6-2019

I want to be busy: Instrumental regulation of busyness among conscientious individuals

Brandon KOH
Singapore Management University, brandon.koh.2014@phdps.smu.edu.sg

I WANT TO BE BUSY: INSTRUMENTAL REGULATION OF BUSYNESS AMONG CONSCIENTIOUS INDIVIDUALS

BRANDON KOH

SINGAPORE MANAGEMENT UNIVERSITY

2019

I Want to be Busy: Instrumental Regulation of Busyness among Conscientious Individuals

Brandon Koh

Submitted to School of Social Sciences in partial fulfillment of the requirements for the Degree of Doctor of Philosophy in Psychology

Dissertation Committee:

Dr. Angela Leung (Supervisor/Chair)
Associate Professor of Psychology
Singapore Management University

Dr. David Chan
Professor of Psychology
Singapore Management University

Dr. William Tov
Associate Professor of Psychology
Singapore Management University

Dr. Albert Lee
Assistant Professor of Psychology
Nanyang Technological University

Singapore Management University
2019

Declaration

I hereby declare that this PhD dissertation is my original work and it has been written by me in its entirety. I have duly acknowledged all the sources of information which have been used in this dissertation.

This PhD dissertation has also not been submitted for any degree in any university previously.

Brandon Koh
6 June 2019

I want to be busy: Instrumental regulation of busyness among conscientious individuals

Brandon Koh

ABSTRACT

A sense of busyness, the subjective feeling of having a long and effortful work schedule, is increasingly prevalent in today's societies. Although people commonly feel busy because of externally imposed work pressures, the motivated self-regulation perspective suggests that people might intentionally put themselves in a busy state for instrumental reasons. Grounded in the instrumental emotion regulation framework, this research theorizes that people instrumentally regulate themselves to experience busyness – a negative affect – to facilitate a performance motive. In other words, people might desire to feel busyness despite its unpleasant hedonic tone in order to attain higher performance. Results from three studies support the hypotheses that busyness is experienced as a trait-consistent experience for conscientious individuals, and that they will comparatively perform better under higher levels of busyness. Across three studies, conscientious individuals consistently exhibit a higher *preference for busyness.* In turn, they tend to self-regulate towards busyness in preparation for challenging tasks (Study 1). Experimental studies further showed that conscientious individuals exhibit better cognitive performance under higher (vs. lower) perceived workload (Study 2) and under higher (vs. lower) levels of busyness experienced in the real world (Study 3). Importantly, these performance benefits are unique to those with an autonomous preference for busyness, but not those who feel compelled by workaholism. The potential contributions and implications are discussed.

Keywords: Affect regulation; busyness; conscientiousness; instrumental emotion regulation; trait-consistent affect

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

Foremost, I would like to thank Prof Angela Leung for her tutelage and support throughout my Ph.D. candidature. Words alone cannot fully express how grateful I am to be your student. You have been an extremely kind and patient supervisor, always supporting me through times I was not up to mark. I owe so much of what we have accomplished together to your devotion. You have certainly made my journey in SMU a very positive and meaningful one.

I would also like to thank Prof David Chan, William Tov, and Albert Lee for devoting their time to serve on my dissertation committee. Their many insightful comments have pushed me to strengthen the quality of my research.

Additionally, I owe a big thank you to Prof David Chan, who beyond contributing to my research has also provided me many excellent advice and opportunities to help me in my career. It was truly an honor to be able to learn from someone so renowned in the field.

I also want to thank Prof William Tov for the numerous times you have helped me with advanced statistical methods, both in my dissertation and especially those that I spontaneously raised during our corridor conversations.

I also like to acknowledge my co-supervisor Prof Tsai Ming-Hong. In my first year, you challenged me to think critically and methodically about ideas. Working with you also taught me to be more meticulous, organized, and efficient. Most importantly, you are also a very caring mentor who looks out for the welfare of your students. I was truly fortunate to get to work with you.

I also want to thank Prof Serena Wee for all the time you took to mentor me. You taught me many important life lessons that has shaped me both to be a better person and a more impactful teacher to my students.

My gratitude extends to my most conscientious team of research assistants who have been extremely helpful throughout my PhD Candidature. In chronological order of their enrolment, they are: Choo Wanching, Choo Wanyee, Shalyn Stevens, Amanda Goh, Zoey Loh, Janey Lim, Li Jiaying, Alecia Lim, Cheryl Cher, Felicia Ang, Lynn Chiang, and Jermaine Lim.

Next, I would like to express my heartfelt gratitude to Huang Tengjiao, Choo Wanyee, Tan Peng Peng, and Gladys Ng. Thank you for being such truly genuine friends who never failed to lend a listening ear, provide help when needed, and for being unceasingly uplifting and supportive. I am truly blessed to have met great friends like you who have made SMU a happy and meaningful place for me.

Last but most importantly, I want to thank my wife, Jocelyn Lee, for all the love and support she provided me through this journey, and for being the reason that this is all worthwhile.

DEDICATION

Dedicated to my wife, Jocelyn Lee, for her undying

love and support throughout my life's journey.

CHAPTER 1: Introduction

"Busy!" has increasingly become the default response when people are asked how they are. In recent decades, an emergent culture of busyness, or sometimes denigrated as the "cult of busyness" (Dickinson, 2016) characterizes the society's immersive and sometimes compulsive engagement with work accompanied by frequent feelings of being constantly behind or "time-starved" (Kreider, 2012; Schulte, 2014). Supporting these observations, reports of feeling stressed and rushed have steadily increased in U.S. national surveys since the 1960s (Robinson & Godbey, 2005). In the 2000 National Survey of Work, 45% of respondents reported feeling more stressed than they did five years before. Yet, people seem relatively unconcerned about facing more time pressure and stress, but are instead worried about their job security and their relations with coworkers. These patterns are most prevalent in western societies, but are also readily observable in developed countries around the world (Hamermesh & Lee, 2007).

