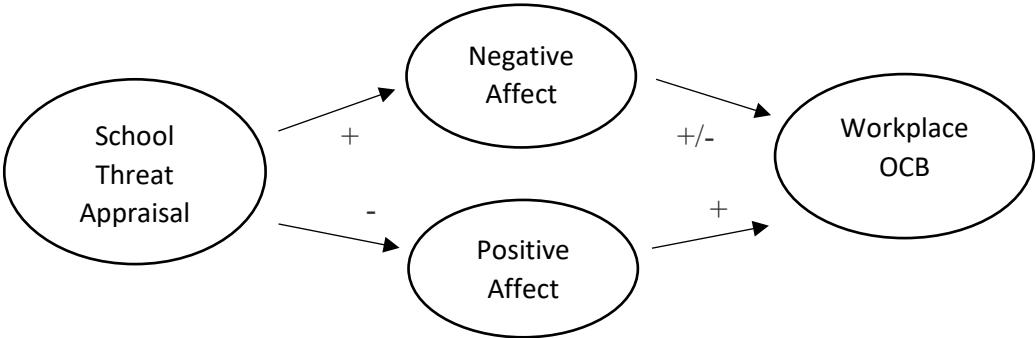


Figure 2: Model for the Indirect Effects of School Threat Appraisal on OCB via Affect



should increase their engagement in OCB at work, compared to when they experience less positive affect. And, the more a student-worker experiences negative affect (from school), then this should lead the same student worker to engage in either less OCB at work, if their attention narrows to focus on the cause of the negative state (in this case, school), or more OCB at work, if they aim to get out of their negative state by doing something good to make themselves feel better.

My rationale is generally consistent with the WH-R model. First, I reasoned that school challenge appraisal can be considered a contextual resource (since school can provide people with opportunities for development, a key contextual resource in the WH-R model), which can positively impact short-term personal resources (i.e., increase positive affect), and subsequently positively impact another role, in the form of OCB at work. I also reasoned that school challenge appraisal can be considered a contextual demand (since challenges are stressful), which can negatively impact a person's short-term personal resources (i.e., increase negative affect), which can subsequently adversely impact another role, in the form of workplace OCB. My rationale is also consistent with spillover theory because I assumed that affect generated at school would carry over to work for student-workers. Accordingly, I propose the following hypotheses for school challenge appraisal:

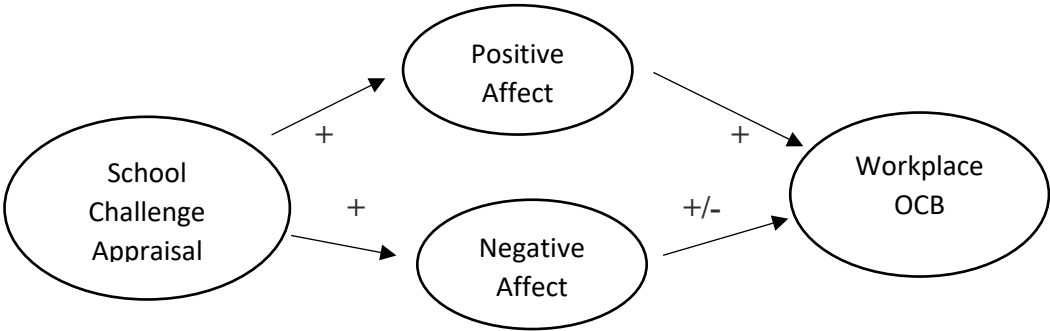
H5: Within-individuals, there is a positive indirect effect of appraising school as a challenge on workplace OCB via positive affect.

H6a: Within-individuals, there is a negative indirect effect of appraising school as a challenge on workplace OCB via negative affect.

H6b: Within individuals, there is a positive indirect effect of appraising school as a challenge on workplace OCB via negative affect.

Taken together, the above hypotheses, which are represented in Figure 3, suggest that the

Figure 3: Model for the Indirect Effects of School Challenge Appraisal on OCB via Affect



total effect of school challenge appraisal on OCB is unclear. In some cases, school challenge appraisal is expected to increase OCB, whereas in others, school challenge appraisal is expected to decrease OCB. Existing theory and evidence provide support for each of these claims. As such, a research question is proposed regarding the overall relationship between school challenge appraisal and workplace OCB.

Research Question 3: At the within-person level, what is the total effect of school challenge appraisal on OCB?

Controlling for Work Stress Appraisals. One set of variables that may be related to all the variables of interest in this study (i.e., school stress appraisals, affect and OCB), and therefore may cause spuriousness is work stress appraisals. Firstly, work stress appraisals have the capacity to impact OCB, based on the same logic that was applied to school stress appraisals, and moreover work stress appraisals seem more proximal to OCB than do school stress appraisals. In fact, Rodell and Judge (2009) found that work challenges and hindrances were related to OCB. Secondly, past research has found that work stress appraisals have the capacity to influence positive and negative affect (e.g., Rodell & Judge, 2009; Tuckey et al. 2015). Lastly, it also seems possible that work stress appraisals may have the capacity to influence school stress appraisals, especially when matching the type of school and work stress appraisals to one another. For example, a person who is experiencing hindrances at work may become frustrated and annoyed and start to see everything as a hindrance, akin to a stress contagion, which could lead to a higher probability of seeing hindrances at school. Likewise, a person who is experiencing challenges at work may feel good about life and be more likely to see challenges in other domains, such as school.

Therefore, because work stress appraisals may impact school stress appraisals, affect, and OCB, it seems valuable to control for them. Accordingly, I control for the work stress appraisal that maps on to the associated school stress appraisal for each hypothesis and each research question under consideration (e.g., controlling for work threat appraisal in the analysis with school threat appraisal). This should eliminate any shared variance between the work stress appraisal and the associated school stress appraisal of the same type, in addition to accounting for any effects of the work stress appraisal on affect and OCB. After controlling for work stress appraisals, I propose that school stress appraisals will still have an impact on OCB. This is because school likely holds high importance for many student-workers and so school stress appraisals should be able to exhibit a unique influence on OCB. The following hypotheses are proposed for school hindrance, threat and challenge appraisal, respectively.

For school hindrance appraisal:

H7a: Within individuals, there is a negative indirect effect of appraising school as a hindrance on workplace OCB via negative affect, after controlling for work hindrance appraisal.

H7b: Within individuals, there is a positive indirect effect of appraising school as a hindrance on workplace OCB via negative affect, after controlling for work hindrance appraisal.

H8: Within-individuals, there is a negative indirect effect of appraising school as a hindrance on workplace OCB via positive affect, after controlling for work hindrance appraisal.

For school threat appraisal:

H9a: Within individuals, there is a negative indirect effect of appraising school as a threat on workplace OCB via negative affect, after controlling for work

threat appraisal.

H9b: Within individuals, there is a positive indirect effect of appraising school as a threat on workplace OCB via negative affect, after controlling for work threat appraisal.

H10: Within-individuals, there is a negative indirect effect of appraising school as a threat on workplace OCB via positive affect, after controlling for work threat appraisal.

For school challenge appraisal:

H11: Within-individuals, there is a positive indirect effect of appraising school as a challenge on workplace OCB via positive affect, after controlling for work challenge appraisal.

H12a: Within-individuals, there is a negative indirect effect of appraising school as a challenge on workplace OCB via negative affect, after controlling for work challenge appraisal.

H12b: Within individuals, there is a positive indirect effect of appraising school as a challenge on workplace OCB via negative affect, after controlling for work challenge appraisal.

PILOT STUDY

A pilot study was conducted with the primary goals of exploring the dimensionality of school hindrance, threat and challenge appraisals, and gathering evidence that would support the selection of school stress appraisal scales to be used in the main study. Although there is evidence in the work domain that hindrance, threat, and challenge appraisals are distinct (see Tuckey et al. 2015), to my knowledge the dimensionality of school stress appraisals has not been investigated yet. Evidence to support the selection of school stress appraisals for the main study was sought by examining the dimensionality of the scales, the alphas of the scales, as well as

looking at the (between-person) relations between school stress appraisals and affect and OCB. Additional evidence was sought by looking at relations between school stress appraisals and task performance and CWB, as well as relations between work stress appraisals.

Participants and Procedure

Participants were recruited for the pilot study from a subject pool that Concordia University offers to students taking an entry-level organizational behaviour course as part of their Bachelor of Commerce degree. Studies are posted to an online platform, where students can sign-up to participate in research, in exchange for a small extra credit to their course grade. In order to participate in the pilot study, students needed to have a job. Initially, 251 undergraduate commerce students were recruited for the pilot study, which involved a single online survey. A carelessness analysis was done to determine if any participant surveys should be excluded from the data analyses. For each survey, a total of five indicators were used to determine carelessness: one indicator was the median time to complete the survey, two indicators were directed question indicators (i.e., please select 4 here, write continue here), another indicator was a self-report of how much effort the student put into answering the survey, and the last indicator was whether the student appeared to have straightlined their answers (DeSimone & Harms, 2018). If a student completed a given survey in less than one third of the median time, they received a strike; if they missed a directed question, they got a strike; if they admitted to low effort, they got a strike, and if they had evidence of straightlining, they got a strike. Students needed two or more strikes out of the five indicators to be considered careless on the survey. Twenty-one participants were eliminated for being careless or for leaving surveys blank. After eliminating careless participants and those who left the surveys blank, this left a final sample of 230 participants.

Participants in the final sample ranged in age from 18 to 31 years old, with an average age of 21.68 (SD= 5.92). In terms of gender, 52.2% identified as female, 47.4% identified as male,

and 0.4% did not respond. In terms of race, 52.17% were Caucasian; 29.13% were Asian; 3.91% were Hispanic; 2.17% were Black; and 12.61% identified as another race (most of these people identified as Middle-Eastern). The sample consisted of 86.09% full-time students and 13.91% part-time students. Students had diverse academic majors in their Commerce degree, including accountancy, economics, finance, management, marketing and supply-chain management. Related to work, participants reported working on average approximately 18 hours per week. Also, participants worked in a broad spectrum of industries, such as accommodation and food services, education, construction, healthcare, and finance and management.

Measures

Previously validated scales were used and adapted in minor ways for this research (see Appendix A for the original and adapted school and work stress appraisal scales). Adaptations for the school and work stress appraisal scales involved things like: framing the stem of the scales to reflect the type of stress being measured (i.e., hindrance, threat, challenge), framing the stem of the scales to reflect a weekly time frame, altering stress appraisal scales that previously referred to work to refer to school and vice versa, and other minor changes (e.g., changing verb tense, adding the word “school” or “work” to the item). For other scales, including the measures of OCB, task performance and CWB, adaptations (unless otherwise noted below) included framing the stems to refer to a weekly time frame and other minor changes as well (e.g., changing verb tense, adding the words “at work” for some items, changing the word “employee” to “I”). Because the adaptations were very minor to these published scales, the scales are not included in Appendix A, and sample items appear below. Participants were asked to respond to all items measuring stress appraisals (both school and work) on a Likert-scale that ranged from 1 (strongly disagree) to 5 (strongly agree). Furthermore, participants were asked to respond to all items

measuring affect and work behaviours (i.e., OCB, task performance and CWB) on a frequency scale that ranged from 0 (never) to 4 (very often).

School hindrance appraisal: The 4-item work hindrance scale by Searle and Auton (2015) and the 5-item school hindrance scale by LePine et al. (2004) were used. A sample item from the Searle and Auton scale is: “Over the past week, I saw school as hindering because it hampered any achievements I may want to accomplish at school”. A sample item from the LePine et al. scale is: “Over the past week, I saw school as hindering because of the amount of time I spent on busy work for my classes.”

School threat appraisal: The 3-item threat scale by Feldman et al. (2004) and the 8-item Academic Threat scale by Sirsch (2003) were used (note that I removed one item from the Sirsch scale, before the data was collected, because it seemed redundant with other items on the scale). A sample item from the Feldman et al. scale is: “Over the past week, I saw school as threatening because I thought that it may be a negative experience for me.” A sample item from the Sirsch scale is: “Over the past week, I saw school as threatening because I thought that I may not be able to follow the lessons.”

School challenge appraisal: The 4-item work challenge scale by Searle and Auton, (2015), the 5-item school challenge scale by LePine et al. (2004), as well as the 4-item challenge scale by Peacock and Wong (1990) were used. A sample item from the Searle and Auton scale is “Over the past week, I saw school as a challenge because it offered me the chance to learn a lot.” A sample item from the LePine et al. scale is “Over the past week, I saw school as a challenge because of the number of projects/assignments I had to do in my classes.” Finally, a sample item from the Peacock and Wong scale is: “Over the past week, I saw school as a challenge because it offered the possibility to have a positive impact on me.”

Work hindrance appraisal: The 4-item work hindrance scale by Searle and Auton (2015), and the 5-item school hindrance scale by LePine et al. (2004) were used. A sample item from the Searle and Auton scale is: “Over the past week, I saw work as hindering because it limited how well I could do at work”. A sample item from the LePine et al. scale is: “Over the past week, I saw work as hindering because of the amount of hassles I needed to go through to get my work done.”

Work threat appraisal: The 3-item threat scale by Feldman et al. (2004) and the 8-item Academic Threat scale by Sirsch (2003) were used. A sample item from the Feldman et al. scale is: “Over the past week, I saw work as threatening because I thought that it would have a negative impact on me.” A sample item from the Sirsch scale is: “Over the past week, I saw work as threatening because I thought that it may be too much for me.”

Work challenge appraisal: The 4-item work challenge scale by Searle and Auton, (2015), the 5-item school challenge scale by LePine et al. (2004), as well as the 4-item challenge scale by Peacock and Wong (1990) were used. A sample item from the Searle and Auton scale is “Over the past week, I saw work as a challenge because it offered me the chance to do something new.” A sample item from the LePine et al. scale is “Over the past week, I saw work as a challenge because of the difficulty of my work assignments.” Finally, a sample item from the Peacock and Wong scale is: “Over the past week, I saw work as a challenge because it made me eager to tackle things on the job.”

Positive and Negative Affect: The short-version PANAS scale by Watson et al. (1988) was used to measure positive and negative affect. This scale includes 10 different positive emotions to measure positive affect, as well as 10 different negative emotions to measure negative affect A sample item to measure positive affect is: “Over the past week, indicate the extent to which you felt the following emotion: interested.” A sample item to measure negative

affect is: “Over the past week, indicate the extent to which you felt the following emotion: agitated.”

Organizational Citizenship Behaviour (OCB): The 16-item OCB scale by Lee and Allen (2002) was used, which includes 8 OCB-O items and 8 OCB-I items. Items were amalgamated together to form a single score, given prior evidence suggesting that the dimensions should be amalgamated (Hoffman et al., 2007). A sample item is: “Over the past week, I helped co-workers who had been absent.”

Task performance: The 7-item scale by Williams and Anderson (1991) was used. As described below, I removed one item from the scale in order to increase the scale’s internal consistency to an acceptable level. A sample item is: “Over the past week, I fulfilled the responsibilities specified in my job description.”

Counterproductive Work Behaviour (CWB): Eight “minor” deviance items were selected from Robinson and Bennett’s (1995) scale. A sample item is: “Over the past week, I gossiped about my manager.” One item on the scale was changed from “Employee making personal long-distance calls or mailing personal packages from work” to “Hid to look at my cellphone while I was at work.” The later item seems to better reflect the current culture that we are in.

Analyses and Results

In order to explore the dimensionality of school hindrance, threat, and challenge stress appraisals, exploratory factor analyses were performed. To start, an analysis was executed with the default eigenvalue > 1.0 criterion for factor selection and requesting the results of an oblique rotation. Five factors had eigenvalues greater than one, which suggested that a five-factor solution may be suitable. However, when looking at the pattern matrix, the five-factor solution did not appear to make conceptual sense. Upon examining the scree plot, there were four factors above the elbow, which suggested that a four-factor solution may be suitable. Thus, an analysis was performed

setting the number of factors to four and requesting the results of an oblique rotation (see Table 1). Three of the four factors from this solution were easily interpretable, whereas the fourth was less clear. The first factor included seven of the nine items from the school hindrance scales and seemed to reflect the school hindrance construct. The second factor included all ten of the items from the school threat scales and seemed to reflect the school threat construct. Items from the school challenge appraisal scales loaded on two separate factors. The third factor included all four items from the Searle and Auton (2015) challenge scale and all four items from the Peacock and Wong challenge scale (1990), which loaded together on what appeared to reflect the school challenge construct. The fourth factor, which is the more complex factor, included all five items from the Lepine et al. (2004) challenge scale plus two items from the Lepine et al. (2004) hindrance scale. So, this fourth factor was less clear, although it still seemed to primarily reflect school challenge appraisal. Overall, although school challenge scales loaded on two separate factors, the results of the EFA suggest that school hindrance, threat and challenge appraisals are distinct constructs.

The internal consistencies of all scales were above .70, and many were above 0.80, with the exception of task performance, which had an internal consistency of .64. Because this is typically considered low, one item was removed, which increased the alpha to a more acceptable level of .79. The internal consistencies of all scales are presented in Table 2 on the diagonal in bold.

To further explore whether school stress appraisals are distinct constructs, evidence of convergent and divergent validities were sought by looking at the inter-correlations among the school stress appraisal scales (see Table 2). Starting with convergent validity, both school hindrance appraisal scales were strongly, positively correlated with each other ($r = .67, p < .001$), as were both school threat appraisal scales ($r = .74, p < .001$). Also, all three challenge scales were

Table 1*Pilot Study: Results of Exploratory Factor Analysis for School Stress Appraisal Items*

Item	Factor 1 Hindrance	Factor 2 Threat	Factor 3 Challenge 1	Factor 4 Challenge 2
Over the past week, I saw school as hindering because...				
1. it limited how well I could do	.732	.106	-.092	-.226
2. it restricted my capabilities	.731	.154	-.111	-.106
3. it hampered achievements I want to accomplish at school	.721	.054	-.129	-.141
4. it prevented me from mastering difficult aspects of school work	.706	.178	.024	-.155
5. favoritism rather than performance affected grades	.636	-.095	.122	.122
6. of the inability to understand what was expected	.608	.174	-.034	-.016
7. the degree to which my learning seemed stalled	.571	.190	-.168	-.042
8. of the amount of hassles needed to get projects/assignments done	.197	.025	-.138	-.626
9. of the time spent on busy work for my classes	.207	.116	-.142	.572
Over the past week, I saw school as threatening because I thought that....				
10. I may not know enough	-.060	.854	-.043	.039
11. I may not be smart enough	-.024	.846	.004	.063
12. it would result in negative outcomes for me	.064	.835	.011	.107
13. it would have a negative impact on me	.085	.823	.009	.150
14. that new subjects may be too difficult	.010	.801	.097	-.048
15. it would be too difficult	.051	.788	.018	-.052
16. it may be a negative experience for me	.062	.765	-.053	.119
17. I may not be able to follow the lessons	.083	.659	-.016	-.140
18. I thought that school would become too much	.000	.637	-.024	-.337

Note: N = 230. Loadings from the pattern matrix are reported.

Table 1 cont'd

Item	Factor 1 Hindrance	Factor 2 Threat	Factor 3 Challenge 1	Factor 4 Challenge 2
Over the past week, I saw school as a challenge because...				
19. it offered the possibility to have a positive impact on me	.073	-.092	.813	-.011
20. it offered the chance to become a stronger person	.000	.007	.788	-.001
21. I was eager to tackle it	.074	-.038	.755	.139
22. it got me excited about outcome	.116	-.140	.744	.085
23. it offered a learning experience	-.155	.108	.743	-.101
24. it offered the chance to do something new	-.012	-.003	.733	-.007
25. it offered the chance to learn a lot	-.108	.046	.689	-.231
26. it kept me focused on doing well	-.111	.128	.638	-.154
27. of the amount of time I spent on projects/assignments	.020	-.106	.040	-.876
28. of the number of projects/assignments	-.039	-.024	.066	-.844
29. of the volume of coursework I had to complete	-.014	-.017	.078	-.826
30. of the time pressures experienced in my classes	-.110	-.007	.107	-.819
31. of the difficulty of work	.131	.139	.247	-.487

Note: Number of observations = 230. Loadings from the pattern matrix are reported.