Busyness, as emphasized in modern cultures, could have stemmed from the American ideal to maintain a functional, productive, and goal-driven state. Such well-ingrained work-ethics render it difficult for people to imagine a life that is not busy, urging people to even justify the time "wasted" on leisure (Darrah, Freeman, & English-Lueck, 2007; Ekerdt, 1986). Time, once viewed as a commodity to spare (Gershuny, 2005), is now often treated as a limited resource that is valued and hoarded like monetary wealth (Liu & Aaker, 2008; Mogilner & Aaker, 2009; Zauberman & Lynch Jr, 2005). This is in stark contrast to the 19th century, when squandering time indulging in leisure to display capital wealth and power by the "leisure class" (Veblen,

1899) was a symbol of success. Instead, busyness has become increasingly desired, and being parched for time signals that the busy individual is constantly in demand or of high status (Bellezza, Paharia, & Keinan, 2016; Gershuny, 2005). This may explain the gradual increase in self-reported busyness in the latter part of the 20th century (Robinson & Godbey, 2010; Schulte, 2014).

Interestingly, objective social indicators show that work hours have actually declined, with the exception that women with children now work longer compared to the past due to the rising trend of dual-income families (Gershuny, 2005; Hamermesh & Lee, 2007). Nevertheless, the subordinate working class – those with jobs demanding mechanical labor but lower educational qualifications – has gained comparatively more leisure time over the years. These demographic patterns associate busyness with higher human capital and status. In fact, it is not uncommon to find people bragging about their high levels of busyness (Hamermesh & Lee, 2007), displaying their busyness like a "badge of honor" (Gershuny, 2005; Levine, 2005).

These recent insights hint at the value of busyness in society. To advance this understanding with a novel perspective, this research moves from viewing busyness as a cultural ideal or environmental imposition to examine busyness as an individual's self-regulated affective state. Grounded in the instrumental emotion regulation approach (Tamir, 2016), the current research proposes that some people may value busyness for its ability to motivate higher task performance, and thus prefer to feel busyness despite its unpleasant hedonic tone. I further argue why individuals high in trait

conscientiousness may be more prone to instrumentally upregulate busyness and reap greater performance benefits from it.

The Affective State of Busyness

In the current research, busyness is conceptualized as an affective state. Following core affect theory, an affect is defined as a consciously accessible subjective feeling characterized by *valence,* an evaluation of hedonic pleasantness/unpleasantness, and *activation*, a sense of mobilization of energy. Additionally, through the process of affect regulation, people can try to alter the affective states that they experience (Gross, 2015; Russell, 2003; Russell & Barrett, 1999). Regarding its affective nature, empirical evidence suggests that busyness is commonly viewed as a negative and activating affective state. In a large (N = 2250) experience sampling study (Killingsworth & Gilbert, 2010), people reliably report themselves as significantly unhappier when doing paid work. Unsurprisingly, people are happiest when engaging in leisurely tasks such as talking, exercising, playing, and especially having sex. In another experience sampling study, even though people view work as a relatively meaningful activity, they also rate it as the most unpleasant activity (White & Dolan, 2009). Additionally, data collected for this research also directly confirmed that people perceive the feeling of busyness as an unpleasant and activating affective state.[1]

This conceptualization of busyness as an affective state aligns well with past research defining busyness as a *subjective feeling* arising from the

[1] As part of another study, participants (N = 192, M_{age} = 21.15, SD_{age} = 1.46, 71% female) responded to the prompt, "In general, busyness feels:" on two 7-point bipolar semantic differential scales of unpleasant-pleasant and calming-arousing. Two t-tests tested difference of the score from the mid-point (4) of the scale. Results confirmed that busyness is experienced as somewhat unpleasant (M = 3.76, SD = 1.33, t = -2.54, p = .010) and arousing (M = 4.67, SD = 1.17, t = 7.97, p < .001).

perceived quantity of work one is engaged in, and the perceived amount of time and effort that work would require (Gershuny, 2005; Wilcox, Laran, Stephen, & Zubcsek, 2016). As a subjective state, busyness is conceptually independent (although correlated) from the objective workload confronted by an individual. Instead, it is influenced by comparing how taxing or densely packed one's schedule is relative to the expected norms in his or her social environment (Gershuny, 2005).

It is important to highlight several qualifications about busyness. First, busyness concerns engagement with career-related or paid work, and not simply time-consuming activities. Studies showed that people are less happy when doing work compared to doing menial tasks and chores (e.g., commuting, grooming, doing housework); this shows that being busy with paid work is more unpleasant then being preoccupied with other typically unpleasant tasks (Killingsworth & Gilbert, 2010).

Second, some data suggest that the affective experience of busyness is primarily driven by the quantity (duration or amount) of work. Two alternative possibilities are that busyness stems from working fast or multi-tasking (i.e., speed) or spending more time working because it feels meaningful. Bellezza and colleagues (2015) found that people perceive busier individuals to have more work, work faster, and have more meaningful work. But critically, the quantity dimension explained about three times the variance of perceived busyness compared to the meaning and speed dimensions. In their later experiments, participants judged a target's busyness and busyness-associated traits according to their long work hours, but not their speed or meaning at

work. These findings suggest that quantity of work weighs dominantly in lay conceptualizations of busyness.

Lastly, although the current research focuses on *why* people regulate the affective experience of busyness, it is worth mentioning *how* people regulate busyness. The process model of emotion regulation (Gross, 1998a, 1998b, 2015) proposes that people regulate affect using strategies that operate on four components of affect, namely: situation, attention, appraisal, and response. For example, people can engage in situation selection or modification by taking on additional discretionary tasks to upregulate busyness, or negotiating the deadlines of extraneous tasks to feel less busy. They may also selectively deploy attention to focus on the amount of work they have, or on distracting leisurely activities to downregulate busyness. People can also modulate felt busyness through reappraising their task demands and available resources. Lastly, individuals can alter their behavioral responses even after the affective experience has taken form (i.e., response-focused affect regulation, Gross, 1998a; Gross, 2008); for example, by staying in the office late to enhance the feeling of busyness. These examples demonstrate several ways people can regulate felt busyness. By building on the instrumental emotion regulation perspective, the current research further questions whether people do regulate their affective state of busyness and why they do so.

Instrumental Emotion Regulation

The instrumental emotion regulation approach posits that people regulate their affective states in order to successfully pursue instrumental goals (Tamir, 2011). This extends from earlier research on *how* (Gross, 2015; Gross

& John, 2003) rather than *why* people regulate their affective states. As to why, it was commonly assumed that people regulate affective states with a hedonic motive to maintain pleasant states (Larsen, 2000; Thayer, 2000). However, just as people would exercise self-control to forgo short-term pleasure to maximize long-term gains, people would regulate their affect to facilitate goal pursuits, sometimes at the expense of feeling good (Campos, Walle, Dahl, & Main, 2011; Clore & Robinson, 2000; Tamir, 2005; Thompson, 2011). In a recent review, Tamir (2016) summarized four key motives of instrumental emotion regulation, namely: performance, epistemic, eudaimonic, and social motives. The current research focuses on the performance motive, but it is reasonable to argue that the instrumental regulation of busyness could also benefit the other motives. In sections to follow, I first review evidence of the instrumental value of busyness in enhancing performance. Next, I review evidence that people's preferred instrumental affective states are linked to their personality traits, also referred as trait-consistent affect. In turn, I hypothesize that conscientiousness would promote a trait-consistent preference for busyness, and therefore more (vs. less) conscientious individuals would perform better in cognitive tasks under high busyness.

Performance motives. Within the instrumental emotion regulation approach, a central focus has been to show that people regulate affective states with a *performance motive*, that is, to reap tangible benefits from excelling at certain goals (Forbes, 2011; Higgins, 2014). A robust body of evidence showed that people engage in instrumental (rather than hedonic) emotion regulation when they expect particular affective states to help them meet the

demands of performance tasks (Tamir, 2016). For example, participants wanted to feel sad if they believed that sadness would enhance their analytic performance (Cohen & Andrade, 2004), or feel angry when the accompanied increase in aggression improved their performance on a competitive game (Tamir, Mitchell, & Gross, 2008). The perceived instrumentality of emotions to satisfy performance motives was well demonstrated by Tamir, Bigman, Rhodes, Salerno, and Schreier's (2015) study, which found that participants wanted to feel angry only when they expected to reap performance benefits from their anger, and not when they were led to believe that it was irrelevant or detrimental to performance. Furthermore, the willingness to feel angry dissipated when there was no incentive for performance, regardless of whether they expected anger to facilitate performance.

Busyness and performance. The current research argues that people would instrumentally regulate busyness. As such, it is important to first establish potential performance benefits of experiencing busyness. Generally, the more things people have to do, the faster they are likely to do them (Levine, 2005). One large study compared the speed of over-the-counter services and how fast people walk across the major cities of 31 countries. Results showed that the busier a culture is, the faster people work and conduct their everyday lives (Levine, 1997; Levine & Norenzayan, 1999). Studies on older adults also showed positive associations between busyness and higher cognitive abilities reflected in processing speed, working memory, episodic memory, reasoning, and crystallized knowledge (Festini, McDonough, & Park, 2016).

More causal evidence was revealed by research examining the effect of tight (vs. looser) deadlines, which corresponds closely with busyness. In general, people with busy work schedules (i.e., tight deadlines) are more likely to exercise self-control to minimize procrastination and maximize efficiency (Ariely & Wertenbroch, 2002). Despite that sometimes tight deadlines could not be met (i.e., planning fallacy; Buehler, Griffin, & Ross, 1994), people still initiate action more quickly and complete tasks faster overall (Buehler, Peetz, & Griffin, 2010). Some studies showed that missing deadlines invokes a sense of failure that dampens motivation and self-efficacy (Bandura, 1977; Cochran & Tesser, 1996; Vohs, Park, & Schmeichel, 2013). However, Wilcox and colleagues (2016) found that busyness promotes the appraisal that one is using time effectively. Such positive reappraisal mitigates the sense of failure accompanying missed deadlines and motivates individuals to continue pursuing and completing the tasks even when the deadline has been missed. Tight deadlines also motivate individuals to avoid distracting activities (Shu & Gneezy, 2010). Importantly, although tighter deadlines decrease task enjoyment, people work longer and perform better on those tasks (Ariely & Wertenbroch, 2002).

Together, these findings point out the instrumental value of busyness in facilitating performance motives. Busyness provides an impetus to initiate goal pursuit, maintain goal focus, and recruit other self-regulation resources (e.g., exercising self-control, setting deadlines, using goal-setting strategies, blocking distraction), which ultimately increases one's efficiency and performance. When this instrumental value is recognized by individuals, they

may then prefer feeling busyness in order to leverage its benefits on task performance.

Individual Differences in Instrumental Emotion Regulation

Another key proposition of the instrumental emotion regulation theory is that people prefer affective states that are motivationally consistent with their personality trait (see also Augustine, Hemenover, Larsen, & Shulman, 2010; Rusting & Larsen, 1995). For example, under performance demands, individuals with high trait extraversion prefer to regulate toward positive affect (Tamir, 2009), whereas individuals with high trait neuroticism prefer to regulate toward negative affect (Tamir, 2005). When experiencing these preferred *trait-consistent affect*, their performance improves.

The regulatory fit theory (Higgins, 2000, 2005) provides an explanatory account for the value of such trait-consistent affective experience. It posits that people are motivated to pursue goals with means that align with their chronic motivational orientation. For instance, promotion-focused individuals prefer to pursue goals with eagerness and approach-related strategies, whereas prevention-focused individuals prefer to use vigilance and avoidance-related strategies (Freitas & Higgins, 2002). When one's traits and task approach align, individuals "feel right" about their goal pursuits, thus increasing engagement, persistence, and ultimately performance (Higgins, 2000, 2005). Similarly, trait-consistent affective experiences can motivationally align individuals to pursue goals in ways that are typical of their personality. For example, individuals high in trait neuroticism are often motivated to avoid threats (Carver, Sutton, & Scheier, 2000). Therefore, one possibility for their frequent feelings of worry and anxiety (Watson, 2000) may be due to their reliance on vigilance provoking

affect in order to facilitate their threat avoidance and management strategies (Carver, 2001; Elliot & Thrash, 2002). Supporting the trait-affect link between neuroticism and worrisome affective states, research showed that individuals high (vs. low) in neuroticism preferred activities that made them feel worried before working on a demanding task, and actually performed better on these tasks when they felt worried rather than happy (Leung et al., 2014; Tamir, 2005). In another research, individuals high in trait extraversion preferred to feel happy when anticipating effortful tasks, but not when anticipating non-effortful tasks (Tamir, 2009).