Table 2*Pilot Study: Descriptive Statistics and Correlations*

<i>Variable</i>	<i>Mean</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
<i>1. School Hindrance LP</i>	3.06	.79	.73									
<i>2. School Hindrance S&A</i>	2.89	1.05	.67**	.93								
<i>3. School Threat FM</i>	2.42	1.17	.50**	.55**	.89							
<i>4. School Threat SI</i>	2.81	1.03	.59**	.60**	.74**	.92						
<i>5. School Challenge S&A</i>	3.76	.79	-.15*	-.18**	-.17**	-.07	.81					
<i>6. School Challenge P&W</i>	3.49	.87	-.18**	-.23**	-.23**	-.22**	.76**	.83				
<i>7. School Challenge LP</i>	4.00	.82	.38**	.31**	.17**	.38**	.38**	.23**	.88			
<i>8. Work Hindrance LP</i>	2.45	.81	.33**	.26**	.31**	.24**	.02	-.03	.02	.77		
<i>9. Work Hindrance S&A</i>	2.21	.97	.20**	.17**	.13*	.09	.08	.16*	-.08	.67**	.91	
<i>10. Work Threat FM</i>	2.03	.97	.19**	.28**	.37**	.23**	-.01	.02	-.00	.45**	.43**	.81
<i>11. Work Threat SI</i>	1.98	.81	.25**	.22**	.31**	.28**	.07	.10	.01	.55**	.53**	.67**
<i>12. Work Challenge S&A</i>	3.40	1.03	.10	.06	-.02	.07	.12	.23**	.18**	-.04	.01	-.07
<i>13. Work Challenge P&W</i>	3.36	.94	.12	.09	.02	.10	.08	.24**	.20**	-.07	.05	-.06
<i>14. Work Challenge LP</i>	3.10	.97	.04	.06	-.001	.001	.08	.13*	.17**	.17**	.20**	.19**
<i>15. Positive Affect</i>	2.29	.66	-.21**	-.21**	-.29**	-.34**	.28**	.43**	-.03	-.14*	.07	-.08
<i>16. Negative Affect</i>	1.92	.86	.44**	.47**	.51**	.60**	-.05	-.12	.39**	.24**	.12	.20**
<i>17. Task performance</i>	3.33	.56	-.13	-.11	-.17**	-.03	.07	.004	.31**	-.34**	-.36**	-.25**
<i>18. CWB</i>	1.11	.63	.10	.11	.20**	.15*	-.01	-.04	-.11	.39**	.21**	-.25**
<i>19. OCB</i>	2.29	.64	.11	.10	.05	.05	-.04	.09	.08	.04	.09	.001

Table 2 cont'd*Pilot Study: Descriptive Statistics and Correlations*

	11	12	13	14	15	16	17	18	19
11. <i>Work Threat SI</i>	.86								
12. <i>Work Challenge S&A</i>	.09	.87							
13. <i>Work Challenge P&W</i>	.10	.86**	.84						
14. <i>Work Challenge LP</i>	.32**	.34**	.32**	.87					
15. <i>Positive Affect</i>	-.03	.16*	.23**	.11	.86				
16. <i>Negative Affect</i>	.21**	-.03	0.00	.02	-.25**	.88			
17. <i>Task performance</i>	-.27**	.12	.13*	.05	.10	-.02	.79		
18. <i>CWB</i>	.23**	-.16*	-.18**	.01	-.17**	.18**	-.44**	.76	
19. <i>OCB</i>	.03	.44**	.49**	.21**	.23**	.13	.10	-.01	.86

Note: Number of observations = 229 or 230 depending on the variable. Cronbach's alphas appear in bold along the diagonal. LP = Lepine et al., S&A = Searle & Auton, FM = Feldman et al., P&W = Peacock and Wong, SI = Sirsch et al., CWB = counterproductive work behaviour, OCB = organizational citizenship behaviour. * $p < .05$, ** $p < .01$, correlations above $|\cdot17|$ are significant at $p < .001$.

positively correlated with each other, but the Searle and Auton, and Peacock and Wong scales appeared to be more highly correlated with each other ($r = .76, p < .001$), as compared to their correlations with the LePine et al. challenge scale ($r = .38, p < .001$ for Searle and Auton scale; $r = .23, p < .001$ for Peacock and Wong scale). In line with the results of the EFA, these findings suggest that the Searle and Auton, and Peacock and Wong scales are measuring one facet of school challenges, whereas the LePine et al. scale is likely measuring another. With respect to divergent validity, both school hindrance appraisal scales were positively correlated with both school threat appraisal scales (correlations ranged from $r = .50$ to $r = .60$, all $p < .001$). These correlations were relatively strong, suggesting a significant degree of overlap between the constructs, but still a significant portion of unshared variance remains. Next, all of the school hindrance and school threat appraisal scales were negatively correlated with the Searle and Auton, and Peacock and Wong school challenge appraisal scales (correlations ranged from $r = -.23$ to $r = -.15$, p -values ranged from $p < .05$ to $p < .001$), except for the school threat appraisal scale by Sirsch, which was unrelated to the school challenge appraisal scale by Searle and Auton. Also, all school hindrance and school threat appraisal scales were positively correlated with the LePine et al. challenge scale (correlations ranged from $r = .18$ to $r = .38$, p -values ranged from $p < .05$ to $p < .001$). Correlations were moderate, which may indicate that the LePine et al. scale is measuring something similar to school hindrances and threats. Without considering the LePine et al. challenge scale (which appears like it may not be following the transactional model of stress to measure stress appraisals), the results of the correlational analysis support the results of the EFA, suggesting that school stress appraisals are distinct.

Next, to get some preliminary evidence as to whether school and work stress appraisals are distinct, correlations between school and work stress appraisal scales were examined. Starting

with school and work hindrance appraisal scales, evidence showed that they had low to moderate positive correlations with each other, suggesting that school and work hindrance appraisals may be different constructs (correlations ranged from $r = .17$ to $r = .33$, p -values ranged from $p < .05$ to $p < .001$). Additionally, school threat appraisal scales had low to moderate positive correlations with work threat appraisal scales (correlations ranged from $r = .23$ to $r = .37$, all $p < .001$), supporting the idea that school and work threat appraisals are distinct. Finally, school challenge appraisal scales showed some non-significant, as well as weak positive correlations with work challenge appraisal scales (significant correlations ranged from $r = .17$ to $r = .24$, p -values ranged from $p < .05$ to $p < .001$), which buttresses the notion that school and work challenge appraisals are distinct. Overall, these results support the distinctiveness of school and work stress appraisals.

Other correlations in the nomological network of school stress appraisals are worth noting. First, as expected, both school hindrance appraisal scales were positively correlated to negative affect ($r = .44$, $p < .001$; $r = .48$, $p < .001$) and negatively related to positive affect ($r = -.21$, $p = .002$; $r = -.21$, $p = .001$). Moreover, all school hindrance appraisal scales were uncorrelated with task performance, CWB and OCB. Next, as expected, both school threat appraisal scales were positively correlated with negative affect ($r = .51$, $p < .001$; $r = .60$, $p < .001$) and negatively correlated with positive affect ($r = -.29$, $p < .001$, $r = -.34$, $p < .001$). Only the Feldman et al. school threat appraisal scale was negatively related to task performance ($r = -.17$, $p = .008$), whereas both school threat appraisal scales were positively related to CWB ($r = .20$, $p = .002$, $r = .15$, $p = .021$) and no school threat appraisal scale was related to OCB. For school challenge appraisal scales, only the Searle and Auton, and Peacock and Wong scales followed expectations and were positively related to positive affect ($r = .28$, $p < .001$, $r = .43$, $p < .001$ respectively), whereas the LePine et al. scale, was not related to positive affect. Furthermore,

only the LePine et al. school challenge appraisal scale was positively related to negative affect ($r = .34, p < .001$), whereas the other two school challenge appraisal scales were unrelated to negative affect. Only the LePine et al. school challenge appraisal scale had a positive relation with task performance ($r = .31, p < .001$), whereas the other two school challenge appraisal scales were unrelated to task performance. In addition, all school challenge appraisal scales were unrelated to CWB and OCB.

Continuing on, positive affect showed positive correlations with OCB ($r = .23, p < .001$), which was expected. There was no correlation between negative affect and OCB, which may due to the opposing effects of negative affect on OCB that could cancel each other out (as previously discussed). Also, all work hindrance and work threat appraisal scales were unrelated to OCB, whereas all work challenge appraisal scales had positive correlations with OCB (correlations ranged from $r = .21$ to $r = .49$, p-values ranged from $p = .001$ to $p < .001$). Furthermore, all work hindrance and threat appraisal scales were negatively related to task performance (correlations ranged from $r = -.25$ to $r = -.36$, all $p < .001$). In addition, only the Peacock and Wong work challenge appraisal scale had a positive relation to task performance ($r = .13, p = .04$), whereas the other two work challenge appraisal scales were unrelated to task performance. Lastly, all work hindrance and threat appraisal scales were positively related to CWB (correlations ranged from $r = .21$ to $r = .39$, p-values ranged from $p = .001$ to $p < .001$), whereas the Searle and Auton, and Peacock and Wong work challenge appraisal scales were negatively related to CWB ($r = -.16, p = .02$; $r = -.18, p = .006$ respectively) and the LePine et al. work challenge appraisal scale was unrelated to CWB.

Discussion

The main purpose of the pilot study was to examine the dimensionality of school stress appraisals, as well as to garner information to aid in the selection of school stress appraisal scales

to use in the main study. The results of the EFA analyses suggested that the school challenge appraisal scales loaded on two separate factors. This two-factor separation may be due to the content of the school challenge appraisal scales. The Searle and Auton (2015) and Peacock and Wong (1990) school challenge appraisal scales, which loaded together, ask participants to evaluate the extent to which they see school as a challenge using the theoretical definition of a challenge (which is more aligned with the transactional model of stress), whereas the Lepine et al. (2004) school challenge appraisal scale, which loaded on another factor, asks participants to evaluate the extent to which they see school as a challenge based on stimuli within school that are a priori assumed to be a “challenge” (e.g., time pressures, volume of work). These two different scale constructions seem like they would be capturing something different related to the challenge construct and likely explains why items on these three scales did not load together. Further, the fact that the LePine et al. (2004) school challenge appraisal scale relies on the assumption that certain demands within school (e.g., volume of work, time pressures) will be universally seen as challenging to all people may be an issue. This may not necessarily be the case, as discussed earlier, and, consequently, this scale seems to be less consistent with the transactional model of stress, which was the perspective that was adopted in this research. The assumption that certain things are challenging in the LePine et al. school challenge scale, when they may not be perceived as such, could also explain why the challenge items from this scale loaded with some hindrance items. Despite the unanticipated occurrence of school challenge appraisal items loading on two separate factors (which may be explained by the construction of the different school challenge scales), the results of the EFA, as well as convergent and divergent validity analyses appear to support the idea that school hindrance, threat and challenge appraisals are distinct.

Taking into account all of the results from the pilot study, the following three scales were chosen for inclusion in the main study for measuring school stress appraisals: the Searle and Auton hindrance appraisal scale, the Sirsch threat appraisal scale and the Searle and Auton challenge appraisal scale. The Searle and Auton school hindrance appraisal scale was selected because its items had had robust loadings on the EFA, and a strong alpha, and the scale had a positive correlation with negative affect, which is consistent with my theoretical models. The Sirsch et al. school threat scale was chosen for the same reasons, and also because it seemed to have stronger content validity than the Feldman et al. threat scale. Finally, the Searle and Auton school challenge scale was chosen for the robust loadings of its items in the EFA and strong alpha, as well as the positive correlation of this scale with positive affect, which is also consistent with my theoretical models. Also, because the Searle and Auton school hindrance scale was chosen, it seemed desirable to use their challenge scale, as well, for consistency purposes. These same scales were chosen to measure work stress appraisals for the main study.

METHOD (MAIN STUDY)

Participants and Procedures

Similar to the pilot study, participants were recruited from the subject pool that Concordia University offers to students taking an entry-level organizational behaviour course as part of their Bachelor of Commerce degree. Data for this study were collected once per week over a period of four weeks. More specifically, every Sunday night, for four weeks, students were invited to access a new online survey. Students had until 11:59pm the following Tuesday to complete each survey. In order to participate in the main study, students were required to have a job. Throughout the course of the study, 336 undergraduate students duly completed at least one survey. This resulted in a total of 1,221 survey observations completed over the four weeks. Of

the 336 students who duly completed at least one survey, only students who duly completed three or more surveys over the course of the four weeks were retained for the analyses. This is essential, because within-person longitudinal studies require at least three repeated measures per person. In total, 302 students duly completed three or more surveys (i.e., 1,171 survey observations). Furthermore, 265 students duly completed all four surveys (i.e., 1,160 survey observations). In order to determine how many participants duly completed surveys and should be retained in the study analyses and hypothesis tests, a carelessness analysis was done. I used the same carelessness process as described in the pilot study, except I removed the indicator of self-reported effort in completing the survey, and replaced it with another directed question indicator. In addition, in the main study, participants needed to miss at least 3 indicators of carelessness to be considered careless, whereas for the pilot study, participants only needed to miss at least 2 indicators to be considered careless. Based on this analysis, two participants were careless on only one survey each, but because they were not careless on any other surveys, all their surveys were retained in the analysis.

Participants in the final sample ranged in age from 18 to 44 years old, with an average age of 21.22 (SD=2.77). In terms of gender, 52.3% identified as female, 47.7% identified as male. In terms of race, 58.9% were Caucasian; 19.9% were Asian; 8.9% were Middle Eastern; 2.6% were Hispanic; 2.0% were Black; and 7.6% identified as another race. The sample consisted of 89.74% full-time students and 10.26% part-time students. Students were enrolled in diverse academic majors in their Commerce degree, including accountancy, economics, finance, management, marketing and supply-chain management. There were also a few of participants who were following a degree outside of commerce, namely computer science, philosophy, women's studies. Related to work, 7.03% of participants were full-time workers and 92.97% were part-

time workers. Participants worked in a broad spectrum of industries, such as accommodation and food services, education, construction, healthcare, and finance and management.

Study Design

The hypotheses tests, research questions, as well as supplementary analyses, were conducted using two study design configurations. I refer to these designs as the concurrent design and the lagged design. In the concurrent design, all of the variables (i.e., school stress appraisals, work stress appraisals, affect, OCB, task performance and CWB) were measured in a single weekly survey that was completed once per week over the four-week period (i.e., repeated cross-sectional measures). All the variables in the concurrent design were measured retrospectively, meaning that students were asked to report on their experiences for the previous week-long period from Sunday through Saturday. For the concurrent design, participants were included in the analyses if they answered at least three of the four surveys over the course of the study.

In the lagged design, I created temporal separation between the measurement of school stress appraisals (IV) from the measurements of positive and negative affect (intervening variables) and work outcomes (i.e., OCB, task performance and CWB), the latter of which (being the intervening variables and work outcomes) were taken at the same time. The lagged design was accomplished by asking respondents to report their anticipated (i.e., prospective) school stress appraisals for the upcoming week in each weekly survey, and then connecting those prospective appraisals to the participants retrospective reports about their positive and negative affect, as well as their work outcomes (e.g., OCB, task performance and CWB) that were gathered in the following week's survey. In other words, prospective school stress appraisals from the survey in Week 1 of the study were connected to retrospective measurements of affect and work outcomes from the survey in Week 2 (so all reports covered the same time period), and I repeated this cycle two more times, measuring prospective school stress appraisals at Surveys 2

and 3, and affect and work outcomes at Surveys 3 and 4. Given the structure of the lagged design, participants had to complete all four surveys in order to be included in the data analyses. This is because one missed survey would mean that prospective school stress appraisals could not be connected with affect and work outcomes from the following week's survey, and the students would not have had at least three repeated measures. The purpose of the lagged design was to mitigate issues related to alternate forms of causation and spuriousness in the concurrent design.

It is important to note that prospective work stress appraisals were not obtained, and accordingly, I could only control for work stress appraisals in the analyses pertaining to the concurrent design. Prospective measures of work stress appraisals were not obtained due to survey length considerations. Participants were already asked to report their school stress appraisals twice in each survey and to report their work stress appraisals once in each survey. I feared that adding an extra layer of work stress appraisals may have increased carelessness and attenuated response rates.

Measures

As in the pilot study, participants were asked to respond to all items measuring school and work stress appraisals on a Likert-scale that ranged from 1 (strongly disagree) to 5 (strongly agree), and asked to respond to all items measuring affect and work behaviour on a frequency scale that ranged from 0 (never) to 4 (very often). It is worth noting I made some minor adaptations to the school and work stress appraisal scales after the pilot study, which are described in Appendix A.

School hindrance appraisal: The 4-item work hindrance scale by Searle and Auton (2015) was used. A sample item from the retrospective scale is: "Over the past week, I saw some things related to school as hindrance that hampered any achievements I may want to accomplish at

school”. A sample item from the prospective scale is: “For the upcoming week, I foresee that school will be a hindrance that will restrict my capabilities at school.”

School threat appraisal: The 8-item Academic Threat scale by Sirsch (2003) was used. As previously mentioned in the pilot study, one item from this scale was removed prior to any analyses, because it seemed redundant compared to the other items on the scale. A sample item from the retrospective scale is “Over the past week, I saw school as a threat because I thought that I may not be able to follow the lessons.” A sample item from the prospective scale is: “For the upcoming week, I foresee that school will be a threat because I think that school may be too much for me.”

School challenge appraisal: The 4-item work challenge scale by Searle and Auton (2015) was used. A sample item from the retrospective scale is “Over the past week, I saw school as a challenge that offered me the chance to learn a lot.” A sample item from the prospective scale is “For the upcoming week, I foresee that school will be a challenge that will offer me a learning experience.”

Work hindrance appraisal: The 4-item work hindrance scale by Searle and Auton (2015) was used. A sample item from the scale is: “Over the past week, I saw some things at work as a hindrance that limited how well I could do at work”.

Work threat appraisal: The 8-item Academic Threat scale by Sirsch (2003) was used. A sample item used from the scale is: “Over the past week, I saw work a threat because I thought that it may be too much for me.”

Work challenge appraisal: The 4-item work challenge scale by Searle and Auton, (2015) was used. A sample item from the scale is “Over the past week, I saw work as a challenge that offered me the chance to do something new.”

Positive and Negative Affect: The short-version PANAS scale by Watson et al. (1988) was used to measure positive and negative, as described in the pilot study.

Organizational Citizenship Behaviour (OCB): The 16-item OCB scale by Lee and Allen (2002) was used, as described in the pilot study.

Counterproductive Work Behaviour (CWB): Eight “minor” deviance items were used from Robinson and Bennett’s (1995) scale, as described in the pilot study.

Task performance: The 7-item scale by Williams and Anderson (1991) was used, as described in the pilot study. Based on the data from the pilot study, I excluded one item from this scale in the main study, like I did for the pilot study.

Confirmatory Factor Analysis

Multi-level confirmatory factor analyses (MCFA) were performed using Mplus (Version 8.6; Muthén & Muthén, 2020) to confirm whether the three school stress appraisals are distinct constructs at both the within and between-person levels of analysis. All available data were used (number of observations = 1,171; number of participants = 302). These analyses were done separately for retrospective and prospective school stress appraisals. Other MCFAs were also performed to verify whether the three work stress appraisals are distinct constructs, whether positive affect and negative affect are distinct constructs, and whether school stress appraisals and work stress appraisals are distinct from each other. Confirmatory factor analyses were not performed on the OCB, task performance and CWB scales because past literature has already documented that they are distinct constructs. For example, a meta-analysis by Dalal et al. (2005) found that OCB and CWB have only a moderate negative relationship and that each has a distinct pattern of relations with its antecedents. Additionally, a meta-analysis by Hoffman et al. (2007) found that task performance and OCB are two distinct factors, albeit strongly related. Also, Sackett (2002) found that CWB had a weak negative relationship with task performance. Taken

together, these results seem to suggest that OCB, task performance and CWB are distinct constructs.

Starting with retrospective school stress appraisals, the default model treated school hindrance, threat and challenge appraisals as three separate factors at both levels of analysis. The model provided a very good fit to the data: $\chi^2 = 627.61$, $df = 175$, $p < .001$; CFI = .96; RMSEA = .05; within-level SRMR = .03, between-level SRMR = .04 (see Table 3 for all MCFA results, and Table 4 for factor loadings for the 3-factor retrospective school stress appraisal model). A two-factor model (i.e., with school hindrance and school threat appraisals on one factor and school challenge appraisal on the other factor) and a single-factor model were also analyzed. Neither the two-factor model, nor the single-factor model was an acceptable fit to the data at either level of analysis, and both were a significantly worse fit to the data than the three-factor model. The same process was followed for prospective school stress appraisals. The 3-factor model provided a very good fit to the data: $\chi^2 = 660.63$, $df = 176$, $p < .001$; CFI = .96; RMSEA = .05; within-level SRMR = .03, between-level SRMR = .03. The three-factor model was a better fit than the two-factor model, and the one-factor model, where no attainable solution was found, suggesting that the fit for the one-factor model was likely very poor (see Table 5 for the factor loadings for the 3-factor prospective school stress appraisal model). Overall, these results provide evidence that school hindrance, threat and challenge appraisals are distinct constructs at the within-person weekly level, when measured both prospectively and retrospectively.

MCFAs were also performed on retrospective work stress appraisals using the same process that was followed for retrospective school stress appraisals (recall that prospective work stress appraisals were not measured). The default three-factor model was a good fit to the data: $\chi^2 = 549.31$, $df = 175$, $p < .001$; CFI = .96; RMSEA = .04; within-level SRMR = .03, between-

Table 3*Main Study: Results of Multilevel Confirmatory Factor Analyses (MCFA)*

Construct	Chi-square (df)	RMSEA	CFI	SRMR within	SRMR between	ΔChi-Square (Δdf)
Retrospective School Stress Appraisals						
3-factor model with hindrance, threat and challenge separate	627.61*** (175)	.047	.959	.029	.035	n/a
2-factor model with hindrance and threat together; and challenge separate	2366.44*** (179)	.102	.802	.181	.161	1,738.83*** (4)
1-factor model with hindrance, threat and challenge together	4,430.12*** (181)	.142	.616	.209	.241	3,802.51*** (6)
Prospective School Stress Appraisals						
3-factor model with hindrance, threat, and challenge separate	660.63*** (176)	.049	.961	.028	.030	n/a
2-factor model with hindrance and threat together; and challenge separate	2,210.67*** (180)	.098	.837	.162	.175	1,550.04*** (4)
1-factor model with hindrance, threat & challenge together	No attainable solution found					

Notes: Number of observations (retrospective variables) = 1,170 or 1,171 depending on the MCFA. Number of participants (retrospective variables) = 302. Number of observations (prospective variables) = 1,169. Number of participants (prospective variables) = 302. In all cases, the ΔChi-Square and (Δdf) values are compared to the default 3-factor models or 6-factor models.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3 cont'd*Main Study: Results of Multilevel Confirmatory Factor Analyses (MCFA)*

Construct	Chi-square (df)	RMSEA	CFI	SRMR within	SRMR between	ΔChi-Square (Δdf)
Work Stress Appraisals						
3-factor model with hindrance, threat, and challenge separate	549.31*** (175)	.043	.960	.034	.065	n/a
2-factor model with hindrance and threat together; and challenge separate	1862.97*** (179)	.090	.822	.147	.184	1,313.66*** (4)
1-factor model with hindrance, threat and challenge together	4,564.51*** (181)	.144	.537	.193	.256	4,015.20*** (6)
Positive Affect and Negative Affect						
2-factor model with positive affect and negative affect separate	1,280.52*** (338)	.049	.862	.044	.095	n/a
1- factor model with positive affect and negative affect together	2,734.71*** (340)	.078	.649	.171	.267	1,454.19*** (2)

Notes: Number of observations (retrospective variables) = 1,170 or 1,171 depending on the MCFA. Number of participants (retrospective variables) = 302. Number of observations (prospective variables) = 1,169. Number of participants (prospective variables) = 302. In all cases, the ΔChi-Square and (Δdf) values are compared to the default 3-factor models or 6-factor models.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3 cont'd*Main Study: Results of Multilevel Confirmatory Factor Analyses (MCFA)*

Construct	Chi-square (df)	RMSEA	CFI	SRMR within	SRMR between	ΔChi-Square (Δdf)
Work and School Stress Appraisals						
6-factor model with work hindrance, work threat, work challenge, school hindrance, school threat, school challenge separate	1,809.78*** (782)	.034	.951	.031	.052	n/a
3-factor model with work and school hindrance together; work and school threat together; work and school challenge together	7,189.21*** (806)	.082	.672	.240	.243	5,379.43*** (24)
1-factor model with work hindrance, work threat, work challenge, school hindrance, school threat, and school challenge together	12,961.15*** (811)	.118	.347	.249	.268	11,151.37*** (29)

Notes: Number of observations (retrospective variables) = 1,170 or 1,171 depending on the MCFA. Number of participants (retrospective variables) = 302. Number of observations (prospective variables) = 1,169; number of participants (prospective variables) = 302. In all cases, the ΔChi-Square and (Δdf) values are compared to the default 3-factor models or 6-factor models.

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 4

Main Study: Items and Factor Loadings for Retrospective School Stress Appraisals (Concurrent Design)

<i>Retrospective School Stress Appraisals</i>	<i>Factor Loadings</i>	
	<i>Within Level</i>	<i>Between Level</i>
<i>Over the last week school:</i>		
1. Hampered any achievements I may want to accomplish	.79***	.99***
2. Restricted my capabilities at school	.83***	.99**
3. Limited how well I could do	.84***	.97***
4. Prevented me from mastering difficult aspects of school	.79***	1.00***
<i>Over the last week, I thought that:</i>		
1. I may not be able to follow the lessons	.59***	.95***
2. School would be too much for me	.67***	.92***
3. I may not be smart enough for school	.53***	.93***
4. I may not know enough for school	.58***	.95***
5. The demands may be too much for me	.68***	.93***
6. School would be too difficult for me	.73***	.99***
7. New subjects may be too difficult for me	.68***	.97***
<i>Over the last week, school:</i>		
1. Offered the chance to learn a lot	.79***	.99***
2. Offered a learning experience	.83***	.98***
3. Offered me the chance to do something new	.84***	.93***
4. Kept me focused on doing well	.79***	.89***

Notes: Number of observations = 1,170. Number of participants = 302. Factor loadings are standardized estimates from a MCFA in which school appraisal items were loaded onto three separate factors (at both levels). *p < .05, ** p < .01, *** *p < .001.

Table 5

Main Study: Items and Factor Loadings for Prospective School Stress Appraisals (Lagged Design)

<i>Prospective School Stress Appraisals</i>	<i>Factor Loadings</i>	
	<i>Within Level</i>	<i>Between Level</i>
<i>For upcoming week, I think that school will:</i>		
1. Hamper any achievements I may want to accomplish	.80***	.99***
2. Restrict my capabilities at school	.85***	.99***
3. Limit how well I could do	.87***	.99***
4. Prevent me from mastering difficult aspects of school	.84***	.99***
<i>For upcoming week, I think that I:</i>		
1. I may not be able to follow the lessons	.63***	.93***
2. School will be too much for me	.67***	.93***
3. I may not be smart enough for school	.66***	.92***
4. I may not know enough for school	.70***	.94***
5. The demands may be too much for me	.63***	.92***
6. School will be too difficult for me	.73***	1.00***
7. New subjects may be too difficult for me	.66***	.96***
<i>For upcoming week, school will:</i>		
1. Offer the chance to learn a lot	.82***	.98***
2. Offer a learning experience	.82***	1.00***
3. Offer me the chance to do something new	.69***	.95***
4. Keep me focused on doing well	.61***	.84***

Notes: Number of observations = 1,169. Number of participants = 302. Factor loadings are standardized estimates from a MCFA in which school appraisal items were loaded onto three separate factors (at both levels). * $p < .05$, ** $p < .01$, *** $p < .001$.

level SRMR = .07. It was also a better fit than the two-factor model (i.e., with work hindrance and threat appraisals on one factor and work challenge appraisal on the other factor) and the one-factor model (see Table 3). Overall, these results provide evidence that work hindrance, threat and challenge appraisals are distinct constructs at the within-person weekly level.

MCFAs were also performed on retrospective work and school stress appraisals together to ensure that they were distinct from one another. The default model treated work hindrance, threat and challenge appraisals, as well as school hindrance, threat and challenge appraisals as six distinct constructs. This six-factor model provided an acceptable fit to the data: $\chi^2 = 1,809.78$, $df = 782$, $p < .001$; CFI = .95; RMSEA = .03; within-level SRMR = .03, between-level SRMR = .05. Several models were compared to this default model (see Table 3). First, a three-factor model was examined with work and school hindrance appraisal items loading on one factor, work and school threat appraisal items loading on a second factor, and work and school challenge appraisal items loading on the third factor. This three-factor model was not an acceptable fit to the data at either level of analysis and was a significantly worse fit to the data than the six-factor model. A single-factor model was also examined with all work and school stress appraisal items loading on a single factor at both levels of analysis. This model was a poor fit to the data, and yielded a worse fit than the 3-factor model. Overall, these results provide evidence that work and school stress appraisals are distinct constructs at the within-person weekly level.

Finally, an MCFA was performed on positive affect and negative affect. The default model treated these two constructs as separate factors at both levels of analysis. The fit of this default model was acceptable based on the RMSEA and the SRMR (at the within level), but less than ideal based on the CFI and SRMR (at the between level): $\chi^2 = 1,280.52$, $df = 338$, $p < .001$; CFI = .86; RMSEA = .05; within-level SRMR = .03, between-level SRMR = .10. The fit of the

two-factor model was, however, significantly better than the fit of the one-factor model with positive and negative affect collapsed together (see Table 3). Overall, these results provided adequate evidence that positive and negative affect are distinct at the within-person weekly level.

Variance Partitioning

All variables were examined to verify whether they exhibited significant weekly variation at the within-person level in order to warrant analyses at that level of analysis. The variance partitioning was done both for the full sample ($N = 302$) that was used in the concurrent design, and the smaller sample that was used in the lagged design ($N = 265$). The lagged design had a smaller sample because it required participants to answer all four surveys, and consequently did not include the participants who answered three surveys. In the case of the smaller sample (i.e., the lagged design), the variance for prospective school stress appraisals was analyzed using data from surveys 1, 2 and 3, whereas the variance for the intervening variables and DVs were analyzed using data from surveys 2, 3 and 4 (recall there was a lag of one week between measuring prospective school stress appraisals and the intervening variables and DVs; this explains the different subset of surveys used). The estimation was done in Mplus using intercept-only multilevel models (Hofmann, 1997; Mplus Version 8.6; Muthén & Muthén, 2020). Starting with the full sample for the concurrent study design, all variables showed significant variance at the within-individual level (see Table 6 for results). Similarly, for the smaller sample, in the lagged study design, all variables also showed significant variance at the within-individual level (see Table 7). These results confirmed that there was significant variation within individuals in all study variables, and supported proceeding to tests of the within-person hypotheses and research questions.

Table 6*Main Study: Variance Partitioning for Variables Used in Concurrent Design*

Variable	Within-Individual Variance (e^2)		Between-Individual Variance (r^2)		Percentage of Within-Individual Variance
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	
School hindrance appraisal	.502**	.03	.660**	.05	43.20%
School threat appraisal	.297**	.02	.940**	.07	24.01%
School challenge appraisal	.301**	.03	.476**	.05	38.74%
Work hindrance appraisal	.473**	.03	.387**	.04	55.00%
Work threat appraisal	.255**	.02	.431**	.04	37.17%
Work challenge appraisal	.497**	.04	.802**	.06	38.17%
Positive Affect	.182**	.01	.300**	.03	37.76%
Negative Affect	.209**	.01	.389**	.04	34.95%
CWB	.155**	.02	.366**	.04	29.75%
Task performance	.192**	.02	.222**	.02	46.38%
OCB	.216**	.01	.466**	.04	31.67%

Notes: Number of observations = 1,166 to 1,171 depending on the variable. Number of participants = 302. The percentage of variance within individuals is calculated as $e^2/(e^2 + r^2)$.

* $p < .05$, ** $p < .001$.

Table 7*Main Study: Variance Partitioning for Variables Used in Lagged Design*

Variable	Within-Individual Variance (e^2)		Between-Individual Variance (r^2)		Percentage of Within-Individual Variance
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	
School hindrance appraisal	.525**	.04	.636**	.06	45.22%
School threat appraisal	.303**	.03	.884**	.08	25.53%
School challenge appraisal	.279**	.03	.421**	.05	39.86%
Positive Affect	.175**	.01	.341**	.03	33.91%
Negative Affect	.219**	.02	.387**	.04	36.14%
CWB	.133**	.02	.382**	.04	25.83%
Task performance	.179**	.03	.255**	.02	41.24%
OCB	.194**	.02	.496**	.04	28.12%

Notes: Number of observations for each variable = 791 to 795 depending on the variable. Number of participants = 265. The percentage of variance within individuals is calculated as $e^2/(e^2 + r^2)$. * $p < .05$, ** $p < .001$. Because prospective work appraisals were not measured, they do not appear in this table.

Comparisons of Participants who Completed 3 vs. 4 Surveys

In order to determine if there were any differences on key variables between those participants who completed 3 surveys and those who completed 4 surveys, a multivariate analysis of variance (MANOVA) was conducted. All of the variables that were included in the hypothesis tests and supplementary analyses (i.e., all school stress appraisals, all work stress appraisals positive affect, negative affect, OCB, task performance and CWB) were included in the MANOVA. The MANOVA indicated that there were some differences between the two groups (Pillai's Trace = .041, $p < .001$). Compared to participants who completed three surveys, those who completed four surveys had a higher mean on prospective school challenge appraisal and task performance and a lower mean on work hindrance appraisal, work threat appraisal, negative affect and OCB (see Table 8). Taken together, these few differences did not appear to be a cause for concern.

RESULTS

Analytic Approach

Hypothesis tests and examination of the research questions were done using Mplus by estimating two-level models with random coefficients, and with all level 1 variables centered around each individual's mean for that variable. Multilevel modeling was essential because the data included multiple weekly observations nested within individuals (Raudenbush & Bryk, 2002). Centering all variables around each individual's mean eliminated all between-person variance from the variables, thus controlling for all individual differences that could have affected the variables of interest of this study, and allowed for testing of the relations purely at the within-person level (Enders & Tofighi, 2007).

To test the core hypotheses regarding indirect effects, analyses were done using Mplus by following the path-analytic method discussed by Hayes (2013), and the within-individual

Table 8

Main Study: Comparisons on key variables of participants who answered three surveys versus four surveys.

Variable	Mean for 3 Surveys	Mean for 4 Surveys
School hindrance appraisal (retrospective)	2.54	2.40
School threat appraisal (retrospective)	2.52	2.45
School challenge appraisals (retrospective)	3.70	3.92
School hindrance appraisal (prospective)	2.61	2.42
School threat appraisal (prospective)	2.35	2.27
School challenge appraisal (prospective)	3.56 ^b	3.88 ^b
Work hindrance appraisal (retrospective)	2.54 ^a	2.40 ^a
Work threat appraisal (retrospective)	2.52 ^a	2.45 ^a
Work challenge appraisal (retrospective)	3.78	3.92
Positive Affect	2.41	2.32
Negative Affect	1.63 ^a	1.46 ^a
Task Performance	3.10 ^b	3.32 ^b
CWB	1.04 ^a	.87 ^a
OCB	2.27 ^b	2.04 ^b

Notes: Number of participants who answered 3 surveys = 37; number of participants who answered 4 surveys = 265. Means with superscripts of a are significantly different from one another at * $p < .05$, and means with superscripts of b are significantly different from one another at ** $p < .01$.

mediation analysis procedures proposed by Bolger and Laurenceau (2013). Confidence intervals for the indirect effects were derived using Monte Carlo simulations with 20,000 replications (Preacher & Selig, 2012). In accordance with Figures 1, 2 and 3, the effect of each school stress appraisal on OCB was examined separately from the other appraisals, and the hypotheses were tested with both positive and negative affect included in each model. This allowed me to estimate the combined effects of the two affective pathways under consideration. I chose not to include all three school stress appraisals in a single model because I was concerned about partialling out their shared variance, which could potentially have eliminated the effects that I want to test. Further, when adding work stress appraisals as controls, there would have been six appraisals in the model, which again would mean partialling out a lot of shared, but potentially meaningful, variance. I followed the same approach described above for the supplementary analyses when investigating the indirect effects of school stress appraisals on task performance and CWB via affect.

Correlations at the within-person level appear in Table 9. Descriptive statistics, correlations, and Cronbach's alphas at the between-person level appear in Table 10.

In what follows, results are reported first for the three research questions concerning the total effects between school stress appraisals and OCB. Following that, the hypotheses related to the indirect effects of school stress appraisals on OCB via affect are presented. I decided to present the research questions before the indirect effects (despite the fact that the indirect effects appeared before the research questions in the hypothesis development section), because I followed a traditional analytic approach of testing the simple overall/total effects models first. Subsequent to the presentation of the main analyses, additional results are reported in the supplementary results section. These results pertain to how school stress appraisals impact task

Table 9*Main Study: Within-Person Correlations*

<i>Variable</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
<i>1. School hindrance (retrospective)</i>										
<i>2. School threat (retrospective)</i>	.24**									
<i>3. School challenge (retrospective)</i>	-.09**	-.010								
<i>4. School hindrance (prospective)</i>	.41**	.22**	-.06							
<i>5. School threat (prospective)</i>	.25**	.49**	-.03	.41**						
<i>6. School challenge (prospective)</i>	-.02	.003	.31**	-.02	-.01					
<i>7. Work hindrance (retrospective)</i>	.19**	.10**	.04	.12**	.06	.04				
<i>8. Work threat (retrospective)</i>	.11**	.24**	.02	.09**	.21**	-.001	.29**			
<i>9. Work challenge (retrospective)</i>	-.03	-.07*	.09**	-.02	-.01	.12**	-.03	.02		
<i>10. Positive Affect</i>	-.09**	-.09**	.25**	-.12**	-.13**	.18**	-.05	-.04	.19**	
<i>11. Negative Affect</i>	.15**	.27**	.25**	.17**	.27**	-.08**	.04	.17**	.000	-.07*
<i>12. Task performance</i>	.02	.03	.07*	.01	.03	.14**	-.04	-.10**	.17**	.11**
<i>13. CWB</i>	.02	-.01	-.03	-.02	-.01	-.05	.15**	.16**	-.04	.04
<i>14. OCB</i>	-.06*	-.06	-.06	-.03	-.06	.07*	.07*	.08**	.29**	.19**

Table 9 cont'd

<i>Variable</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>
<i>11. Negative Affect</i>				
<i>12. Task performance</i>	<i>-.07*</i>			
<i>13. CWB</i>	<i>.10**</i>	<i>-.13**</i>		
<i>14. OCB</i>	<i>.01</i>	<i>.08**</i>	<i>.06*</i>	

Notes: Number of observations = 1,166 to 1,171 depending on the variable. Number of participants = 302. Cronbach's alphas are shown on the diagonal in bold. There are no means or standard deviations between variables were mean-centered. School stress appraisals (both retrospective and prospective) as well as work appraisals are measured on a scale from 0 to 5. CWB = counterproductive work behaviour, OCB = organizational citizenship behaviour. Positive affect, negative affect, task performance, CWB and OCB are measured on a scale from 0 to 4. * $p < .05$; ** $p < .01$, correlations above $|.08|$ are significant at $p < .001$.