By highlighting the role of trait-consistent affect in boosting performance, the instrumental emotion regulation theory shows that the relationship between a particular affective state and performance is not fixed. For instance, creativity is a highly valued aspect of performance that is typically thought to be facilitated by positive affect, and generally inhibited (although conclusions are mixed) by negative affect (Amabile, Barsade, Mueller, & Staw, 2005; Baas, De Dreu, & Nijstad, 2008; De Dreu, Baas, & Nijstad, 2008). Yet, Leung and colleagues (2014) found that after individuals high on trait neuroticism had recalled their experience that involved feeling worried – a neuroticism-consistent affect, they performed more creatively under cognitive load as compared to recalling feeling happy. Findings also confirmed that people made the choice to self-regulate towards their trait-consistent affective states during goal pursuits: Individuals with higher neuroticism chose to recall worrisome as opposed to happy, calm, and boring events in anticipation of performing an effortful creativity task. Importantly, findings revealed that individuals experiencing trait-consistent affect also

reported higher intrinsic task motivation, which mediated the effect between trait-consistent affect and creative performance (Leung et al., 2014).

These findings highlight the well-established performance benefits resulting from trait-consistent affect for those high on trait neuroticism (i.e., worry) and trait extraversion (i.e., happiness). By extending these findings, the present research sets out to examine for the first time the novel link between trait conscientiousness and the affective state of busyness.

Conscientiousness and Affective Regulation of Busyness

Conscientiousness, one of the Big Five personality factors, captures an individual's orderly and disciplined pursuit of duties and accomplishments that provides direction to one's life (Costa & McCrae, 1998). Its precise conceptualization is debated and how its facets are specified vary (Hough, 1992; Mount & Barrick, 1995; Roberts, Chernyshenko, Stark, & Goldberg, 2005). In this paper, conscientiousness is operationalized per the NEO-PI-R (Costa & McCrae, 1992, 1998; McCrae & Costa, 1987) defined by six facets, namely: competence, orderliness, dutifulness, achievement-striving, self-discipline, and deliberation. Some have argued that this specification underrepresents some facets such as impulse control, moral virtues (Hough & Ones, 2001; Roberts et al., 2005), decisiveness, and formalness (Roberts, Bogg, Walton, Chernyshenko, & Stark, 2004). Notwithstanding, adopting the robustly validated NEO-PI-R's taxonomy allows the current research to align with the prevalent understanding of conscientiousness. This specification has also shown evidence of robustness across cultures (McCrae & Costa, 1997; McCrae & Terracciano, 2005) and biological bases as suggested by heritability studies (Jang, Livesley, & Vemon, 1996).

I propose that conscientiousness will predict a trait-consistent affective preference for busyness. Crucially, high work engagement directly supports conscientious individuals' motive for an ordered, disciplined, and self-directed pursuit of accomplishments (Costa & McCrae, 1998). In particular, as reflected among its facets, conscientious individuals are *achievement-striving*, reflecting their tendency to "have goals which they pursue in an orderly and energetic fashion; that they value achievement and excellence for its own sake; and that they may sometimes devote themselves excessively to work" (Costa & McCrae, 1998, p. 122). Conscientious individuals also seek *competence,* the sense that one is capable, sensible, and accomplished. They also tend to have higher *self-discipline*, being more persistent in goal-pursuits, especially in the face of boredom or distraction (Costa, McCrae, & Dye, 1991). Notably, these motivations are thought not to stem from desires for economic gain, status, or social dominance, which are tendencies more typical of extraverts (Hogan & Hogan, 1992; Watson & Clark, 1997). Instead, conscientious individuals are intrinsically motivated to be hard-working and goal-oriented (Costa & McCrae, 1998).

Given their strong motivation to persist and succeed at work, it is reasonable to posit that the affective state of busyness closely aligns with the chronic motives of conscientious individuals. Feeling busy could signal to conscientious individuals that they are making progress towards their goals and that they are devoting themselves to promote their competence and achievements, thus strengthening their motivation towards these endeavors. Such an alignment between busyness and the motivational ideals of conscientiousness alludes to the benefits of feeling busy as a trait-consistent

affect for conscientious individuals, such as enhanced task motivation and performance.

If busyness is indeed a trait-consistent affect of conscientiousness, it is expected that conscientious individuals would prefer to experience busyness or put themselves in busy situations. In support of this, empirical findings have positively associated conscientiousness with a drive to work (Andreassen, Hetland, & Pallesen, 2010; Jackson, Fung, Moore, & Jackson, 2016), and a dedication to work (Dudley, Orvis, Lebiecki, & Cortina, 2006; Roberts et al., 2005). The instrumental emotion regulation approach further suggests that people implicitly learn about trait-consistent affective states that provide them instrumental benefits, which then manifest as trait-like affective preferences (Cohen & Andrade, 2004; Tamir, 2016). Thus, if busyness is trait-consistent with conscientiousness, individuals with higher trait conscientiousness will show a higher propensity to prefer experiencing busyness. It is hypothesized that:

H1: Individuals with higher (vs. lower) levels of conscientiousness will have higher preference for busyness.

Furthermore, as a trait-consistent affect, the experience of busyness will also be instrumental (i.e., performance-enhancing) for conscientious individuals who prefer feeling busyness. As such, under a performance motive, they may self-regulate towards higher busyness in preparation for demanding tasks. They are also more likely to derive actual performance benefits when experiencing higher levels of situationally induced busyness, such as when being challenged with higher workload. It is thus hypothesized that:

H2: Individuals with higher (vs. lower) levels of conscientiousness will have higher preference for busyness, which then moderates the effect of anticipated workload (single vs. multiple tasks) on the choice to feel busyness. Specifically, individuals with higher (vs. lower) preference for busyness are more likely to choose feeling busyness in anticipation of completing multiple (vs. single) tasks (Study 1).

H3: Individuals with higher (vs. lower) levels of conscientiousness will have higher preference for busyness, which then moderates the effect of perceived workload (Study 2: single vs. multiple tasks) or the experience of real-world busyness (Study 3: low vs. high busyness) on task performance. Specifically, individuals with higher (vs. lower) preference for busyness are more likely to show higher task performance when they face higher perceived workload (Study 2) or higher real-world busyness (Study 3).

CHAPTER 2: Overview of Current Research

Three studies were conducted to test the trait-consistent affective link between conscientiousness and busyness, and the performance benefits it reaps. Study 1 examined that conscientious individuals would prefer to feel busy when anticipating to complete a higher workload of demanding tasks. Participants were informed that they would engage in an affect eliciting recall task prior to completing either one or five demanding tasks. Participants then rated different affective events that they preferred to recall. Because of its unpleasant hedonic tone, it is expected that participants instrumentally regulate towards busyness only when the perceived workload is high. Furthermore, this

pattern is expected to be more pronounced for individuals with high conscientiousness who display higher preference for busyness.

Studies 2 and 3 aimed to further establish the instrumental value of trait-consistent busyness to result in actual improvements in task performance. Study 2 sought to experimentally elicit busyness in two ways. First, by inducing high or low felt busyness with an affective recall task before the performance task. Second, by situationally inducing a higher perceived workload with either zero, one, or five alleged extra tasks after completing the main performance task. It is expected that conscientiousness and its associated preference to feel busy would enhance performance benefits when participants are situationally induced to experience high busyness or high perceived workload. Study 3 relied on a within-participant experimental design to examine the moderating effect of real-world busyness on the link between conscientious individuals' preference for busyness and performance.

Study 1

Study 1 induced different levels of perceived workload by having participants anticipate one or five challenging tasks to be completed. They were informed of an affect eliciting recall task that they would complete prior to the performance tasks. To prepare for the recall task, they were asked to rate the extent to which they would prefer to recall an event where they felt busy, calm, worry, guilty, happy, or sad. I hypothesize that participants are more likely to prefer to regulate toward busyness (i.e., recall a busy event) when they face higher (vs. lower) perceived workload (i.e., 5 tasks) and this tendency is more pronounced among those with higher levels of consciousness who also tend to have higher preference to feel busy.

Participants and Design

Participants (N = 228, 52% female, M_{age} = 36.41, SD_{age} = 9.67)[2] were adults residing in the United States recruited in exchange for monetary incentives from Amazon's MTurk website, an online crowdsourcing portal used to distribute research surveys and other paid work (see Behrend, Sharek, Meade, & Wiebe, 2011; Buhrmester, Kwang, & Gosling, 2011). Participants had an average of 18.29 years of work experience (SD = 12.28), and 88% of them were currently employed. No datapoints were excluded from analysis. Using a between-groups design, participants were randomly assigned to a low or high perceived workload condition and were led to expect either one or five upcoming demanding cognitive tasks respectively upon completing a set of questionnaires.

Measures

Felt busyness. Participants were first provided with operational definitions of busyness, and responded to the following items: "In the past 7 days, how frequently do you have the feeling of busyness?" and "In the past 7 days, when you do feel busy, how intense is this feeling of busyness?" Both items are rated on a seven-point scale (1 = *not at all*, 4 = *moderately*, 7 = *extremely*).

Conscientiousness, extraversion, and neuroticism. The six facets of conscientiousness (i.e., self-efficacy, achievement-striving, self-discipline, dutifulness, orderliness, & cautiousness) were measured with 24 items from the 120-item IPIP-NEO-PI (Johnson, 2014; Maples, Guan, Carter, & Miller, 2014).

[2] Five participants did not provide their demographic information.

Extraversion and neuroticism were measured with 10 items taken from the 50-item IPIP-NEO-PI (Goldberg et al., 2006). These traits were measured as covariates due their strong affective component (Larsen & Augustine, 2008) and nontrivial empirical relationship with conscientiousness. Participants rated the extent to which each statement accurately describes themselves on a five-point Likert scale (1 = *very inaccurate*, 5 = *very accurate*).

Preference for busyness. Six items were developed to capture individuals' preference to maintain or upregulate busyness feelings. Example items include: "I prefer to keep myself busy" and "I want to take on more work than I currently have." Participants rated the extent to which they agree that these statements reflect their general everyday life (1 = *strongly disagree*, 7 = *strongly agree*). In a pilot test (N = 207), an exploratory factor analysis extracted a single factor solution explaining 41.46% of the total variance with all factor loadings exceeding .50, and Cronbach's α = .80. In the current sample, two items were dropped after conducting the confirmatory factor analysis. Notably, these two items required participants to consider their current state of busyness, thus potentially introducing noise given the individual variability in people's state of busyness that they currently experience. Removing these two items provides a more content valid measure of preference for busyness. Dropping these items also improved model fit. The final model showed excellent fit (CFI = .97, SRMR = .027, $\chi^2(2) = 16.20$) with standardized factor loadings exceeding .77, and Cronbach's α = .85 (See Table 1).

Affect. The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) was administered to measure state positive affect (PA) and negative affect (NA). Two additional items "busy" and "stressed" were included. Participants were asked to rate the extent to which they feel 20 affective states in the present moment on a five-point Likert scale (1 = *not at all*, 3 = *moderately*, 5 = *extremely*).

Experience of guilt. As past research demonstrated a link between guilt and conscientiousness (Fayard, Roberts, Robins, & Watson, 2012), two measures were included to rule out the role of guilt in the present model. The guilt subscale of the Positive and Negative Affect Schedule, Expanded Form (PANAS-X; Watson & Clark, 1999) is an adjective-based measure capturing overall positive and negative affect, with subscales assessing 11 specific emotions. Only the guilt subscale was included, which contains six descriptive terms: "guilty," "ashamed," "blameworthy," "angry with self," "dissatisfied with self," and "disgusted with self." Participants indicated the extent to which they experience each emotion on a regular basis (1 = *very slightly or not at all*, 5 = *extremely*).

Guilt proneness. The Test of Self-Conscious Affect-3 (TOSCA-3S; Tangney & Dearing, 2002) measures participants' proneness to self-conscious emotions. As the second guilt measure, participants were presented 11 scenarios each with three statements reflecting the feeling of guilt, shame, or blaming others toward the scenario. Participants rated how likely they would have each of the three reactions (1 = *not likely*, 5 = *very likely*).