Table 10*Main Study: Descriptive Statistics and Between-Person Correlations*

<i>Variable</i>	<i>Mean</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
<i>1. School hindrance (retrospective)</i>	2.41	.89	.95									
<i>2. School threat (retrospective)</i>	2.46	1.01	.71**	.95								
<i>3. School challenge (retrospective)</i>	3.90	.75	-.39**	-.22**	.89							
<i>4. School hindrance (prospective)</i>	2.44	.89	.88**	.71**	-.28**	.95						
<i>5. School threat (prospective)</i>	2.28	1.00	.71**	.94**	-.40**	.74**	.95					
<i>6. School challenge (prospective)</i>	3.83	.76	-.39**	-.22**	.39**	-.39**	-.26**	.91				
<i>7. Work hindrance (retrospective)</i>	2.09	.89	.49**	.38**	-.05	.50**	.38**	-.05	.91			
<i>8. Work threat (retrospective)</i>	1.81	.71	.48**	.58**	-.07	.50**	.57**	-.10	.61**	.90		
<i>9. Work challenge (retrospective)</i>	3.30	.97	-.03	-.05	.24**	-.04	-.05	.26**	.06	.22**	.92	
<i>10. Positive Affect</i>	2.33	.59	-.29**	-.41**	.41**	-.27**	-.40**	.39**	-.06	-.14*	.41**	.87
<i>11. Negative Affect</i>	1.48	.67	.54**	.58**	-.18**	.57**	.59**	-.18**	.40**	.45**	-.13*	-.29**
<i>12. Task Performance</i>	3.30	.52	-.24**	-.20**	.20**	-.25**	-.23**	.24**	-.49**	-.48**	.01	.11
<i>13. CWB</i>	.89	.64	.19**	.16**	-.04	.19**	.17**	-.08	.38**	.30**	-.19**	-.07
<i>14. OCB</i>	2.06	.72	-.01	-.08	.09	-.01	-.06	.10	.04	.01	.54**	.48**

Table 10 cont'd

<i>Variable</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>
<i>11. Negative Affect</i>	.88			
<i>12. Task performance</i>	-.28**	.80		
<i>13. CWB</i>	.29**	-.38**	.84	
<i>14. OCB</i>	-.06	-.004	-.04	.91

Notes: Number of observations = 1,166 to 1,171 depending on the variable. Number of participants = 302. Cronbach's alphas are shown on the diagonal in bold (alphas were calculated for each survey wave and then averaged over the four survey waves). School stress appraisals (both retrospective and prospective) as well as retrospective work appraisals are measured on a scale from 0 to 5. CWB = counterproductive work behaviour, OCB = organizational citizenship behaviour. Positive affect, negative affect, task performance, CWB and OCB are measured on a scale from 0 to 4. * $p < .05$; ** $p < .01$, correlations above $|.16|$ are significant at $p < .001$.

performance and CWB, as well as how work stress appraisals impact OCB, task performance and CWB.

Research Questions and Hypotheses: Relations between School Stress Appraisals and OCB

Total effects of school stress appraisals on OCB. Research question 1 asked: At the within-person level, what is the total effect of school hindrance appraisal on OCB? As shown in Table 11, the estimate of the total effect of school hindrance appraisal on OCB was non-significant in the analysis for the concurrent design, both with and without control for work hindrance appraisal (estimate = $-.06$, $p = .054$ and estimate = $-.04$, $p = .18$ respectively), but was negative and significant in the analysis for the lagged design (estimate = $-.07$, $p = .004$). Research question 2 asked: At the within-person level, what is the total effect of school threat appraisal on OCB? As shown in Table 11, the estimate of the total effect of school threat appraisal on OCB was non-significant for the concurrent design, both with and without control for work threat appraisal (estimate = $-.02$, $p = .65$ and estimate = $-.00$, $p = .96$ respectively) and non-significant in the lagged design (estimate = $.00$, $p = .99$). Research question 3 asked: At the within-person level, what is the total effect of school challenge appraisal on OCB? As shown in Table 11, the estimate of the total effect of school challenge appraisal and OCB was non-significant for the concurrent design, both with and without control for work challenge appraisal (estimate = $.01$, $p = .73$ and estimate = $.05$, $p = .15$ respectively) and non-significant in the lagged design (estimate = $.05$, $p = .23$).

Indirect effects of school hindrance appraisal on OCB. Hypothesis 1a predicted that school hindrance appraisal would have a negative indirect effect on workplace OCB within-persons via negative affect, whereas Hypothesis 1b predicted that school hindrance appraisal would have a positive indirect effect on workplace OCB within-persons via negative affect.

Table 11

Main Study: Within-Individual Path-Analytic Regression Results for Total Effects of School Stress Appraisals on OCB

Type of Appraisal	OCB		OCB		OCB	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
	Concurrent Design		Concurrent Design (with control)		Lagged Design	
School hindrance	-.04	.03	-.06	.03	-.07**	.03
Work hindrance			.09***	.03		
School threat	-.00	.03	-.02	.03	.00	.04
Work threat			.08*	.04		
School challenge	.05	.03	.01	.03	.05	.04
Work challenge			.19***	.03		

Notes: Number of observations (concurrent design) = 1,168. Number of participants (concurrent design) = 302. Number of observations (lagged design) = 793. Number of participants (lagged design) = 265. The results are based on estimating multilevel models with random coefficients, where all level 1 variables were centered around each individual's mean for that variable. Note that separate regression analyses were performed for the concurrent and lagged designs, and for each type of school appraisal. * $p < .05$, ** $p < .01$, *** $p < .001$.

Hypotheses 7a and 7b proposed that the two latter propositions would hold after controlling for work hindrance appraisal. As shown in Tables 12 and 13, the indirect effect of school hindrance appraisal on workplace OCB via negative affect was non-significant in the concurrent design for both the analyses with and without control for work hindrance appraisal (estimates = .006, 95% CI: [-.002] to [.016] in both cases), as well as non-significant for the lagged design (estimate = .001, 95% CI [-.023] to [.029]). Thus, Hypotheses 1a, 1b, 7a and 7b were not supported. Of note, the path from school hindrance appraisal to negative affect was positive and significant for the concurrent design with and without controls, but was non-significant for the lagged design. Further, the path from negative affect to OCB was non-significant for the concurrent design (with and without controls) and the lagged design.

Hypothesis 2 predicted that school hindrance appraisal would have a negative indirect effect on workplace OCB within-persons via positive affect. Hypothesis 8 proposed that this result would hold after controlling for work hindrance appraisal. As shown in Tables 12 and 13, there was a negative indirect effect of school hindrance appraisal on workplace OCB via positive affect in the concurrent design without control for work hindrance appraisal (estimate = -.006, 95% CI: [-.014] to [-.0001]), but the effect was non-significant when controlling for work hindrance appraisal (estimate = -.005, 95% CI: [-.013] to [.000]). Furthermore, the indirect effect of school hindrance appraisal on workplace OCB via positive affect was non-significant for the lagged design (estimate = .005, 95% CI [-.006] to [.021]). Thus, Hypothesis 2 was only partially supported and Hypothesis 8 was not supported. Of note, the path from school hindrance appraisal to positive affect was negative and significant for the concurrent design with and without controls, but unrelated to positive affect in the lagged design. Further, the path from positive affect to OCB was positive and significant for the concurrent design with and without controls, but unrelated to OCB for the lagged design.

Table 12

Main Study: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Hindrance Stress Appraisal on OCB (Concurrent Design)

School hindrance appraisal	Positive Affect		Negative Affect		OCB	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School hindrance appraisal	-.05*	.02	.10***	.03	-.04	.03
Positive affect					.11*	.04
Negative affect					.06	.04
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School hindrance appraisal → OCB (via positive affect)			-.006		-.014	-.0001
School hindrance appraisal → OCB (via negative affect)			.006		-.002	.016
<i>Controlling for work hindrance appraisal</i>						
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
School hindrance appraisal	-.05*	.02	.10***	.03	-.05 [†]	.03
Work hindrance appraisal	-.01	.02	.01	.03	.10***	.03
Positive affect					.10*	.04
Negative affect					.06	.04
<i>Indirect effect-controlling for work hindrance appraisal</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School hindrance → OCB (via positive affect)			-.005		-.013	.000
School hindrance → OCB (via negative affect)			.006		-.002	.016
Work hindrance → OCB (via positive affect)			-.001		-.007	.004
Work hindrance → OCB (via negative affect)			.000		-.003	.004

Notes: Number of observations = 1,170. Number of participants = 302. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals based on 20,000 replications. [†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 13

Main Study: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Hindrance Stress Appraisal on OCB (Lagged Design)

School hindrance appraisal	Positive Affect		Negative Affect		OCB	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School hindrance appraisal	.03	.03	-.01	.03	-.09	.06
Positive affect					.17	.13
Negative affect					-.29	.29
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School hindrance appraisal → OCB (via positive affect)			.005		-.006	.021
School hindrance appraisal → OCB (via negative affect)			.001		-.023	.029

Notes: Number of observations = 795. Number of participants = 265. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals based on 20,000 replications.

Indirect effects of school threat appraisal on OCB. Hypothesis 3a predicted that school threat appraisal would have a negative indirect effect on workplace OCB within-persons through negative affect, whereas Hypothesis 3b predicted that school threat appraisal would have a positive indirect effect on workplace OCB within-persons through negative affect. Hypotheses 9a and 9b predicted that the two latter propositions would hold when controlling for work threat appraisal. As shown in Tables 14 and 15, the indirect effect of school threat appraisal on workplace OCB via negative affect was non-significant in the concurrent design for the analyses both with and without control for work threat appraisal (estimate = .011, 95% CI: [-.004] to [.028], estimate = .012, 95% CI: [-.004] to [.029], respectively), as well as non-significant for the lagged design (estimate = .000, 95% CI [-.006] to [.006]). Thus, Hypotheses 3a, 3b, 9a and 9b were not supported. Of note, the path from school threat appraisal to negative affect was positive and significant for the concurrent design (but only without control for work threat appraisal), and was unrelated to negative affect for the lagged design. Further, the path from negative affect to OCB was not significant for the concurrent design (with and without controls) and for the lagged design.

Hypothesis 4 predicted that school threat appraisal would have a negative indirect effect on workplace OCBs within-persons via positive affect. Hypothesis 10 proposed that this result would hold after controlling for work threat appraisal. As shown in Tables 14 and 15, there was a negative indirect effect of school threat appraisal on workplace OCB via positive affect in the concurrent design without control for work threat appraisal (estimate = -.008, 95% CI: [-.021] to [-.00002]), but the effect was non-significant when controlling for work threat appraisal (estimates = -.010, 95% CI: [-.025] to [.001]). For the lagged design, the indirect effect of school

Table 14

Main Study: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Threat Appraisal on OCB (Concurrent Design)

School threat appraisal	Positive Affect		Negative Affect		OCB	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School threat appraisal	-.06*	.03	.19***	.03	-.02	.03
Positive affect					.13**	.05
Negative affect					.06	.04
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School threat appraisal → OCB (via positive affect)			-.008		-.021	-.00002
School threat appraisal → OCB (via negative affect)			.012		-.004	.029
<i>Controlling for work challenge appraisal</i>						
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
School threat appraisal	-.06 [†]	.03	.06	.05	-.03	.03
Work threat appraisal	-.01	.04	.12***	.04	.10	.04
Positive affect					.17***	.04
Negative affect					.06	.05
<i>Indirect effect-controlling for work threat appraisal</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School threat → OCB (via positive affect)			-.010		-.025	.001
School threat → OCB (via negative affect)			.011		-.004	.028
Work threat → OCB (via positive affect)			-.002		-.014	.011
Work threat → OCB (via negative affect)			.007		-.003	.021

Notes: Number of observations = 1,170. Number of participants = 302. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals based on 20,000 replications. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 15

Main Study: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Threat Stress Appraisal on OCB (Lagged Design)

School threat appraisal	Positive Affect		Negative Affect		OCB	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School threat appraisal	.03	.04	.000	.04	-.02	.05
Positive affect					.08	.06
Negative affect					.03	.07
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School threat appraisal → OCB (via positive affect)			.003		-.004	.013
School threat appraisal → OCB (via negative affect)			.000		-.006	.006

Notes: Number of observations = 795. Number of participants = 265. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals based on 20,000 replications. * $p < .05$, ** $p < .01$, *** $p < .001$.

threat appraisal on workplace OCB via positive affect was non-significant (estimate = .003, 95% CI [-.004] to [.013]). Thus, Hypothesis 2 was only partially supported and Hypothesis 8 was not supported. Of note, the path from school threat appraisal to positive affect was negative and significant for the concurrent design (only without control for work threat appraisal), and unrelated to positive affect for the lagged design. Further, the path from positive affect to OCB was positive and significant for the concurrent design both with and without controls, but unrelated to OCB for the lagged design.

Indirect effects of school challenge appraisal on OCB. Hypothesis 5 predicted that school challenge appraisal would have a positive indirect effect on workplace OCB within-persons through positive affect. Hypothesis 11 predicted that this result would hold when controlling for work challenge appraisal. As shown in Tables 16 and 17, there was a positive indirect effect of school challenge appraisal on workplace OCB via positive affect in the concurrent design both with and without control for work challenge appraisal (estimate = .025, 95% CI: [.006] to [.046] and estimate = .038, 95% CI: [.019] to [.061], respectively). For the lagged design, the indirect effect of school challenge appraisal on workplace OCB via positive affect was non-significant (estimate = .004, 95% CI [-.019] to [.031]). Thus, Hypothesis 5 was only partially supported and Hypothesis 11 was supported. Of note, the path from school challenge appraisal to positive affect was positive and significant for the concurrent design with and without controls, and unrelated to positive affect for the lagged design. Further, the path from positive affect to OCB was positive and significant for the concurrent design with and without controls, but unrelated to OCB for the lagged design.

Table 16

Main Study: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Challenge Stress Appraisal on OCB (Concurrent Design)

School challenge appraisal	Positive Affect		Negative Affect		OCB	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School challenge appraisal	.21***	.03	-.06*	.03	-.01	.03
Positive affect					.19***	.05
Negative affect					.04	.04
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School challenge appraisal → OCB (via positive affect)			.038		.019	.061
School challenge appraisal → OCB (via negative affect)			-.002		-.009	.003
<i>Controlling for work challenge appraisal</i>						
School challenge appraisal	.20***	.03	-.07*	.03	-.04	.04
Work challenge appraisal	.11***	.02	.003	.03	.16***	.03
Positive affect					.12**	.05
Negative affect					.03	.04
<i>Indirect effect-controlling for work challenge appraisal</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School challenge → OCB (via positive affect)			.025		.006	.046
School challenge → OCB (via negative affect)			-.002		-.009	.004
Work challenge → OCB (via positive affect)			.013		.005	.021
Work challenge → OCB (via negative affect)			.000		-.003	.003

Notes: Number of observations = 1,170. Number of participants = 302. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals based on 20,000 replications. *p < .05, ** p < .01, *** p < .001.

Table 17

Main Study: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Challenge Appraisal on OCB (Lagged Design)

School challenge appraisal	Positive Affect		Negative Affect		OCB	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School challenge appraisal	.01	.04	-.01	.04	.03	.10
Positive affect					.26	.17
Negative affect					-.09	.17
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School challenge appraisal → OCB (via positive affect)			.004		-.019	.031
School challenge appraisal → OCB (via negative affect)			.001		-.015	.020

Notes: Number of observations = 795. Number of participants = 265. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals based on 20,000 replications.

Hypothesis 6a predicted that school challenge appraisal would have a negative indirect effect on workplace OCB within-persons via negative affect, whereas Hypothesis 6b postulated that school challenge appraisal would have a positive indirect effect on workplace OCB within-persons via negative affect. Hypotheses 12a and 12b predicted that the latter two propositions would hold after controlling for work challenge appraisal. As shown in Tables 16 and 17, the indirect effect of school challenge appraisal on OCB via negative affect was non-significant, both with and without control for work challenge appraisal (estimate = -.002, 95% CI: [-.009] to [.004]) and estimate = -.002, 95% CI: [-.009] to [.003], respectively). For the lagged design, the indirect effect of school challenge appraisal on workplace OCB via negative affect was also non-significant (estimate = .001, 95% CI [-.015] to [.020]). Thus, Hypothesis 6a, 6b, 12a and 12b were not supported. Of note, the path from school challenge appraisal to negative affect was negative and significant for the concurrent design with and without controls, and unrelated to positive affect for the lagged design. Further, the path from positive affect to OCB was positive in the concurrent design with and without controls, but unrelated to OCB in the lagged design.

For a summary of the results related to the research questions and hypothesis tests from the main study, please refer Table 18.

Relations between Work Stress Appraisals and OCB

Although specific hypotheses for work stress appraisals were not put forth, it is worthwhile to examine the effects of work stress appraisals on OCB that were revealed through the previous analyses with school stress appraisals that included controls for work stress appraisals. Accordingly, the effect of each type of work stress appraisal on OCB is the observed effect when controlling for the school stress appraisal that matched the associated work stress appraisal. I also calculated the effects of work stress appraisals on OCB without controlling for

Table 18*Main Study: Summary Table of Results for Relations of School Stress Appraisals, Affect, and OCB*

Hypothesis or Research Question	Relation	Concurrent Design	Concurrent Design (with controls)	Lagged Design
RQ1	School hindrance and OCB	ns	ns	negative
RQ2	School threat and OCB	ns	ns	ns
RQ3	School challenge and OCB	ns	ns	ns
IVs to Intervening Variables	School hindrance and PA	negative	negative	ns
	School threat and PA	negative	ns	ns
	School challenge and PA	positive	positive	ns
	School hindrance and NA	positive	positive	ns
	School threat and NA	positive	ns	ns
	School challenge and NA	negative	negative	ns
Intervening Variables to DV	PA and OCB	positive	ns	ns
	NA and OCB	ns	ns	ns
H1a/H1b	Hindrance → NA → OCB	ns	ns	ns
H2	Hindrance → PA → OCB	negative	ns	ns
H3a/H3b	Threat → NA → OCB	ns	ns	ns
H4	Threat → PA → OCB	negative	ns	ns
H5	Challenge → PA → OCB	positive	positive	ns
H6a/H6b	Challenge → NA → OCB	ns	ns	ns

Notes: Number of observations for RQs (concurrent design) = 1,168. Number of observations for effects other than RQs (concurrent design) = 1,170. Number of participants (concurrent design) = 302. Number of observations for RQs (lagged design) = 793. Number of observations for effects other than RQs (lagged design) = 795. Number of participants (lagged design) = 265; Information pertaining to the rows in the table labelled as RQ reflect total effects. Information pertaining to rows labelled as “IVs to Intervening Variables” and “Intervening Variables to DVs” was drawn from the analyses involving tests of indirect effects and they do not reflect total effects. ns: not significant.

school stress appraisals, and the results followed the same pattern. Accordingly, I review the results when controlling for school stress appraisals only, which formed part of the main analyses previously described. It is also worth recalling that these analyses were performed only for the concurrent design, because work stress appraisals were not measured prospectively.

Total effects of work stress appraisals on OCB. As shown in Table 11, the total effects of work hindrance, work threat and work challenge appraisals on OCB at work were all positive and significant (estimate = .09, $p < .001$, estimate = .08, $p = .04$, and estimate = .19, $p < .001$, respectively).

Indirect effects of work stress appraisals on OCB. As shown in Table 16, work challenge appraisal had a significant positive indirect on OCB via positive affect (estimate = .13, 95% CI: [.006] to [.046]). All other indirect effects of work stress appraisals on OCB were non-significant.

For a summary of the complete results for the effects of work stress appraisals on OCB, please refer to Table 19.

Supplementary Analyses for the Effects of School Stress Appraisals on Task Performance and CWB

Additional analyses were conducted to explore how school stress appraisals impact other forms of job performance besides OCB, namely task performance and CWB. Although I did not put forth specific hypotheses for these outcomes, the results of these analyses can be used, in part, as a means of comparison to existing research on how school impacts work (e.g., Calderwood & Gabriel, 2017). Because these results are not integral to the hypothesis tests, the relevant tables appear in the appendices to the thesis.

Total effects of school stress appraisals on task performance and CWB. As shown in Table B1 of Appendix B, school hindrance appraisal was negatively related to task performance,

Table 19*Main Study: Summary Table of Results for Relations of Work Stress Appraisals, Affect, and OCB*

	Relation	
Total Effects	Work hindrance and OCB	positive
	Work threat and OCB	positive
	Work challenge and OCB	positive
IVs to Intervening Variables	Work hindrance and PA	ns
	Work threat and PA	ns
	Work challenge and PA	positive
	Work hindrance and NA	ns
	Work threat and NA	positive
	Work challenge and NA	ns
Intervening Variables to DV	PA and OCB	ns
	NA and OCB	ns
Indirect Effects	Hindrance → NA → OCB	ns
	Hindrance → PA → OCB	ns
	Threat → NA → OCB	ns
	Threat → PA → OCB	ns
	Challenge → PA → OCB	positive
	Challenge → NA → OCB	ns

Notes: Number of observations for total effects = 1,170. Number of observations for effects other than total effects = 1,168. Number of participants: 302. Information pertaining to rows labelled as “IVs to Intervening Variables” and “Intervening Variables to DVs” was drawn from the analyses involving tests of indirect effects and they do not reflect total effects. ns = not significant.

but only in the lagged design (estimate = $-.06$, $p = .04$). Also, as shown in Table B1 of Appendix B, school challenge appraisal was positively related to task performance, but only in concurrent design (estimate = $.06$, $p = .04$), however the positive effect of school challenge appraisal on task performance was non-significant when work challenge appraisal was included in the model (estimate = $.05$, $p = .09$). All other total effects of school stress appraisals on task performance and CWB were non-significant (see Table B1 of Appendix B).