Workaholism. Workaholism was measured with the two-factor measure of workaholism (Schaufeli, Shimazu, & Taris, 2009) as a covariate to

exclude the possibility that conscientious individuals seek busyness due to their workaholic tendencies, rather than to instrumentally regulate busyness. Five items capture the *working excessively* factor, a behavioral component reflecting high engagement with work (e.g., I spend more time working than on socializing with friends, on hobbies, or on leisure activities.). Another five items capture the *working compulsively* factor, a psychological component reflecting an uncontrollable inner drive to work and a discomfort feeling when one is not working (e.g., "I feel guilty when I take time off work."). Participants rated the extent to which they agree with each item (1 = *strongly disagree,* 7 = *strongly agree*).

Perceived workload manipulation. Adapting an experimental procedure from past research (Leung et al., 2014; Tamir, 2005) to induce varying levels of performance motive, participants were led to expect completing either one or five demanding performance tasks with the following instructions:

> In this section, we examine the relations between memory and cognitive performance. First, we will ask you to recall an emotional event from your past. Your choice of which emotional event to recall may affect how you perform on the later tasks. Then, you will complete one [five] set(s) of cognitive tasks. This task was [These tasks were] found to be relatively difficult in earlier studies. To do well, you must analyze complex patterns and quickly consider multiple alternatives to identify the solution under time pressure. Nevertheless, people who put in effort to think quickly and consider multiple alternatives are usually

successful at solving these problems. The [Each] cognitive task will take about 3 minutes.

Choice of recalled affective events. Participants were then presented with a list of ten recall alternatives. These include (1) recent and (2) past events that made them feel very busy, bored, calm, happy, or guilty. Participants rated the degree (1 = *Not at all*, 7 = *Extremely*) to which they would like to spend 5 minutes recalling each of the ten situations.

Procedures

Participants first completed the trait and affect measures in a randomized order. Next, they were presented with the perceived workload manipulation and the preference for recalled events questionnaire in order. Lastly, participants completed mock tasks to complete the cover story.

Results

Manipulation check. To evaluate whether the perceived workload manipulation induced a difference in performance motives, participants were asked to report the degree that they perceived the upcoming cognitive task to be "effortful" and "cognitively demanding" on a five-point scale (1 = *Not at all*, 5 = *Extremely*). Unfortunately, independent *t*-tests showed that the manipulation had no effect on participants' rating of the task as "effortful" ($t(226) = 1.12$, $p = .23$), nor as "cognitively demanding" ($t(226) = 0.79$, $p = .43$).

On hindsight, it could be because that across conditions, they were told that the task would be "relatively difficult", as such, regardless of the number of tasks they were assigned, their level of performance motives was similar across conditions. Supporting this contention, a one-sample *t*-test against the

midpoint of the scale (i.e., 3) showed that participants rated the cognitive task as relatively effortful (M = 4.01, SD = .94, $t(227)$ = 16.15, p <.001) and cognitively demanding (M = 3.99, SD = 1.00, $t(227)$ = 14.94, p <.001).

Hypothesized models. Descriptive statistics and correlations across key variables are presented in Table 2. The hypothesized model (see Figure 1) was tested with a series of linear regressions (see Table 3). First, as expected, trait conscientiousness predicted preference for busyness (B = 0.62, SE = 0.13, p < .001). Second, it was tested whether participants' preference for busyness moderated the effect of workload condition (i.e., expecting one or five upcoming tasks) on their choice to recall busy events before working on the demanding cognitive task. The interaction effect was not significant (B = 0.02, SE = 0.13, p = .90), however, participants with higher preference for busyness were more likely to prefer recalling busy events before the demanding task commenced (B = 0.34, SE = 0.09, p < .001). Conscientious individuals were more likely to choose to feel busyness as mediated by their preference for busyness both under high perceived workload (B_{indirect} = 0.22, SE_{boot} = 0.07, 95%CI_{boot} [0.09, 0.38]) and low perceived workload (B_{indirect} = 0.21, SE_{boot} = 0.06, 95%CI_{boot} [0.10, 0.35]). Overall, the results did not support the hypothesized model exactly as specified. Notably, the perceived workload condition did not show a direct effect on choice to recall busyness, nor did it interact with participants' preference for busyness. It is highly probable that this result was contributed by the unsuccessful manipulation of perceived workload. In fact, the results showed that participants in both low and high workload conditions perceived the alleged cognitive task as demanding and effortful. In addition, the significant indirect effects of conscientiousness on

the choice of recalling busyness were of similar effect size under both low and high perceived workload.

The manipulation check result suggested that all participants generally found the task demanding, and an instrumental motive was successfully activated. Following that, as a partial test of the hypotheses, it is expected that conscientious individuals will prefer to experience busyness, which will in turn predict their choice to recall busy events in preparation for the demanding cognitive task. Thus, collapsing across perceived workload conditions, I further tested the simple mediation model that specifies an indirect effect between conscientiousness and the choice to recall busy events prior to the cognitive task, as mediated by preference for busyness. In the second path, preference for busyness predicted the choice to recall busy events before working on the demanding cognitive task (B = 0.35, SE = 0.06, $p < .001$). The direct effect of conscientiousness on the choice to recall busy events was not significant (B = -0.21, SE = 0.13, p = .11). Bootstrapped standard errors and confidence intervals were obtained with 5,000 sampling iterations to evaluate the indirect effect. The indirect effect (B_{indirect} = 0.21, SE_{boot} = 0.06) was significant as indicated by the 95% bootstrapped confidence interval [0.12, 0.35] which did not bound zero.

Alternative models. To rule out the alternative mediation model, I also tested the indirect effect of preference for busyness on the choice to recall busy events before the cognitive task as mediated through conscientiousness. That is, the hypothesized predictor and mediator were swapped. The bootstrapped 95%CI_{Boot} [-0.08, 0.01] indicates that this alternative model was

not significant. Swapping the hypothesized mediator and the outcome variable also resulted in a non-significant mediation model $95\%CI_{Boot}$ [-.08, .09].