Indirect effects of school stress appraisals on task performance and CWB. Results for the indirect effects of school stress appraisals on task performance are presented in Tables C1 to C6 in Appendix C. As shown in Table C1 of Appendix C, school hindrance appraisal had a negative indirect effect on task performance within-persons via positive affect for the concurrent design without control for work hindrance appraisal (estimate = $-.005$, 95% CI: $[-.013]$ to $[-.00004]$), but the indirect effect was non-significant after controlling for work hindrance appraisal (estimate = $-.004$, 95% CI: $[-.011]$ to $[.000]$). As shown in Table C5 of Appendix C, school challenge appraisal had a positive indirect effect on task performance within-persons via positive affect in the concurrent design when controlling for work challenge appraisal (estimate = $.007$, 95% CI: $[.004]$ to $[.022]$), but a non-significant effect was observed when there was no control for work challenge appraisal (estimate = $.015$, 95% CI: $[-.001]$ to $[.032]$). All other indirect effects involving school stress appraisals with task performance via affect were non-significant.

Results for the indirect effects of school stress appraisals on CWB are presented in Tables D1 to D6 in Appendix D. As shown in Table D3 of Appendix D, school threat appraisal had a negative indirect effect on CWB within-persons via negative affect in the concurrent design when controlling for work threat appraisal (estimate = $-.029$, 95% CI: $[-.065]$ to $[-.006]$), but a non-significant effect was observed when there was no control for work threat appraisal (estimate =

.011, 95% CI: [-.004] to [.027]). All other indirect effects involving school stress appraisals with CWB via affect were non-significant.

Supplementary Analyses for the Effects of Work Stress Appraisals on Task Performance and CWB

In this section, I review the results related to how work stress appraisals impact task performance and CWB. Work stress appraisals were controlled in the supplementary analyses just reported, and it is worthwhile to examine the observed relations between work stress appraisals with task performance and CWB. Accordingly, all of the findings reported below, regarding relations between work stress appraisals with task performance and CWB, are when controlling for the school stress appraisal that matches the associated work stress appraisal under investigation. I also analyzed the effects of work stress appraisals on task performance and CWB without controlling for school stress appraisals. The results followed the same pattern, except for one case, as described in the findings below. Given that the results essentially remained the same without controlling for school stress appraisals, I only review the results from the analyses that included controls for school stress appraisals. It is also worth recalling that these analyses were performed only for the concurrent design, because work stress appraisals were not measured prospectively.

Total effects of work stress appraisals on task performance and CWB. As shown in Table B1 of Appendix B, the total effect of work challenge appraisal on task performance was positive and significant (estimate = .11, $p < .001$), and the total effect of work hindrance appraisal on CWB was positive and significant (estimate = .09, $p < .001$). All other total effects were non-significant. Pertaining to the one difference previously mentioned, I found that when school threat appraisal was not controlled, the total effect of work threat appraisal on CWB was positive

and significant (estimate = .07, $p = .03$), whereas it was non-significant when controlling for school threat appraisal (estimate = .07, $p = .06$).

Indirect effects of work stress appraisals on task performance and CWB. As shown in Tables C1 to C6 of Appendix C, and Tables D1 to D6 of Appendix D, all indirect effects of work stress appraisals on task performance and CWB via affect were non-significant.

For condensed summaries of the results for all the supplementary analyses for school and work stress appraisals just reported, please see Tables E1 through E4 in Appendix E.

DISCUSSION

The main purpose of this research was to investigate how different school stress appraisals can impact OCB at work. In order to do this, I first investigated whether school hindrance, threat and challenge appraisals are distinct constructs at the within-person level of analysis. Results supported this notion, which allowed me to conduct tests regarding how these different school stress appraisals impact work outcomes within-persons. Overall, I found only weak support for the idea that school stress appraisals are related to OCB at work. Firstly, total effects of school stress appraisals on OCB were mainly non-significant, and, secondly, although some significant indirect effects of school stress appraisals on OCB via affect were observed, many of these effects were non-significant after controlling for work stress appraisals. This suggests that school stress appraisals may have little unique effect on OCB over and above their shared variance with work stress appraisals. It also suggests that the work-home resources model may have limited applicability to the school-to-work interface. I discuss these results and their implications in more detail below, along with the results of the analyses regarding the impact of school stress appraisals on task performance and CWB, and the analyses regarding the impact of work stress appraisals on OCB, task performance and CWB.

Relations between School Stress Appraisals and OCB

Indirect effects of school hindrance and threat appraisals on OCB via negative affect. I proposed that school hindrance appraisal would have a *negative* indirect effect on OCB within-persons via negative affect (H1a), and I proposed a parallel path for school threat appraisal (H3a). I discuss these two appraisals together because I proposed that they would follow similar patterns of effects on OCB. My rationale for these hypotheses was that school hindrance and threat appraisals would engender negative affect, which would cause people to focus attention on the negative state due to the narrowing of focus process (Folkman & Moskowitz, 1998), thus decreasing attention on other things, such as OCB at work. I also proposed that school hindrance appraisal would have a *positive* indirect effect on OCB within-persons via negative affect (H1b), while also advancing a parallel path for school threat appraisal (H3b). My rationale here was that school hindrance and threat appraisals would engender negative affect, which would cause people to want to improve their negative state by doing good things, such as OCB at work, due to the negative state relief process of negative affect (Cialdini et al. 1973). I further proposed that the indirect effects proposed in H1a and H1b would remain after controlling for work hindrance appraisal (H7a and H7b) and that the indirect effects proposed in H3a and H3b would remain after controlling for work threat appraisal (H9a and H9b)¹. In sum, I found that the indirect effects of both school hindrance appraisal and school threat appraisal on OCB via negative affect were non-significant, both with and without control for work stress appraisals. Thus H1a, H1b, H3a and H3b were not supported, and H7a, H7b, H9a, and H9b were also not supported.

¹ Please recall that work stress appraisals were only controlled for in the concurrent study design, and accordingly, results for the control cases only relate to the concurrent study design.

One possible explanation of these non-significant findings for the indirect effects is that the narrowing of focus process and the negative state relief process, which are both associated with negative affect, occurred for different people and thus offset each other when looking at the average within-person effect. That is to say, perhaps, there was a negative relation between negative affect and OCB for some people, whereas there was a positive relation for others. The fact that there was significant variance in the effect of negative affect on OCB in the indirect effects models suggests that the aforementioned explanation is plausible. For example, the variance of the effect between negative affect and OCB in the indirect effects model with school hindrance appraisal was significant for the concurrent design ($\sigma^2 = .19$, $p < .001$ with controls; and $\sigma^2 = .16$, $p < .001$ without controls), as well as the lagged design ($\sigma^2 = 21.06$, $p < .001$). Furthermore, the variance of the effect between negative affect and OCB in the indirect effects model with school threat appraisal was significant for the concurrent design ($\sigma^2 = .19$, $p < .001$ with controls; $\sigma^2 = .16$, $p < .001$ without controls) and the lagged design ($\sigma^2 = .70$, $p < .001$). This significant variance in the relation between negative affect and OCB may indicate that there is a moderator at play that explains this variance. I talk more about this in the directions for future research section.

Indirect effects of school hindrance and threat appraisals on OCB via positive affect.

I proposed that school hindrance appraisal would have a negative indirect effect on OCB within-persons via positive affect (H2) and I also proposed a parallel path for school threat appraisal (H4). The rationale for these two hypotheses was that school hindrances and threats can be depleting experiences and thus reduce positive affect, which would in turn decrease OCB. Moreover, I proposed that the indirect effect in H2 would remain after controlling for work hindrance appraisal (H8); and that the indirect effect proposed in H4 would remain after

controlling for work threat appraisal (H10). I found that both school hindrance appraisal and school threat appraisal had a negative indirect effect on OCB via positive affect, but these effects were only observed for the concurrent study design (and not the lagged design), and, furthermore these results were non-significant when controlling for work hindrance in H2 and controlling for work threat appraisal in H4. This provides only partial support for H2 and H4, and does not provide support for H8 and H10. Taken together, the fact the indirect effects were non-significant in the control cases, casts doubt on whether school hindrance appraisal has a unique effect on workplace OCB via positive affect, and whether school threat appraisal has a unique effect on workplace OCB via positive affect.

Because the significant indirect effects of school hindrance appraisal and school threat appraisal on OCB via positive affect were only observed for the concurrent study design, where all variables were measured at the same time, they should be taken with some caution. I cannot rule out the possibility that positive affect was actually the cause of both school hindrance appraisal and school threat appraisal, as well as the cause of OCB. This is because low positive affect during a given week may have caused students to appraise school as more hindering and more threatening as compared to other weeks when they felt higher positive affect, given that affect is a critical part of how we see the world and make judgments (Forgas, 1995). Moreover, low positive affect may have also caused students to engage in less OCB at work that week, because positive affect is a known cause of OCB (e.g., Ilies et al., 2006; Dalal et al., 2009). If this is what actually happened, then this would give the same statistical result as observed in testing H2 and H4, despite the fact that they represent different causal sequences (Spector & Brannick 2011). I also cannot rule out the possibility of reverse-causality associated with the concurrent design. That is to say, doing less OCB could have led people to have less positive

affect (consistent with research linking doing good with feeling good; Steger, Kashdan, & Oishi, 2008), which subsequently could have led people to see things as more hindering and threatening at school (because affect may influence appraisals, as noted above).

There are also reasons why the indirect effects that were observed in the concurrent design may not have been observed in the lagged design. One reason could be due to participants mis-estimating their anticipated school hindrances and threats for the upcoming week. For example, if respondents reported anticipating low hindrances at school for the upcoming week, but ended up experiencing high hindrances, then they would have likely reported low positive affect after the week was over, due to the actual hindrances that were experienced. However, the low positive affect reported after the week was over would not have been accurately predicted by the low amount of hindrances that were expected at the beginning of the week. In order to investigate the possibility that individuals mis-estimated the extent to which school would be threatening and hindering, I correlated within-person measures of prospective school hindrance (threat) appraisals with retrospective school hindrance (threat) appraisals, for appraisals covering the same temporal periods (e.g., prospective school hindrance (threat) appraisals from Survey 1 with retrospective school hindrance (threat) appraisals from Survey 2 etc.). Considering that retrospective appraisals should reflect the actual stressful experience endured during the week, then if there is good deal of unshared variance between retrospective and prospective school stress appraisals, then it would support my argument that the prospective appraisals could have been mis-projected. I found that the within-person correlations between prospective school hindrance (threat) appraisals with retrospective school hindrance (threat) appraisals were high, but were far from perfect ($r = .61$, $p < .01$ for hindrance appraisals; and $r = .79$, $p < .01$ for threat appraisals). This still leaves a good portion of unshared variance that may be due to errors in

stress appraisal projections in the lagged design. This lends some support my proposition that that prospective school hindrance and threat appraisals may have been mis-projected, which could have led to non-significant effects for the lagged design.

Another possible reason for the non-significant indirect effects in the lagged design may be due to statistical power. The lagged design had a smaller sample size with fewer repeated measures than the concurrent design, and therefore the lagged design likely had less power to detect significant effects. Of particular interest was the null effect between positive affect and OCB in the indirect effects models in the lagged design. Despite the fact that positive affect was found to be positively related to OCB for the indirect effects models in the concurrent design, and the fact that many other scholars have found positive relations between positive affect and OCB (see Ilies et al., 2006; Rodell and Judge, 2009), the paths from positive affect to OCB were non-significant in the indirect effects models for the lagged design. This is despite the fact that the effects appeared to be similar or larger in magnitude in the lagged design compared to the concurrent design.

Total effects of school hindrance and threat appraisals on OCB. Taking into consideration the potentially opposing effects related to negative affect (as previously discussed), research questions were posed regarding whether the total effect of school hindrance appraisal on OCB would be positive or negative within-persons (R1) and whether the total effect of school threat appraisal on OCB would be positive or negative within-persons (R2). Given existing theory, it was not clear what the total overall effect would be. Findings demonstrate that only prospective school hindrance appraisal had a significant total relation with OCB and this relation was negative. Thus, the more student-workers perceived that the upcoming week of school would be hindering, the fewer OCB they reported having performed at work once the week was done.

All other total effects were non-significant. At first blush, the fact that prospective school hindrance was found to be negatively related to OCB, whereas retrospective school hindrance appraisal was not, is a bit surprising, given my prior argument that respondents were not making totally accurate predictions regarding their prospective school hindrance appraisals. However, it could be that students who expected many obstacles to occur in the school domain cut back on their OCB at work in order to conserve energy to deal with the school problems they anticipated, but by the time they were aware that those hindrances would not materialize, their engagement in OCB had already decreased. This could explain why prospective school hindrance appraisal was negatively related to OCB.

It is interesting to note that variances for all of the total effects between school hindrance and threat appraisals with OCB (for the concurrent design with and without controls, as well as the lagged design) were significant. This suggests that the relationship between school hindrance appraisal and school threat appraisal with OCB may be more complicated within-persons than what it appears from the overall (mostly non-significant) mean total effects. It is possible that different people exhibit different levels of OCB when they experience school hindrances or threats, and accordingly there could be moderators at play. For example, it could be that a person's locus of control is moderating the relation between school hindrance appraisal and school threat appraisal with workplace OCB. Perhaps people who have an external locus of control (i.e., believe that they do not have control over their environment), may not try to eliminate their school hindrances and threats, which could make life more difficult, and thus the relation between school hindrance appraisal and school threat appraisal with OCB may be negative for those individuals. On the other hand, perhaps those people who have an internal locus of control (i.e., believe that they have control over their environment) may act to eliminate

school hindrances and threats directly, thus making it less likely that these stress appraisals will negatively impact workplace OCB. Therefore, perhaps for people with an internal locus of control, the relations between school hindrances and threats with OCB may be weaker than the relations for people with an external locus of control, or even non-significant.

Indirect effects of school challenge appraisal on OCB via positive affect. I

hypothesized that school challenge appraisal would have a positive indirect effect on OCB within-persons via positive affect (H5). My rationale was that school challenges should inspire a sense of energy associated with positive affect (e.g., feeling strong, inspired, determined etc.) that would increase the propensity to engage in OCB. Furthermore, I proposed that this indirect effect would still be significant after controlling for work challenge appraisal (H11). I found that school challenge appraisal had a positive indirect effect on OCB via positive affect, but only for the concurrent design (and not for the lagged design), where the indirect effect remained significant after controlling for work challenge appraisal as predicted. These results provide partial support for H5 and are consistent with H11.

Given that H5 and H11 were only supported for the concurrent design, the same concerns that were previously discussed, in regard to the indirect effects via positive affect for school hindrance and threat appraisals, apply for school challenge appraisal as well. That is, I cannot rule out the possibility that positive affect was the cause of both school challenge appraisal and OCB, nor the potential for reverse causation. So, these results for school challenge appraisal should also be taken with caution. Pertaining to the lagged design, it is (again) possible that respondents mis-projected their school challenge appraisals for the upcoming week, which could have led prospective school challenge appraisals to be a poor predictor of positive affect that was measured when the week was over, and to the eventual non-significant indirect effect in the

lagged design. To investigate this, I once again calculated the correlation between prospective and retrospective school appraisals, this time for school challenge. I found that the within-person correlation between prospective and retrospective school challenge appraisal, covering the same weeks, was again high, but far from perfect ($r = .66, p < .001$). Thus, it is possible that respondents were not completely accurate in their projections regarding school challenge appraisal, and this could have caused the non-significant indirect effect in the lagged design.

Indirect effects of school challenge appraisal on OCB via negative affect. Similar to my hypotheses for school hindrance and school threat appraisals, I proposed contrasting hypotheses for school challenge appraisal as it pertains to negative affect. Specifically, I hypothesized that school challenge appraisal would have a *negative* indirect effect on OCB within-persons via negative affect (H6a) and a *positive* indirect effect on OCB within-people via negative affect (H6b). I also proposed that both H6a and H6b would hold after controlling for work challenge appraisal (H12a, H12b). Results demonstrated that school challenge appraisal did not have an indirect effect on OCB via negative affect, thus H6a and H6b were not supported (both in the concurrent and lagged designs). Additionally, school challenge appraisal did not have an indirect effect on OCB via negative affect when controlling for work challenge appraisal, so H12a and H12b also were not supported.

As previously noted, one possible reason for these non-significant findings could be that the processes of narrowing of focus and negative state relief are operating for different people, which created the null effect between negative affect and OCB, and the eventual non-significant indirect effect. As was the case for the other school stress appraisals, there was significant variance in the effect of negative affect on OCB in indirect effect model for school challenge appraisal in the concurrent design with and without controls ($\sigma^2 = .19, p < .001$ and $\sigma^2 = .16, p <$

.001 respectively) and the lagged design ($\sigma^2 = 5.88$, $p < .001$). This suggests that the processes of narrowing of focus and negative state relief may indeed be operating for different people, as well as suggests that moderation is possible between negative affect and OCB. I talk more about the latter in the directions for future research section.

One interesting finding in the indirect effects models for school challenge was that school challenge appraisal was negatively related to negative affect in the concurrent design, both with and without controls for work challenge appraisal. This was unexpected, as I anticipated a positive relation between school challenge appraisal and negative affect. My expectation was based on theory describing challenges as stressful (despite having the potential to produce positive outcomes), as well as past research findings that challenges are positively related to negative affective states (see meta-analysis by Mazzola and Disselhorst, 2019; Rodell & Judge, 2009). A possible factor that could explain the observed negative relation between school challenge appraisals and negative affect, and potentially account for why my results diverge from other studies, is related to the way that I measured challenges. In past studies, challenges have been measured based on a priori assumptions about aspects of a domain (namely work) that would make it challenging (e.g., assuming that the extent of responsibility at work or the extent of time pressures at work is an indicator of the degree to which a person feels challenged). However, I did not take this approach. Instead, my approach was more aligned with the transactional model of stress, by asking participants directly whether they found school challenging using the theoretical definition of this construct. So, it appears that certain demands within a domain that have been labelled as “challenges” (e.g., time pressures at work or responsibility) may indeed induce strain and negative affect, as the extent of these “challenges” increase, whereas a person’s perception of whether a domain is challenging may reduce strain

and negative affect. I think that this finding is pertinent to the stress framework, as it delineates how taking a more transactional approach to measuring the extent to which a person finds a domain challenging can lead to different results, as compared to taking an a priori-based approach that assumes certain stimuli within a domain are challenging by definition.

Total effect of school challenge appraisal on OCB. Taking into consideration the potentially opposing effects related to negative affect (as previously discussed), a research question was posed regarding whether the total effect of school challenge appraisal on OCB would be positive or negative within-persons (R3). I found that the total effect of school challenge appraisals on OCB was non-significant for the concurrent design (both with and without control for work challenge appraisal) and the lagged design. So, despite the fact that school challenge appraisal had a positive indirect effect on OCB via positive affect in the concurrent design, this indirect effect did not translate into a significant total effect in that design. This is probably because the indirect effect was small, and may have been counteracted by other effects in the opposing direction that reduced the total effect to a null effect. Or, the non-significant total effect could mean that there are moderators at play, which would indicate there are different relations for different people, that on the whole created a non-significant average total effect. The fact that there was the significant variance in the total effect of school challenge appraisal on OCB (both in concurrent and lagged designs, as there was for school hindrance and threat appraisals) suggests that this reasoning is plausible. One possible moderator that may influence the relationship between school challenge appraisal and OCB is whether a student's degree is related to their job. For instance, if a student's degree is related to their job (e.g., a student majoring in finance who works at a bank) and they are challenged at school to learn new things, then it seems reasonable that this new knowledge could be applied on the job, and potentially lead to more OCB, such as helping co-workers with their work, providing ideas to

help the organization, and/or being a more conscientiousness employee. However, if a student's degree is unrelated to their job (e.g., a student majoring in finance who works as a bartender), then it seems less likely that any school challenges they are facing would be applicable to their work, and consequently it may be less likely for school challenges to impact OCB in that case.

Relations between Work Stress Appraisals and OCB

I found that work hindrance, threat and challenge appraisals were each positively related to OCB. The fact that work challenge appraisal was positively related to OCB is reasonable based on the fact that challenges can evoke positive affect, and that positive affect should have positive downstream effects on OCB following the feel-good-do-good principle (Lyubomirsky et al., 2005). In fact, this indirect process was supported in my study, as it was found that work challenge had a positive indirect effect on OCB via positive affect (in the concurrent design). The findings that work hindrance and threat appraisals were positively related to OCB seems reasonable, provided that the result is explained by the negative state relief process. However, surprisingly, this was not the case, as work hindrance appraisal and work threat appraisal did not have a positive indirect effect on OCB via negative affect. However, given the fact that work hindrance and threat appraisals, as well as OCB, were measured at the same time, it might not be that work hindrance and threat appraisals increase OCB, but rather it could be the reverse. That is to say, doing more OCBs at work may have led people to experience more work hindrances and threats because their engagement at work had increased. It seems possible that as engagement increases, because of increased OCB, then the likelihood of running into hindrances and threats along the way also increases. For example, if someone increases their helping behaviour, then it is likely that whoever obtained the help was facing obstacles/hindrances that could now become the problem of the person that is doing the helping, and these hindrances may even become

threats if they are very difficult to solve, which can potentially impair a person's self-worth. If there was a temporal lag between the measures of work hindrance and threat appraisals and OCB, this may have shed more light on the causal flow, but I did not measure prospective work stress appraisals for reasons previously mentioned.

Relations between Stress Appraisals and OCB

Looking at the pattern of results for both school and work stress appraisals, the only significant finding that was consistent was that both school and work challenge appraisals had a unique positive impact on OCB via positive affect (for the concurrent study design). Thus, one general claim that could be made regarding the effect of stress appraisals on OCB is that challenges have the capacity to positively influence OCB via positive affect. This is in line with Rodell and Judge (2009) who found that work challenges had a positive indirect effect on OCB via the positive affective state of attentiveness. Despite the fact that school and work challenge appraisal demonstrated similar indirect effects on OCB via positive affect, they did not demonstrate similar total effects on OCB, as work challenge appraisal had a positive total effect on OCB (which aligns with Roddel & Judge, 2009), whereas school challenge appraisal had no total effect on OCB. In the case of hindrance and threat appraisals, the results across school and work were not consistent as well. Namely, work hindrance appraisal and work threat appraisal both had positive total effects on OCB (which is a little odd), whereas school hindrance appraisal and school threat appraisal generally had no significant total effects on OCB (except for prospective school hindrance appraisal, which had a negative total effect on OCB). As previously suggested, it is possible that the positive relation between work hindrance and work threat appraisal with OCB is actually a matter of reverse causation, where engaging in helpful behaviours at work leads to increases in hindrances and threats at work. Looking at it from this

perspective, the non-significant effect between school hindrance appraisal and school threat appraisal with OCB would then make sense because increases in engagement in OCB at work are unlikely to impact school hindrance and threat appraisals, and accordingly the non-significant relation between school hindrance appraisal and school threat appraisal with OCB seems like it could be fitting from the perspective of reverse causation. All that said, the fact that work stress appraisals, especially hindrance and threat appraisals, exhibited positive relationships with OCB seems to contradict past research, which has found that stressors typically associated with hindrances and threats (e.g., role ambiguity, inter-role conflict, interpersonal conflict, organizational politics) are negatively related to OCB (e.g., Chang et al., 2009; Eatough et al., 2011; Pooja et al., 2016).

Distinctiveness and Dynamism of School Stress Appraisals

Coming into this study, literature pertaining to the distinctiveness and dynamism of school stress appraisals (as a hindrance, threat and challenge) seemed to be lacking. Although, past research has found that work hindrance, threat and challenge appraisals are distinct at both the between and within-person levels of analysis (Tuckey et al., 2015), this issue had yet to be explored for school stress appraisals. Based on a multi-level confirmatory factor analysis, I was able to support the fact that school stress appraisals are indeed distinct constructs at both levels of analysis, which aligns with the results in the work domain. Furthermore, although some research has hinted at the dynamism of school stress appraisals (e.g., the suggestion that certain emotions associated with challenges and threats change after an exam as compared to before; Folkman & Lazarus, 1985; Smith & Elsworth, 1987), a comprehensive analysis of the dynamism of the constructs themselves has not appeared to have been done up to this point. My research shows that, on a weekly basis, school stress appraisals do indeed exhibit dynamism. The findings related

to the distinctiveness and dynamism of school stress appraisals represent important contributions of my research.

Measurement of Stress Appraisals

Another point about stress appraisals that warrants discussion is how they were operationalized in this study. Past research pertaining to stress appraisals (i.e., hindrance, threat and challenge) has often measured these appraisals (especially challenge and hindrance appraisals, where the majority of research seems to have been done) based on stimuli that are a priori assumed to be either hindering, threatening or challenging. As noted in the introduction, Mazzola and Disselhorst (2019) have questioned this “a priori” approach and have suggested that it should be adjusted in favour of an approach more consistent with the transactional model of stress (i.e., asking respondents whether they find a particular domain hindering, threatening or challenging). So, another important contribution of this paper is that I am adding to the growing body of research that is leveraging the transactional approach to measuring stress appraisals. In fact, Mazzola and Disselhorst (2019) questioned whether the use of the “a priori” approach to measuring stress appraisals could be the cause for meta-analytic findings showing that overall challenges often behave like hindrances (i.e., have deleterious consequences, such as burnout, psychological/physical strain, CWB, inspire turnover), and do not exhibit expected relationships with positive outcomes, such as increases in job satisfaction as well as reductions in job search and voluntary turnover, which were originally proposed by Cavanaugh et al. (2000).

Accordingly, the theoretical dichotomy between “good” challenges and “bad” hindrances has been less robust empirically, and according to Mazzola and Disselhorst (2019), this could be a measurement issue. Indeed, in my study, which used an approach aligned with the transactional model of stress to measure stress appraisals, I found a clearer distinction between challenge

appraisals and hindrance/threat appraisals, especially in the school domain. For example, I found in the concurrent design (without controls) that school challenge appraisal was positively related to PA and negatively related to NA in all indirect effects models, whereas school hindrance and threat appraisals were negatively related to PA and positively related to NA in all indirect effects models.

Affect and OCB

Coming into this study, it seemed clear that positive affect would be positively related to OCB (e.g., Dalal et al., 2009; Ilies et al., 2006). This is in line with the feel-good-do-good hypothesis (Lyubomirsky et al., 1995), the broaden-and built theory (Fredrickson, 2004) and the theory of mood maintenance (Eisenberg, 1991). Empirical evidence seems to buttress the notion that positive affect will amplify OCB (Dalal et al. 2009; Rodell & Judge, 2009). It was less clear how negative affect would be related to OCB. Past theory has put forward two opposing processes regarding how people deal with negative affect, more specifically, the negative state relief process (Cialdini et al., 1973) and the narrowing of focus process (Moskowitz, 2000), and these lead to opposing conclusions about the relation between negative affect and OCB. There is some evidence to support both processes (e.g., Cialdini et al., 1973, and Glomb et al., 2011 support negative state relief, whereas Rodell & Judge, 2009, support narrowing of focus), but there is also a study by Dalal et al. (2009) that found a non-significant relation between negative affect and OCB within-persons. Based on the indirect effects models in my study, I found that the mean within-person effect of negative affect on OCB was non-significant. This result is aligned with the work of Dalal et al. (2009), which is interesting because Dalal and colleagues also used the PANAS scale to measure negative affect, in contrast to other studies that did not. As previously discussed, the null relation between negative affect and OCB could be due to the two

aforementioned opposing processes happening for different people, which led to an average null within-person effect. In the end, the nature of the relation between negative affect and OCB still seems unclear, despite my attempt to add some clarity to the situation. I talk about avenues for future research concerning the relation between negative affect and OCB in the directions for future research section.

Dynamism of OCB

My results add further evidence regarding the dynamic view of OCB. As Bolino et al., (2012) pointed out, much of the past research on OCB has taken a static/between-person view, but there is a growing body of research that has taken a dynamic view of OCB (e.g., Ilies et al., 2006; Dalal et al., 2009). I adopted the dynamic view in this study and I found further support for this perspective looking at within-person variation on a weekly basis. Based on the variance partitioning, there was significant within-person variance in OCB from week-to-week throughout the four-week period of data collection. This result adds to the existing repository research supporting a dynamic view of OCB, namely that OCB fluctuates daily (Ilies et al., 2006) as well as within the same day (Dalal et al., 2009).

Relation Between School and Work Stress Appraisals with Task Performance

I found that school challenge appraisal had a positive total effect on task performance (only in the concurrent design), but the total effect was non-significant after controlling for work challenge appraisal. This suggests that school challenge appraisal may not have a unique total effect on task performance above its shared variance with work challenge appraisal. I also found that work challenge appraisal had a positive total effect on task performance. This finding seems reasonable, although it is surprising that positive affect did not explain this effect. However,

another mechanism, not examined in my study, that may explain this result could be experienced meaningfulness. It could be that when employees face work challenges that allow them to grow and learn, then this brings meaning and value to their work, which as per the Job Characteristics Model is a mechanism that can explain increased work performance (Renn & Vandenberg, 1995), which includes OCB.

I also found that school hindrance appraisal had a negative relation to task performance in the lagged design and not the concurrent design, where there was a non-significant effect. This is the same pattern that was observed for OCB and, as previously mentioned, this significant relationship is a bit surprising, given my prior argument that respondents were not making totally accurate predictions regarding their prospective school hindrance appraisals. However, as previously discussed, it could be that students who expected many obstacles to occur in the school domain reduced their task performance at work in order to conserve energy to deal with the anticipated school problems, but by the time they were aware that those hindrances would not materialize, their engagement in task performance had already decreased. As it pertains to the previously mentioned non-significant effect between school hindrance appraisal and task performance for the concurrent design, it is also worth noting that this effect aligns with the work of Calderwood and Gabriel (2017) who also found a non-significant effect.

Relation Between School and Work Stress Appraisals with CWB

Overall, there were only two significant effects between school and work stress appraisals with CWB. Firstly, school threat appraisal had a negative indirect effect on CWB via negative affect, but only after controlling for work threat appraisal. This seems counterintuitive considering that school threat appraisal should increase negative affect (based on previous arguments), and negative affect should, in turn, increase CWB (see Dalal et al., 2009 for

reasoning). Thus, a positive indirect effect between school threat appraisal and CWB via negative affect would have been more logical. Also, the fact that the effect was only observed when controlling for work threat appraisal is also unusual. This is an oddity that is difficult to explain.

Secondly, work hindrance appraisal and work threat appraisal each had a positive total effect on CWB (but note the positive total effect between work threat appraisal and CWB was only significant in the model where school threat appraisal was not controlled). These findings seem reasonable, and the finding that work hindrance appraisal was positively related to CWB is consistent with Rodell and Judge (2009). Interestingly, negative affect did not explain the observed total positive effects between work hindrance and threat appraisals on CWB in my study, as it did in Rodell and Judge (2009, for work hindrances). This difference could be related to the fact that Rodell and Judge (2009) used discrete measures of negative affect (i.e., discrete emotional states, such as anger and anxiety), whereas I used a general measure of negative affect (i.e., NA.)

Overall, there were not many significant relations between school and work stress appraisals with CWB, and when there were significant effects, they differed for different school and work stress appraisals. Accordingly, my results do not appear to support any overarching claims about how stress appraisals, in general, impact CWB.

The School-to-Work Crossover Effect

Overall, it appears that school stress appraisals have little impact on work outcomes. First, most of the total effects between school stress appraisals and work outcomes were non-significant and many that were significant become non-significant after controlling for work stress appraisals. Second, although there were some indirect effects between school stress appraisals

and work outcomes via affect, most became non-significant after controlling for work stress appraisals. Given this information, it seems that the propositions I borrowed from the work-home resources model may only weakly apply to the school-work interface, at least based on what I observed in the school-to-work direction. One possible reason for this could be that students are able to compartmentalize their stressful school experiences, so that these experiences have limited impact on work. For example, though a student may be having difficulty understanding course material, which may be hindering for some students and negative affect inducing, at the end of the day many students can always drop the course, and knowing this, it may be easier to transition to work activities without being impacted by their negative affective state from school experiences. For this reason, students may be able to more easily mentally table stressful experiences related to school, knowing that there is a way out, which could facilitate pivoting to other things, such as focusing on work, with more ease. However, in the case of the work-home interface, it may be harder to compartmentalize. It seems more difficult to “dropout” of one’s work or family role, as this could mean either losing one’s livelihood or severely damaging one’s family life. As such, it may be more difficult for people to compartmentalize stressful things at work or in the family domain, and more likely that stressful conditions in these domains will impact each other, or other domains.

Another possible reason for the weak relations between school stress appraisals and work outcomes could be related to participants not being engaged in school-related matters on the same days that they worked. For example, a participant could have reported high school hindrances and associated high negative affect over the week, but if the participant did not attend classes or do school work on the day or days that they went to their jobs, then the high negative affect reported due to school may not have impacted work outcomes. The transient nature of affect could have

resulted in the high negative affect from school dissipating by the time the participant went to work.

Despite the fact that most results were not significant, there was a relatively robust finding that school challenge appraisal had a positive impact on OCB via positive affect, even after controlling for work challenge appraisal. This demonstrates that school can facilitate work outcomes, which is consistent with some past research on this topic (e.g., Kirby et al., 2004; Wyland et al., 2016). I also found some negative effects of school (stress appraisals) on workplace OCB, which is consistent with some past studies that have found evidence of school-to-work conflict (e.g., Wyland et al., 2013; Wyland et al., 2016), but generally the effects I observed became non-significant when controlling for work (stress appraisals).

Limitations

I should note several limitations of this study. One limitation, which seems pretty important, because it raises questions about the internal validity of the study, is the simultaneous nature of data collection related to the concurrent design, where school stress appraisals, work stress appraisals, positive and negative affect, and work outcomes (OCB, task performance and CWB) were all measured at the same time each week (albeit repeatedly) over the four-week data collection period. As previously mentioned, in the results section, collecting data in this simultaneous fashion creates questions surrounding alternate forms of causation (e.g., reverse-causality or the intervening variable being the cause of the IV and DV)

The lagged study design was used to help mitigate the aforementioned issues associated with the concurrent design, by creating temporal separation between the measurement of school stress appraisals (IVs) with the intervening variables (PA and NA) and the DVs (i.e., OCB, task

performance and CWB), but the lagged design still remained limited by simultaneous data collection for the intervening variables and the DVs, and the different results between the lagged and concurrent designs does not foster confidence regarding whether the proposed causal flows were indeed supported. Also, although, the lagged design may have helped to limit issues surrounding simultaneous data collection, it may have introduced a different problem. Specifically, as previously discussed, it is possible that students may have been mis-projecting their prospective school stress appraisals for the upcoming week. If this was the case, then prospective school stress appraisals may have been poor predictors of the affect that was actually experienced during the week, and work outcomes during the week. This is one possible explanation for the many non-significant findings in the lagged design. Accordingly, obtaining prospective measures of school stress appraisals, despite helping to alleviate issues with simultaneous data collection, may have contributed to another limitation when it comes to interpreting the results of this study. All in all, alternate forms of causation may be one of the largest limitations of this study as it could have affected the concurrent design and to a lesser extent the lagged design (since only the intervening and dependent variables were measured at the same time in the lagged design).

A second limitation of this study was that all measures of key variables were taken from the same source every week over the four-week period. This opens the door to the potential problem of common method variance, where any observed relation between the variables could be artifactual as it comes from the same source. For example, by having one rater report on all variables of interest, he or she may try to exhibit consistency across all responses (i.e., trying to match certain variables of interest so they make sense), known as the consistency motif, which can artificially increase the relations between variables (Podsakoff, MacKenzie, Lee &

Podsakoff, 2003). Furthermore, a participants' mood at the time of answering the survey could have contaminated all their responses on the questionnaire, which could create spurious relations in the concurrent design, and to a lesser extent the lagged design (because the intervening dependent variables were measured at the same time in the lagged design) that do not represent true relations between the constructs of interest. Take for instance the negative indirect effects between school hindrance appraisal and school threat appraisal with OCB via positive affect (without controls) that were observed in this study. It could be that low positive affect at the time of answering a particular survey could have biased participants into 1. rating their school stress appraisals for the prior week less favorably, such as more hindering and threatening, 2. providing lower ratings for their positive affect experienced the prior week, and 3. underestimating their OCB during the prior week. If this happened over several surveys, it could have led to the appearance that school hindrance appraisal and school threat appraisal each caused decreases in OCB via positive affect, when that was not actually the case. For all of these reasons, caution is warranted in concluding that the proposed causal sequences, which are consistent with some significant observed indirect effects in the concurrent design, are in fact correct.

In order to avoid the previously mentioned issues of common method variance related to same source reporting, as well to avoid the potential for social desirability biases related to self-report job performance measures, I tried to obtain third party measures of these constructs. I did this by asking participants to send a request to one of their co-workers or supervisors (whichever they preferred) to complete a survey concerning the participant's job performance (including measures of OCB, task performance and CWB). However, the response rate for the third-party survey was very low based on Survey 1, only accounting for about 10% of total student-worker

responses². Given the small external-rater response rate and its inadequacy for hypothesis testing, I decided not to collect third party measures for these variables for the remaining surveys and I never analyzed the third-party ratings that were collected. That said, it is worth noting that past meta-analyses have found little difference between self-ratings of OCB and CWB compared to other-ratings of OCB and CWB (see Berry, Carpenter & Barratt, 2012; Carpenter, Berry, & Houston, 2014), thus making the issue of self-report ratings of performance less concerning, especially as it relates to social desirability biases. In addition, because all variables were centered relative to each individual's mean score, this should remove any response tendencies that relate to between-individual differences or personal characteristics, including social desirability biases (that could have enhanced the reporting of OCB and task performance, and decreased the reporting of CWB) and/or consistency motif biases (which could have amplified relations between variables as previously discussed).

A third limitation of this study is that I obtained a convenience sample of undergraduate business students enrolled in a core organizational behaviour course at a single University. Consequently, within the sample obtained, there may be under-representations of students in other disciplines or other institutions who are all within the target population of working students. As a result, the results of this study may not generalize to the broader population. For example, results may not apply to students who belong to academic backgrounds other than business, or who are graduate-level students, or who belong to different academic institutions.

² I received only 34 external-rater responses for job performance measures (e.g., OCB, task performance and CWB) on the first survey of the main study based on 348 student-worker responses. Note that these are raw numbers, without accounting for carelessness or respondents double answering surveys.

A fourth limitation of this study could be that positive and negative affect were measured using the PANAS scale, which only includes high activation positive and negative emotions and not low activation emotions (see Barrett & Russell, 1998). Accordingly, it may have been more comprehensive to re-examine all the models by including low activation positive emotions (e.g., calm, relaxed, serene and contented) in the measure of positive affect, as well as including low activation negative emotions (e.g., being bored, sad, fatigued and depressed) in the measure of negative affect (Barrett & Russell, 1998). It is important to note, however, that this could have led the scales used to measure positive affect and negative affect i.e. (PA and NA) to no longer be independent of one another, based on research by Barrett and Russell (1998). Thus, when using a more comprehensive measure of positive and negative affect, it may be necessary to look at different factor configurations, or to examine the low activation emotions separately from the high activation emotions. However, it is not clear to me that school stress appraisals would be related to low activation emotions. In their work, Folkman and Lazarus (1985) describe challenge emotions as feeling confident, hopeful and eager, which seem analogous to high activation emotions rather than low activation emotions. Also, arguing that school challenges increase positive affect, in the form of low activation emotions, such as a sense of calm, relaxation and serenity seems a bit counterintuitive, versus linking challenges to high activation positive emotions, such as feeling inspired, determined, and enthusiastic, which was done in this study. Similarly arguing that school hindrances and threats will increase negative affect in the form of low activation emotions, such as boredom, appears a bit counterintuitive as well, although admittedly it does seem to make sense to link hindrances and threats to low activation emotions such as fatigue and sadness. So, overall, the approach of linking school stress appraisals to high activation emotions in accordance with Watson et al.'s (1998) PANAS scale seems like a reasonable approach. In fact, other scholars, such as Ilies et al (2006) and Dalal et al. (2009) have

used the PANAS scale to measure positive and negative affect, and more specifically in relation to OCB, which I did as well. Nonetheless, it still should be noted that this research does not cover the full range of affective states, despite using the terms positive and negative affect, and it is possible that the chosen conceptualization of affect could have affected the results that were observed, and that other findings would be observed based on other conceptualizations of affect.