Additionally, I tested the hypothesized model that preference for busyness mediates the relationship between conscientiousness and the instrumental recall of busyness by controlling for two potential alternative mediators of workaholism and guilt proneness (see Table 3). In the first path of this model, conscientiousness not only predicted preference for busyness, but also workaholism (B = 0.25, SE = 0.08, p = .001) and guilt proneness (B = 0.43, SE = 0.06, p < .001). In the second path, guilt proneness did not predict the choice to recall busyness before the cognitive task (B = -0.22, SE = 0.13, p = .099), thus this mediator was dropped from analysis for more precise estimates. In the second path of the two-mediator model, both preference for busyness (B = 0.21, SE = 0.08, p = .007) and workaholism (B = 0.41, SE = 0.13, p = .002) predicted a higher likelihood to choose to recall busy events before the cognitive task. The indirect effects as mediated through preference for busyness ($B_{indirect}$ = .13, SE_{boot} = .06, $95\%CI_{Boot}$ [0.04, 0.26]) and workaholism ($B_{indirect}$ = .10, SE_{boot} = .05, $95\%CI_{Boot}$ [0.03, 0.24]) were both significant. Importantly, preference for busyness and workaholism are both independent paths which explain why conscientious individuals may regulate towards busyness in preparation for a demanding task. The role of preference for busyness held even after controlling for workaholism and guilt proneness.

Lastly, the zero-order correlations (Table 2) also suggested that conscientiousness and preference for busyness are correlated with the choice to recall happy and calm events before the cognitive task. Thus, additional analyses using the same mediation model were conducted to test whether

conscientious individuals with higher preference for busyness would choose to recall feeling busy events more than they would choose to feel happy or calm. In the second path, individuals' preference for busyness also positively predicted choice to recall feeling happy (B = 0.29, SE = 0.06, $p < .001$), and the indirect effect of conscientiousness on feeling happy through preference for busyness was significant ($B_{indirect}$ = .18, SE_{boot} = .06, 95%CI_{Boot} [0.08, 0.33]). Similarly, preference for busyness also positively predicted choice to recall feeling calm (B = 0.26, SE = 0.07, $p < .001$), and the indirect effect of conscientiousness on feeling calm was significant ($B_{indirect}$ = .16, SE_{boot} = .06, 95%CI_{Boot} [0.06, 0.29]). Comparatively, the indirect effect of conscientiousness on the choice to recall feeling busyness was stronger ($B_{indirect}$ = 0.21). Additionally, I also tested the indirect effect of conscientiousness on the choice to recall busyness as mediated through preference for busyness, while controlling for the choice to recall feeling happy and calm in a stepwise manner (see Table 4). Importantly, the indirect effect of conscientiousness on the choice to recall busyness via preference for busyness remained significant even after controlling for participants' choice to recall happy and calm events ($B_{indirect}$ = .13, SE_{boot} = .06, 95%CI_{Boot} [0.04, 0.26]). These analyses showed that conscientious individuals with higher preference for busyness indeed wanted to instrumentally regulate towards feeling busyness, relative to the more hedonically pleasant states of feeling happy or calm.

Discussion

Study 1 supported Hypotheses 1 and 2. Consistent with Hypothesis 1, conscientious participants were found to have higher preference for busyness.

This supports the notion that busyness could be a trait-consistent affect for conscientious individuals. However, Hypothesis 2 was only partially supported. Conscientious participants with higher preference for busyness showed greater preference to recall feeling busy prior to the cognitive task, regardless of whether they expected one or five upcoming tasks. That is, individuals who prefer busyness tend to regulate towards experiencing busyness in a generalized way in anticipation of a difficult task, but not only when perceive workload is high. Future research may consider manipulating the perceived task difficulty to see if the instrumental regulation towards busyness only occurs in challenging task contexts.

Study 1 further demonstrates preference for busyness as a distinct construct from workaholism. Although they both promote the tendency for conscientious individuals to put themselves in busy situations, these paths are unique, with workaholism reflecting a more compulsive and guilt-driven motivation as compared to the volitional desire to feel busyness as reflected in the preference for busyness measure. This qualitative difference could be vital to distinguish whether individuals consider busyness to be an instrumental trait-consistent affective state for facilitating performance.

Study 2

Study 2 went beyond participants' regulatory preference for busyness to demonstrate instrumental value of busyness on actual task performance. By experimentally inducing feelings of busyness and perceived workload, as well as measuring actual task performance, Study 2 sought to establish that busyness could causally improve performance. It is further hypothesized that conscientious individuals who experience busyness as a trait-consistent

affective state will perform better under high busyness or perceiving higher workload. Feelings of high (vs. low) busyness were induced using an affect recall task. Perceived workload was induced by randomly assigning participants to complete either five, one, or no alleged extra tasks after the primary task.

Participants and Design

Participants (N = 253, 68% female, M_{age} = 21.90, SD_{age} = 1.66) were college students from a university in Singapore who participated in exchange for course credits, and the opportunity to earn up to $4 based on their anagram task performance. Participants had an average of 1.55 years of work experience (SD = 1.67), and 18% of them were employed during the time of the study. No datapoints were excluded from analysis.

Using a 2 × 3 between-subjects design, participants were randomly assigned to a busyness mood recall condition (recall: high vs. low busyness) and led to expect that they would complete a certain number of extra tasks (perceived workload: 0, 1, or 5 extra tasks) after completing a cognitive task of which the task performance constituted the dependent measure.

Materials and Procedures

The same trait and affect measures were first administered in a randomized order as per Study 1. These included the felt busyness, conscientiousness, extraversion, neuroticism, preference for busyness, PANAS, guilt, and workaholism measures.

Perceived workload manipulation. To induce varying levels of perceived workload, participants were introduced to the performance task as follows:

> You will now complete a cognitive performance task. This task was found to be relatively difficult in earlier studies. To do well, you must analyze complex patterns and quickly consider multiple alternatives to identify the solution under time pressure. Nevertheless, people who put in effort to think quickly and consider multiple alternatives are usually successful at solving these problems. The task will take about 12 minutes. After this task, there will be no more tasks [another set of cognitive tasks, or another five sets of cognitive tasks]. The additional task[s] is [are] of similar difficulty and will take about 3 minutes [each].