A fifth limitation of this study is that key variables were measured using a weekly time frame. This could have led to increased measurement error for several reasons. Firstly, asking students to remember their experiences over the last week or anticipate them over the upcoming week, although reasonable, could have been associated with some students having trouble recollecting/anticipating all of their experiences, which may have created some inaccuracies in their reporting. One way to avert this problem could have been to obtain daily measures of the variables of interest to help mitigate this issue. However, daily measures of all the variables were not obtained because it was believed that school stress appraisals would more likely change on a weekly basis, given that the demands of post-secondary school tend to cycle weekly. Moreover, because most students work only part time, they do not work every day, making it more difficult to conduct a daily study that involves measuring work behaviours for student-workers.

A final limitation of this study could be that I tested within-person effects with only three or four repeated measures in the concurrent design, and three repeated measures in the lagged design. This may not be enough data points to capture the most in-depth view of changes that occur within-persons over time and it could have resulted in insufficient statistical power to detect true effects that do exist in the population. For example, pertaining to the lagged design, I found it rather odd that the relations between positive affect and OCB, within numerous indirect effects models, were not significant, despite the fact that past literature found positive effects (see

Dalal et al., 2009; Rodell & Judge, 2009) and I found positive effects between positive affect and OCB, namely in the concurrent design (which contained some participants who had answered more than three surveys). As per Arend and Schafer (2019), given my sample size for the concurrent and lagged designs, which was over 200 participants, and the number of surveys collected, which was three for the lagged design and between three and four for the concurrent design, I would have needed an effect size of at least .12 or greater to have the typically desired power level of .80 for all the total effects. However, as observed in Table 11 and Table B1 in Appendix B, all of the total effects between school stress appraisals and work outcomes, were smaller than .12. Thus, it is possible that I did not have enough power to detect some of my proposed effects due to the small number of surveys collected per person. This could also explain why many of the indirect effects may not have been supported as well, especially in the lagged design, where less surveys were collected per person. Although it would have been desirable to collect more surveys per person, the subject pool from which participants were recruited has a cap on the number of extra credits that students could receive, and four was the maximum number of surveys that could be done before reaching this cap.

Practical implications

This study has several salient implications. One of the more robust findings of this report was that school challenge appraisal had a positive indirect effect on OCB via positive affect, even after controlling for work challenge appraisal (results for concurrent design only). This seems to present reasonable evidence that appraising school as a challenge can have adaptive effects on workplace OCB. As such, practitioners should consider leveraging this result when hiring new student-workers or managing student-workers who are already on the payroll. Pertaining to the former, when hiring new workers, managers may want to pay attention to whether students

appear to frame school in a positive light during job interviews, elucidating on school's ability to offer self-actualization, growth, achievement or accomplishment. This information could be an indication that the students perceive school as a challenge and that they would be good organizational citizens if hired. Also, managers who currently employ student-workers may benefit from extolling the virtues of school to these workers, such as opining about its importance for career growth, financial stability and attaining respect. This type of positive framing may encourage students to see school as a challenge, which may have positive downstream effects on OCB.

Another practical implication of this study pertains to the fact that appraising school as stressful (i.e., as a hindrance, threat or challenge) did not seem to negatively impact work outcomes, as many of the effects of school stress appraisals on work outcomes were non-significant after controlling for work stress appraisals. From a practitioner's perspective this seems to be good news, because it suggests that many stressful conditions that student-workers are facing at school will not necessarily carry-over to work in a bad way. Accordingly, if practitioners are trepidatious about hiring student-workers, for fear that issues related to school could potentially damage or interfere with work performance, they may be reassured that my data seem to generally show that school stress appraisals do not have a negative impact on work. However, it is important to remember that I still found that school hindrance and school threat appraisals had negative indirect effects on OCB via positive affect, and that school hindrance appraisal had a negative indirect effect on task performance via negative affect all without controls in the concurrent design. So, if managers really want to be vigilant to ensure that any perceived stressful school experiences do not negatively influence OCB and task performance, managers may want to enquire with students to see if they are encountering any hindrances and

threats at school, and try to improve their likely low positive affect that accompany these stressful conditions, so that the low positive affect doesn't eventually impact work (recall that school hindrance and threat appraisals were negatively related to positive affect). This may involve providing encouragement to those employees to boost their spirits. This improvement in positive affect may help to offset any possible decreases in OCB or task performance.

As it pertains to the effects of work stress appraisals on work outcomes, managers may want to pay special attention to challenging employees, as the evidence seems to suggest that challenges fairly consistently have positive effects on work outcomes. For example, work challenge appraisal had a positive indirect effect on OCB via positive affect, as well as a positive total effect on OCB and task performance. Accordingly, managers should consider investing time in figuring out what challenges their employees at work, as this could motivate them to engage in more OCB and have superior task performance.

Future Research Directions

Future research should continue to investigate the relation between negative affect and OCB. Given the significant variances found for the within-person effects between negative affect and OCB in the indirect effects models, it seems probable that there are moderators at play and it seems worthwhile for future research to look for these moderators. One potential moderator could be the personality characteristic of extraversion/introversion. For example, when faced with negative affect, people who are extraverted may have an increased proclivity to socially engage with their environment as a means to try to deal with their negative state. This engagement may come in the form of helping others, being courteous to others, and providing creative ideas to company officials to improve the organization, which are all associated with OCB. So, it could be that when extraverts are faced with negative affect, they are more likely to utilize the negative

state relief process, and accordingly, the relation between negative affect and OCB may be positive for extraverts. However, people who are introverted may have less of a propensity to increase social engagement as a means to offset their negative state, and may be more likely to concentrate on eliminating the source of the negative affect or ruminate about it more internally. As such, introverts may be more likely to exhibit the narrowing of focus process. If this is the case, then the relation between negative affect and OCB may be negative for introverts. Future research could test this speculation.

Methodologically, future research may benefit from taking a daily approach, instead of a weekly approach when examining how school stress appraisals impact work behaviours. As previously discussed, this may eliminate the possibility of respondents mis-remembering things that happened over the past week (or mis-projecting things to happen over the upcoming week), consequently leading to more accurate reporting of the variables of interest and possibly more significant effects. However, one of the reasons why I adopted a weekly time frame was because I believed that school demands, especially at the university/post-secondary level, tend to cycle weekly (as previously noted). Accordingly, I believed that student's stress appraisals of school would likely change from week-to-week, rather than from day-to-day. However, based on my knowledge, research has not yet examined whether school stress appraisals fluctuate daily, and it could be interesting for future researchers to re-perform this study by taking a daily approach because different results could emerge. Accordingly, scholars can send out daily surveys, over a series of consecutive days, and ask respondents to complete surveys concerning their school and work experiences only if they worked that particular day.

Methodologically, I also join other scholars (e.g., Mazzola & Disselhorst, 2019; Webster, Beehr & Love 2011), who have recommended that future research try to incorporate the use of

more stress appraisal scales that are aligned with the transactional model of stress (i.e., asking respondents whether they find school or work hindering, threatening or challenging using the theoretical definitions of these constructs), rather than a priori assuming that certain factors present in school or work make these domains more or less hindering, threatening or challenging. As shown in my pilot study, and when comparing the results of other studies that have taken different approaches, different results can emerge depending on the type of scale used. For example, in the pilot study I found that items belonging to school challenge scales that are more aligned with the transactional model of stress loaded on separate factors as compared to items from the school challenge scale that a priori assumed that certain factors present in school are stressful. Furthermore, in the main study, I found that school challenge appraisal was negatively related to negative affect (in concurrent design) when using a challenge scale that is more aligned with the transactional model of stress, whereas other research has found that challenges, namely work challenges, were positively related to negative affect when using a challenge scale that a priori assumes that certain factors related to a domain are challenging (e.g., Rodell & Judge, 2009). So, this difference seems to indicate that feeling challenged may reduce feelings of negative affect, whereas experiencing high levels of “challenging” demands may increase feelings of negative affect.

Future research may also consider examining specific school stressors/demands (e.g., overload, time pressures, responsibilities, ambiguity, hassles), and their subsequent impact on work outcomes. My research focused on stress appraisals (i.e., hindrance, threat and challenge appraisals), which are more general attributions about the stressful conditions in school, and hence my study does not provide insights into the particular demanding conditions in school that may be impacting work. For example, I found that school challenge appraisal had a positive

impact on OCB via positive affect, but I do not know what it is about school that caused students to perceive it as challenging. Even more interesting could be to investigate the effect of discrete school stressors/demands (e.g., overload, time pressures, ambiguity etc.) on work outcomes, as moderated by the extent to which students see those school stressors/demands as more or less hindering, threatening or challenging. For example, it could be that school overload has an overall negative impact on OCB, but when students see school overload as highly challenging, the relationship becomes positive. This would follow directly from the transactional model of stress, which focuses on the transaction between the stimulus (e.g., the demand) and the person's appraisal of that stimulus. Studies examining this idea have been done before. For example, Parker, Bell and Gagne (2019) examined the impact of a pay-for-performance system on work outcomes, and the extent to which participants saw the system as hindering and challenging. They found that participants who viewed the system as more challenging experienced less strain and acted more prosocially at work. Conversely, participants who viewed the system as more hindering, experienced more strain and acted less prosocially at work.

Considering that the cross-domain effects of school stress appraisals on work outcomes seemed to be weak, future research may want to investigate the within-domain effects of school stress appraisals on school outcomes, and then compare the relative strength of the within-domain effects to the cross-domain effects. It could be that school stress appraisals have a greater effect on school-related outcomes than work-related outcomes. Also, given the lack of effects relating to the impact of school on work, future research may want to examine the impact of work on school, by exploring how work stress appraisals impact school outcomes. This would allow us to compare the relative strength of the effects in both directions, and provide information pertaining to the domain (either school or work) that holds more primacy in influencing the other.

CONCLUSION

The notion that school is stressful, especially at the university/post-secondary level, seems like a basic truism if you were to ask students about their experiences. In fact, studies have shown that after entry to university, the strain that students experience increases comparatively to pre-university levels, and does not return to pre-university levels throughout students' tenure at school (Cooke et al. 2006). Given the ostensible pervasiveness of stressful conditions at school, and the fact that many of these students who are facing these stressful conditions are working (see Canadian University Survey Consortium, 2020), I aimed to study how different types of school stress appraisals can impact workplace OCB for working students, and I also examined task performance and CWB. Research in this area is timely, with to my knowledge, only one paper that has attempted to incorporate the stress appraisal paradigm into research on the school-work interface (although in a more limited fashion), by considering how school hindrance appraisal impact various work outcomes (see Calderwood and Gabriel, 2017). Overall, the results of my research show that school stress appraisals may not have a strong impact on work outcomes. I say this because, despite the fact that some cross-domain effects were found, most became non-significant after controlling for work stress appraisals. But, this may be good news for practitioners because many of the findings that became non-significant, after controlling for work stress appraisals, were connected to hypotheses proposing that a particular type of school stress appraisal would have a negative impact on work. Consequently, since school stress appraisals do not seem to robustly negatively impact work, managers may not need to worry about hiring student-workers for fear that school may impair their work performance.

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APPENDIX A: MEASUREMENT SCALES

Hindrance Appraisal Scales for School and Work

Searle and Auton (2015, p.143) Response scale: 1 (strongly disagree) to 5
 scale: used in pilot study and main (strongly agree)
 study.

Original	Revised-school	Revised-work
1. It will hinder any achievements I might have 2. It will restrict my capabilities 3. It will limit how well I can do 4. It will prevent me from mastering difficult aspects of the work.	<u>Pilot study, concurrent design:</u> Over the past week, I saw school as hindering because it: 1. Hampered any achievements I may want to accomplish at school 2. Restricted my capabilities at school 3. Limited how well I could do at school 4. Prevented me from mastering difficult aspects of my school work.	<u>Pilot study, concurrent design:</u> Over the past week, I saw school as hindering because it: 1. Hampered any achievements I may want to accomplish at work 2. Restricted my capabilities at work 3. Limited how well I could do at work 4. Prevented me from mastering difficult aspects of the job

Hindrance Appraisal Scales for School and Work cont'd

Searle and Auton (2015, p.143) scale: used in pilot study and main study	Response scale: 1 (strongly disagree) to 5 (strongly agree)	
Original	Revised-school	Revised-work
See above	<p><u>Main study, concurrent design:</u> Over the past week, I saw some things related to school as a hindrance that:</p> <ol style="list-style-type: none"> 1. Hampered any achievements I may want to accomplish at school 2. Restricted my capabilities at school 3. Limited how well I could do at school 4. Prevented me from mastering difficult aspects of my school work. <p><u>Main study, lagged design:</u> For the upcoming week, I foresee that some things related to school will be a hindrance that will:</p> <ol style="list-style-type: none"> 1. Hamper any achievements I may want to accomplish at school 2. Restrict my capabilities at school 3. Limit how well I could do at school 4. Prevent me from mastering difficult aspects of my school work. 	<p><u>Main study, concurrent design:</u> Over the past week, I saw some things related to work as a hindrance that:</p> <ol style="list-style-type: none"> 1. Hampered any achievements I may want to accomplish at work 2. Restricted my capabilities at work 3. Limited how well I could do at work 4. Prevented me from mastering difficult aspects of the job.

Hindrance Appraisal Scales for School and Work cont'd

LePine et al. (2004, p.891) scale: used only in pilot study, not in main study	Response scale: 1 (strongly disagree) to 5 (strongly agree)	
Original	Revised-school	Revised-work
1. The amount of time spent on “busy work” for your classes.	Over the past week, I saw school as hindering because of:	Over the past week, I saw work as hindering because of:
2. The degree to which favoritism rather than performance affects final grades in your classes.	1. The amount of time I spent on busy work for my classes	1. The amount of time I spent on busy work rather than important tasks
3. The inability to clearly understand what is expected of you in your classes.	2. The degree to which favoritism rather than performance affected the grades in my classes	2. The degree to which favoritism rather than performance affected my work evaluations
4. The amount of hassles you need to go through to get projects/assignments done.	3. The inability to clearly understand what was expected of me in my classes	3. The inability to clearly understand what was expected of me
5. The degree to which your learning progression seems stalled.	4. The amount of hassles I needed to go through to get my projects/assignments done	4. The amount of hassles I needed to go through to get my work done
	5. The degree to which my learning progression seemed stalled	5. The degree to which my work progression seemed stalled

Threat Appraisal Scales for School and Work

Feldman et al. (2004, p.368): used only in pilot study, not in main study.	Response scale: 1 (strongly disagree) to 5 (strongly agree)	
Original	Revised-school	Revised-work
1. I feel that this task may be a negative experience for me	Over the past week, I saw school as threatening because I thought that:	Over the past week, I saw work as threatening because I thought that:
2. I feel that this task will result in negative outcomes	1. It may be a negative experience for me 2. It would result in negative outcomes for me	1. It may be a negative experience for me 2. It would result in negative outcomes
3. I feel that this task is going to have a negative impact on me	3. It would have a negative impact on me	for me 3. It would have a negative impact on me

Threat Appraisal Scales for School and Work cont'd

Sirsch et al. (2003, p.395): used in pilot study and main study	Response scale: 1 (strongly disagree) to 5 (strongly agree)	
Original	Revised-school	Revised-work
<p>When I think of the fact that I will go to a new school next year then I:</p> <ol style="list-style-type: none"> 1. worry since I may not be able to follow the lessons 2. worry since it may become too much for me 3. worry since I may not be smart enough 4. worry since I maybe do not know enough 5. worry since the school may demand too much of me 6. worry since it may become too difficult for me 7. worry since the new subjects may be too difficult for me 8. worry since I may be worse than now (note: I did not use this item in the pilot study or the main study, since it appeared redundant and non-specific). 	<p><u>Pilot Study, concurrent design:</u> Over the past week, I saw school as threatening because I thought that:</p> <ol style="list-style-type: none"> 1. I may not be able to follow the lessons 2. It would be too much for me 3. I may not be smart enough for school 4. I may not know enough for school 5. The demands of school may be too much for me 6. School would be too difficult for me 7. New subjects at school may be too difficult for me 	<p><u>Pilot study, concurrent design:</u> Over the past week, I saw work as threatening because I thought that:</p> <ol style="list-style-type: none"> 1. I may not be able to follow proper work protocols 2. It may be too much for me 3. I may not be smart enough for work 4. I may not know enough for work 5. The demands of work may be too much for me 6. Work may be too difficult for me 7. New job tasks at work may be too difficult for me

Threat Appraisal Scales for School and Work cont'd

Sirsch et al. (2003, p.395): used in pilot study and main study	Response scale: 1 (strongly disagree) to 5 (strongly agree)	
Original	Revised-school	Revised-work
See above	<p><u>Main study, concurrent design:</u> Over the past week, I saw school as a threat because I thought that:</p> <ol style="list-style-type: none"> 1. I may not be able to follow the lessons 2. School would be too much for me 3. I may not be smart enough for school 4. I may not know enough for school 5. The demands of school may be too much for me 6. School would be too difficult for me 7. New subjects at school may be too difficult for me 	<p><u>Main study, concurrent design:</u> Over the past week, I saw work as a threat because I thought that:</p> <ol style="list-style-type: none"> 1. I may not be able to follow proper work protocols 2. It may be too much for me 3. I may not be smart enough for work 4. I may not know enough for work 5. The demands of work may be too much for me 6. Work may be too difficult for me 7. New job tasks at work may be too difficult for me

Threat Appraisal Scales for School and Work cont'd

Sirsch et al. (2003, p.395): used in pilot study and main study	Response scale: 1 (strongly disagree) to 5 (strongly agree)
Original	Revised-school

See above	<p><u>Main study, lagged design:</u></p> <p>For the upcoming week, I foresee that school will be a threat because I think that:</p> <ol style="list-style-type: none">1. I may not be able to follow the lessons2. School would be too much for me3. I may not be smart enough for school4. I may not know enough for school5. The demands of school may be too much for me6. School may be too difficult for me7. New subjects at school may be too difficult for me
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Challenge Appraisal Scales for School and Work

Searle and Auton (2015, p.143): used in pilot study and main study	Response scale: 1 (strongly disagree) to 5 (strongly agree)	
Original	Revised-school	Revised-work
1. It will help me learn a lot 2. It will make the experience educational 3. It will show me I can do something new 4. It will keep me focused on doing well.	<u>Pilot study, concurrent design:</u> Over the past week, I saw school as a challenge because it: 1. Offered me the chance to learn a lot 2. Offered me a learning experience 3. Offered me the chance to do something new 4. Kept me focused on doing well	<u>Pilot study, concurrent design:</u> Over the past week, I saw work as a challenge because it: 1. Offered me the chance to learn a lot 2. Offered me a learning experience 3. Offered me the chance to do something new 4. Kept me focused on doing well
	<u>Main study, concurrent design:</u> Over the past week, I saw school as a challenge that: 1. Offered me the chance to learn a lot 2. Offered me a learning experience 3. Offered me the chance to do something new 4. Kept me focused on doing well	<u>Main study, concurrent design:</u> Over the past week, I saw work as a challenge that: 1. Offered me the chance to learn a lot 2. Offered me a learning experience 3. Offered me the chance to do something new 4. Kept me focused on doing well

Challenge Appraisal Scales for School and Work cont'd

Searle and Auton (2015, p.143): used in pilot study and main study

Response scale: 1 (strongly disagree) to 5 (strongly agree)

Original

Revised-school

See above

Main study, lagged design:

For the upcoming week, I foresee that school will be a challenge that will:

1. Offer me the chance to learn a lot
 2. Offer me a learning experience
 3. Offer me the chance to do something new
 4. Keep me focused on doing well
-

Challenge Appraisal Scales for School and Work cont'd

Peacock and Wong (1990, p.233): used only in pilot study, not in main study	Response scale: 1 (strongly disagree) to 5 (strongly agree)	
<u>Original</u>	<u>Revised-school</u>	<u>Revised-work</u>
<ul style="list-style-type: none"> 1. positive impact 2. eager to tackle 3. can become stronger 4. excited about the outcome 	<p>Over the past week, I saw school as a challenge because it:</p> <ul style="list-style-type: none"> 1. Offered the possibility to have a positive impact on me 2. Made me eager to tackle it 3. Offered me the chance to become a stronger person 4. Got me excited about the outcome 	<p>Over the past week, I saw work as a challenge because it:</p> <ul style="list-style-type: none"> 1. Offered the possibility to have a positive impact on me 2. Made me eager to tackle things on the job 3. Offered me the chance to become a stronger person 4. Got me excited about the outcome

Challenge Appraisal Scales for School and Work cont'd

LePine et al. (2004, p.891): used only in pilot study, not in main study.	Response scale: 1 (strongly disagree) to 5 (strongly agree)	
<u>Original</u>	<u>Revised-school</u>	<u>Revised-work</u>
1. The number of projects/assignments in your classes	Over the past week, I saw school as a challenge because of:	
2. The amount of time I spent working on projects/assignments for your classes	1. The number of projects/assignments I had to do in my classes	1. The number of work assignments I had
3. The difficulty of the work required in your classes	2. The amount of time I spent working on projects/assignments for my classes	2. The amount of time I spent working on my work assignments
4. The volume of coursework that I had to complete in your classes	3. The difficulty of the work required in my classes	3. The difficulty of my work assignments
5. The time pressures experienced for completing required work in your classes	4. The volume of coursework that I had to complete in my classes	4. The volume of work assignments that I needed to complete
	5. The time pressures experienced for completing required work in my classes	5. The time pressures to complete my work assignments

APPENDIX B: SUPPLEMENTARY ANALYSES: TOTAL EFFECTS OF SCHOOL AND WORK STRESS APPRAISALS ON TASK PERFORMANCE AND CWB

Table B1

Supplementary Analyses: Within-Individual Path-Analytic Regression Results for Total Effects of School Stress Appraisals on Task Performance and CWB

Type of Appraisal	Task Performance		CWB	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
Concurrent Design				
School hindrance	-.00	.02	.02	.02
<i>With control for work appraisal</i>				
School hindrance	-.01	.02	-.00	.02
Work hindrance	-.03	.03	.09***	.02
Lagged Design				
School hindrance	-.06*	.03	.01	.02
Concurrent Design				
School threat	-.01	.03	.05 [†]	.03
<i>With control for work appraisal</i>				
School threat	.02	.03	.01	.03
Work threat	-.08 [†]	.04	.07 [†]	.04
Lagged Design				
School threat	-.02	.04	.01	.03
Concurrent Design				
School challenge	.06*	.03	-.03	.03
<i>With control for work challenge</i>				
School challenge	.05 [†]	.03	-.04	.03
Work challenge	.11***	.02	-.01	.02
Lagged Design				
School challenge	.03	.04	.04	.04

Notes: Number of observations for task performance (concurrent design) = 1,166. Number of observations for CWB (concurrent design) = 1,165. Number of participants (concurrent design) = 302. Number of observations for task performance (lagged design) = 791. Number of observations for CWB (lagged design) = 792. Number of participants (lagged design) = 265. Results are based on estimating multilevel models with random coefficients, where all level 1 variables were centered around each person's mean. [†] p < .10, *p < .05, **p < .01, *** p < .001.

APPENDIX C: SUPPLEMENTARY ANALYSES: INDIRECT EFFECTS OF SCHOOL AND WORK STRESS APPRAISALS ON TASK PERFORMANCE

Table C1

Supplementary Analyses: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Hindrance Appraisal on Task Performance (Concurrent Design)

School hindrance appraisal	Positive Affect		Negative Affect		Task Performance	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School hindrance appraisal	-.05*	.02	.10***	.03	.006	.02
Positive affect					.09*	.04
Negative affect					.05	.04
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School hindrance appraisal → Task performance (via positive affect)			-.005		-.013	-.00004
School hindrance appraisal → Task performance (via negative affect)			-.005		-.014	.002
<i>Controlling for work hindrance appraisal</i>						
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
School hindrance appraisal	-.05*	.02	.10***	.03	.002	.02
Work hindrance appraisal	-.02	.02	.003	.03	-.02	.03
Positive affect					.07†	.04
Negative affect					-.06	.04
<i>Indirect effect-controlling for work hindrance appraisal</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School hindrance → Task performance (via positive affect)			-.004		-.011	.000
School hindrance → Task performance (via negative affect)			-.006		-.015	.001
Work hindrance → Task performance (via positive affect)			-.001		-.006	.003
Work hindrance → Task performance (via negative affect)			.000		-.004	.003

Notes: Number of observations = 1,170. Number of participants = 302. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals with 20,000 replications.

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table C2

Supplementary Analyses: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Hindrance Appraisal on Task Performance (Lagged Design)

School hindrance appraisal	Positive Affect		Negative Affect		Task Performance	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School hindrance appraisal	.03	.03	-.005	.03	.09	.04
Positive affect					-.01	.06
Negative affect					.02	.05
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School hindrance appraisal → Task performance (via positive affect)			.000		-.005	.004
School hindrance appraisal → Task performance (via negative affect)			.000		-.004	.003

Notes: Number of observations = 795. Number of participants = 265. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals with 20,000 replications.

Table C3

Supplementary Analyses: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Threat Stress Appraisal on Task Performance (Concurrent Design)

School threat appraisal	Positive Affect		Negative Affect		Task Performance	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School threat appraisal	-.07*	.03	.19***	.03	.02	.03
Positive affect					.09*	.04
Negative affect					-.06	.04
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School threat appraisal → Task performance (via positive affect)			-.006		-.016	.000
School threat appraisal → Task performance (via negative affect)			-.012		-.028	.003
<i>Controlling for work hindrance appraisal</i>						
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
School threat appraisal	-.06 [†]	.03	.17***	.03	.03	.03
Work threat appraisal	-.01	.04	.11**	.04	-.04	.03
Positive affect					.09*	.04
Negative affect					-.07 [†]	.04
<i>Indirect effect-controlling for work threat appraisal</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School threat → Task performance (via positive affect)			-.006		-.016	.001
School threat → Task performance (via negative affect)			-.011		-.026	.002
Work threat → Task performance (via positive affect)			-.001		-.009	.006
Work threat → Task performance (via negative affect)			-.008		-.020	.001

Notes: Number of observations = 1,170. Number of participants = 302. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals based on 20,000 replications.

[†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table C4

Supplementary Analyses: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Threat Appraisal on Task Performance (Lagged Design)

School threat appraisal	Positive Affect		Negative Affect		Task Performance	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School threat appraisal	.04	.04	.000		-.02	.04
Positive affect					-.07	.05
Negative affect					-.04	.04
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School threat appraisal → Task performance (via positive affect)			-.003		-.006	.004
School threat appraisal → Task performance (via negative affect)			.000		-.004	.003

Notes: Number of observations = 795. Number of participants = 265. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals based on 20,000 replications.

Table C5

Supplementary Analyses: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Challenge Appraisal on Task Performance (Concurrent Design)

School challenge appraisal	Positive Affect		Negative Affect		Task Performance	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School challenge appraisal	.21***	.03	-.06*	.03	.03	.03
Positive affect					.07†	.04
Negative affect					-.04	.04
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School challenge appraisal → Task performance (via positive affect)			.015		-.001	.032
School challenge appraisal → Task performance (via negative affect)			.003		-.002	.009
<i>Controlling for work challenge appraisal</i>						
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
School challenge appraisal	.20***	.03	-.07*	.03	.04	.03
Work challenge appraisal	.11***	.02	.003	.03	.10***	.02
Positive affect					.03	.04
Negative affect					-.05	.04
<i>Indirect effect-controlling for work challenge appraisal</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School challenge → Task performance (via positive affect)			.007		.004	.022
School challenge → Task performance (via negative affect)			.003		-.002	.011
Work challenge → Task performance (via positive affect)			.004		-.005	.014
Work challenge → Task performance (via negative affect)			.000		-.004	.003

Notes: Number of observations = 1,170. Number of participants = 302. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals based on 20,000 replications. † $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table C6

Supplementary Analyses: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Challenge Appraisal on Task Performance (Lagged Design)

School challenge appraisal	Positive Affect		Negative Affect		Task Performance	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School challenge appraisal	.01	.04	-.03	.04	-.009	.08
Positive affect					-.06	.11
Negative affect					-.12	.13
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School challenge appraisal → Task performance (via positive affect)			-.001		-.013	.009
School challenge appraisal → Task performance (via negative affect)			.003		-.011	.024

Notes: Number of observations = 795. Number of participants = 265. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals based on 20,000 replications.

APPENDIX D: SUPPLEMENTARY ANALYSES: INDIRECT EFFECTS OF SCHOOL AND WORK STRESS APPRAISALS ON CWB

Table D1

Supplementary Analyses: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Hindrance Appraisal on CWB (Concurrent Design)

School hindrance appraisal	Positive Affect		Negative Affect		CWB	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School hindrance appraisal	-.05*	.02	.10***	.03	.02	.02
Positive affect					.008	.04
Negative affect					.06	.04
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School hindrance appraisal → CWB (via positive affect)			.000		-.005	.004
School hindrance appraisal → CWB (via negative affect)			.006		-.002	.016
<i>Controlling for work hindrance appraisal</i>						
School hindrance appraisal	-.05*	.02	.10***	.03	-.001	.02
Work hindrance appraisal	-.02	.02	.004	.03	.08	.02
Positive affect					-.006	.03
Negative affect					.05	.04
<i>Indirect effect-controlling for work hindrance appraisal</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School hindrance → CWB (via positive affect)			.000		-.004	.005
School hindrance → CWB (via negative affect)			.005		-.002	.014
Work hindrance → CWB (via positive affect)			.000		-.002	.002
Work hindrance → CWB (via negative affect)			.000		-.003	.004

Notes: Number of observations = 1,170. Number of participants = 302. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals.

† p < .10, * p < .05, ** p < .01, *** p < .001.

Table D2

Supplementary Analyses: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Hindrance Appraisal on CWB (Lagged Design)

School hindrance appraisal	Positive Affect		Negative Affect		Task Performance	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School hindrance appraisal	.03	.03	-.005	.03	.02	.02
Positive affect					-.03	.03
Negative affect					.03	.04
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School hindrance appraisal → CWB (via positive affect)			-.001		-.006	.002
School hindrance appraisal → CWB (via negative affect)			.000		-.004	.003

Notes: Number of observations = 795. Number of participants = 265. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals.

Table D3

Supplementary Analyses: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Threat Appraisal on CWB (Concurrent Design)

School threat appraisal	Positive Affect		Negative Affect		CWB	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School threat appraisal	-.07*	.03	.19***	.03	.03	.03
Positive affect					-.003	.04
Negative affect					.06	.04
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School threat appraisal → CWB (via positive affect)			.024		-.005	.006
School threat appraisal → CWB (via negative affect)			.011		-.004	.027
<i>Controlling for work threat appraisal</i>						
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
School threat appraisal	-.07 [†]	.03	.17***	.03	.03	.03
Work threat appraisal	-.02	.04	.11**	.04	.05	.04
Positive affect					-.03	.04
Negative affect					.05	.04
<i>Indirect effect-controlling for work threat appraisal</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School threat → CWB (via positive affect)			.002		-.003	.009
School threat → CWB (via negative affect)			-.029		-.065	-.006
Work threat → CWB (via positive affect)			.000		-.003	.005
Work threat → CWB (via negative affect)			.006		-.002	.017

Notes: Number of observations = 1,170. Number of participants = 302. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals.

[†] $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table D4

Supplementary Analyses: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Threat Appraisal on CWB (Lagged Design)

School threat appraisal	Positive Affect		Negative Affect		CWB	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School threat appraisal	.03	.04	.000	.04	.02	.03
Positive affect					-.04	.04
Negative affect					.000	.04
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School threat appraisal → CWB (via positive affect)			-.001		-.008	.003
School threat appraisal → CWB (via negative affect)			.000		-.005	.005

Notes: Number of observations = 795. Number of participants = 265. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals.

Table D5

Supplementary Analyses: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Challenge Appraisal on CWB (Concurrent Design)

School challenge appraisal	Positive Affect		Negative Affect		CWB	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School challenge appraisal	.21***	.03	-.07*	.03	-.07*	.03
Positive affect					.04	.04
Negative affect					.04	.04
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School challenge appraisal → CWB (via positive affect)			.008		-.007	.024
School challenge appraisal → CWB (via negative affect)			-.003		-.011	.003
<i>Controlling for work challenge appraisal</i>						
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
School challenge appraisal	.20***	.03	-.07*	.03	-.08	.03
Work challenge appraisal	.11***	.02	.003	.03	-.008	.02
Positive affect					.03	.04
Negative affect					.04	.04
<i>Indirect effect-controlling for work challenge appraisal</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School challenge → CWB (via positive affect)			.006		-.009	.022
School challenge → CWB (via negative affect)			-.003		-.011	.003
Work challenge → CWBs (via positive affect)			.003		-.005	.012
Work challenge → CWB (via negative affect)			.000		-.003	.004

Notes: Number of observations = 1,170. Number of participants = 302. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals.

* $p < .05$, ** $p < .01$, *** $p < .001$.

Table D6

Supplementary Analyses: Within-Individual Path-Analytic Regression Results for Indirect Effects of School Challenge Appraisal on CWB (Lagged Design)

School challenge appraisal	Positive Affect		Negative Affect		CWB	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
<i>Main Effects</i>						
School challenge appraisal	.01	.04	-.02	.04	.06	.04
Positive affect					-.06	.05
Negative affect					.007	.04
<i>Indirect effect</i>			<i>Estimate</i>		<i>95% LLCI</i>	<i>95% ULCI</i>
School challenge appraisal → CWB (via positive affect)			-.001		-.008	.005
School challenge appraisal → CWB (via negative affect)			.000		-.005	.004

Notes: Number of observations = 795. Number of participants = 265. The results are level 1 estimates from multilevel path-analytic models with random coefficients in which all variables are centered at individuals' means. *LLCI* = lower level of the 95% confidence interval. *ULCI* = upper level of the 95% confidence interval. Confidence intervals are Monte Carlo confidence intervals.

APPENDIX E: SUMMARY OF SUPPLEMENTARY ANALYSES

Table E1

Supplementary Analyses: Summary Table of Results for Relations of School Stress Appraisals, Affect, and Task Performance

	Relation	Concurrent Design	Concurrent Design (with controls)	Lagged Design
Total Effects	School hindrance and TASK	ns	ns	negative
	School threat and TASK	ns	ns	ns
	School challenge and TASK	positive	ns	ns
IVs to Intervening Variables	School hindrance and PA	negative	negative	ns
	School threat and PA	negative	ns	ns
	School challenge and PA	positive	positive	ns
	School hindrance and NA	positive	positive	ns
	School threat and NA	positive	positive	ns
	School challenge and NA	negative	negative	ns
Intervening Variables to DV	PA and TASK	ns*	ns*	ns
	NA and TASK	ns	ns	ns
Indirect Effects	Hindrance → NA → TASK	ns	ns	ns
	Hindrance → PA → TASK	negative	ns	ns
	Threat → NA → TASK	ns	ns	ns
	Threat → PA → TASK	ns	ns	ns
	Challenge → PA → TASK	ns	positive	ns
	Challenge → NA → TASK	ns	ns	ns

Notes: Number of observations for direct effects (concurrent design) = 1,166. Number of observations for effects other than direct effects (concurrent design) = 1,170. Number of participants (concurrent design) = 302. Number of observations for direct effects (lagged design) = 791. Number of observations for effects other than direct effects (lagged design) = 795. Number of participants (lagged design) = 265. Information pertaining to rows labelled as “IVs to Intervening Variables” and “Intervening Variables to DVs” was drawn from the analyses involving tests of indirect effects and they do not reflect total effects, ns = not significant. *ns = non-significant in all indirect effect models, except the one with school threat appraisal, where there was a positive relationship.

Table E2

Supplementary Analyses: Summary Table of Results for Relations of School Stress Appraisals, Affect, and CWB

	Relation	Concurrent Design	Concurrent Design (with controls)	Lagged Design
Total Effects	School hindrance and CWB	ns	ns	ns
	School threat and CWB	ns	ns	ns
	School challenge and CWB	ns	ns	ns
IVs to Intervening Variables	School hindrance and PA	negative	negative	ns
	School threat and PA	negative	ns	ns
	School challenge and PA	positive	positive	ns
	School hindrance and NA	positive	positive	ns
	School threat and NA	positive	positive	ns
	School challenge and NA	negative	negative	ns
Intervening Variables to DV	PA and CWB	ns	ns	ns
	NA and CWB	ns	ns	ns
Indirect Effects	Hindrance → NA → CWB	ns	ns	ns
	Hindrance → PA → CWB	ns	ns	ns
	Threat → NA → CWB	ns	negative	ns
	Threat → PA → CWB	ns	ns	ns
	Challenge → PA → CWB	ns	ns	ns
	Challenge → NA → CWB	ns	ns	ns

Notes: Number of observations for direct effects (concurrent design) = 1,165. Number of observations for effects other than direct effects (concurrent design) = 1,170. Number of participants (concurrent design) = 302. Number of observations for direct effects (lagged design) = 792. Number of observations for effects other than direct effects (lagged design) = 795. Number of participants (lagged design) = 265. Information pertaining to rows labelled as “IVs to Intervening Variables” and “Intervening Variables to DVs” was drawn from the analyses involving tests of indirect effects and they do not reflect total effects, ns = not significant.

Table E3

Supplementary Analyses: Summary Table of Results for Relations of Work Stress Appraisals, Affect, and Task Performance

	Relation	
Total Effects	Work hindrance and TASK	ns
	Work threat and TASK	ns
	Work challenge and TASK	positive
IVs to Intervening Variables	Work hindrance and PA	ns
	School threat and PA	ns
	School challenge and PA	positive
	School hindrance and NA	ns
	School threat and NA	positive
	School challenge and NA	ns
Intervening Variables to DV	PA and TASK	ns*
	NA and TASK	ns
Indirect Effects	Hindrance → NA → TASK	ns
	Hindrance → PA → TASK	ns
	Threat → NA → TASK	ns
	Threat → PA → TASK	ns
	Challenge → PA → TASK	ns
	Challenge → NA → TASK	ns

Notes: Number of observations for direct effects = 1,167; Number of observations for all effects other than direct effects = 1,170. Number of participants = 302. Information pertaining to rows labelled as “IVs to Intervening Variables” and “Intervening Variables to DVs” was drawn from the analyses involving tests of indirect effects and they do not reflect total effects. ns = not significant, *ns = non-significant in all indirect effect models, except the one when controlling for work threat appraisal, where there was a positive relationship.

Table E4

Supplementary Analyses: Summary Table of Results for Relations of Work Stress Appraisals, Affect, and CWB

	Relation	
Total Effects	Work hindrance and CWB	positive
	Work threat and CWB	ns
	Work challenge and CWB	ns
IVs to Intervening Variables	Work hindrance and PA	ns
	School threat and PA	ns
	School challenge and PA	positive
	School hindrance and NA	ns
	School threat and NA	positive
	School challenge and NA	ns
Intervening Variables to DV	PA and CWB	ns
	NA and CWB	ns
Indirect Effects	Hindrance -> NA -> CWB	ns
	Hindrance -> PA -> CWB	ns
	Threat -> NA -> CWB	ns
	Threat -> PA -> CWB	ns
	Challenge -> PA -> CWB	ns
	Challenge -> NA -> CWB	ns

Notes: Number of observations for direct effects = 1,166; Number of observations for all effects other than direct effects = 1,170. Number of participants = 302. Information pertaining to rows labelled as “IVs to Intervening Variables” and “Intervening Variables to DVs” was drawn from the analyses involving tests of indirect effects and they do not reflect total effects. ns = not significant