Felt busyness manipulation. Participants were then randomly assigned to the high or low busyness condition and asked to engage in a recall task. According to their condition, participants were prompted:

> For the next 4-5 minutes, please write about a recent period of time where you experienced **very high [low]** levels of busyness. In particular, recall the amount of work you had to do and how much time these work activities took from your daily schedule [recall how you were able to do the activities that you choose at your own leisure]. Next, focus on how these activities made you feel. Describe these feelings in as much detail as possible as though you were experiencing them right now.

Manipulation check. Next, participants were asked several manipulation check questions. To evaluate the busyness manipulation using the affect recall task, participants were asked “How busy do you feel lately?” on a five-point scale (1 = *Not at all*, 5 = *Extremely*). To evaluate the perceived

workload manipulation, participants were asked to recall the number of cognitive tasks they were assigned to complete. An open-ended response was collected and later coded (1 = *Correct*, 0 = *Incorrect*, -1 = *Did not provide a proper response*).

Lastly, participants were also asked to what degree they expected the upcoming cognitive task to be "effortful" and "cognitively demanding" on the same five-point scale (1 = *Not at all*, 5 = *Extremely*). No difference was expected across conditions on these items as all participants were similarly told that the task will be "relatively difficult" so as to elicit a performance motive.

Task performance. The task comprises 15 five-letter anagrams, each with one valid solution that utilizes all five letters. The selected words are all singular nouns judged to be reasonably familiar without plurals or repeated letters from previously validated wordlists (Gilhooly & Hay, 1977; Gilhooly & Johnson, 1978). The words were scrambled with specific rules to ensure consistent difficulty and to minimize biases from linguistic ability[3]. Items were individually presented in a randomized sequence. Participants were asked to respond only if they believed they had found the answer. They were also informed that some trials may be more difficult than others. They may choose to skip trials, but they would not be able to return to earlier problems in the sequence. Unbeknownst to the participants, three out of 15 anagrams were

[3] Familiar and concrete nouns (i.e., objects) were chosen from a previously validated list (Gilhooly & Hay, 1977; Gilhooly & Johnson, 1978) such that all words would be relatively common to college students whose medium of instruction is in English. Some scrambling rules were observed to maintain consistent difficulty across all items. First, all items are scrambled to have a similarity index of 0. For example, the scramble ITRUF (correct answer: FRUIT) has a similarity index of 4 since IT (2) and RU (2) are in the correct letter sequence. Second, all scrambles will require at least 3 letter moves to solve. This increases the task's difficulty as participants have to search through more permutations to arrive at the solution (Novick & Sherman, 2003). This results in a reasonably challenging task while still using common words so that one's vocabulary and language ability will not confound the results.

insoluble. The anagram task gave rise to three outcome indices. Task performance was measured by the absolute number of correct solutions. Speed was inversely assessed by the amount of time spent on the soluble anagrams. Lastly, persistence was measured by the amount of time spent on the insoluble anagrams. Note that on soluble trials, persistence was indicated by the amount of time the participants needed to solve an anagram, after which they would not "persist" further. Thus, insoluble anagrams would provide a purer measure of persistence. This task was incentivized with a reward of $1 for the first six correctly solved anagrams, and $1 for every 2 solved anagrams thereafter for a maximum of $4.

Results

Manipulation check. To recapitulate, participants were asked to recall the number of upcoming cognitive tasks they were assigned to for manipulation check of the perceived workload manipulation. Of the 253 participants, two failed to respond, and 21 indicated that the task would take 12 minutes; these responses were coded as "Did not provide a proper response" (9%). The rest of the responses were coded as correct (77%) or incorrect (14%). A Chi-square test ($\chi^2(4, N = 253) = 14.73$, $p = .005$) showed that the distribution of responses differed across task conditions (see supplementary Table S1.). The poorest recall came from the control group (65%), perhaps because the lack of extra tasks, a non-event, was particularly immemorable. Importantly, amongst the high perceived workload condition (5 extra tasks), 88% of participants responded to the manipulation check correctly and 5% responded incorrectly. This provided an indication that the

manipulation was successful at inducing a higher perceived workload among the treatment group.

To evaluate the busyness manipulation via recall task, the level of reported post-manipulation busyness was compared[4]. Unfortunately, the level of felt busyness did not differ across conditions $t(225) = 1.18$, $p = .24$, showing that the busyness recall manipulation was unsuccessful.

Additionally, I checked whether the busyness recall manipulation and the perceived workload manipulation inadvertently affected participants' perceptions of the cognitive task. Two-way ANOVAs showed that neither the busyness recall manipulation nor the perceived workload manipulation had an effect on participants' perception that the cognitive task was "effortful" (*F's*(2,247) < 1.42, *p's*> .23) or "cognitively demanding" (*F's*(2,247) < 1.28, *p's*> .28). Overall, on a five-point scale, participants found the cognitive task to be relatively effortful ($M = 4.04$, $SD = .79$, $t(252) = 20.76$, $p < .001$) and cognitively demanding ($M = 4.18$, $SD = .76$, $t(252) = 24.53$, $p < .001$).

Hypothesized models. Descriptive statistics and correlations across key variables are presented in Table 5. The hypothesized second-stage mediated-moderation model (see Figure 2.) was tested with a series of linear regressions with anagram performance as the dependent measure. Tested models are summarized in Table 6. For brevity, only the final model is later described in detail. The analyses did not support the full hypothesized model, as the three-way interaction between preference for busyness, busyness recall condition, and perceived workload conditions (dummy-coded, see Table 6 for coding) was not significant ($\Delta R^2 = .01$, $\Delta F(2, 240) = 0.84$, $p = .43$; Model 2).

[4] Due to a glitch, the responses for the question "How busy do you feel lately?" was not recorded for the first 26 participants in Study 2.

Analyses of the two second-order interactions found that preference for busyness interacted with the perceived workload condition (ΔR^2 = .03, ΔF(2, 244) = 4.36, p = .014), but not the busyness recall condition (ΔR^2 = .003, ΔF(1, 244) = 0.84, p = .36) to predict performance (Model 3). Recall that the manipulation check indicated that the busyness recall task was unsuccessful to induce high versus low levels of busyness, thus the busyness recall variable was dropped from analysis in the final model.

The final second-stage mediated-moderation model tested the indirect effect of conscientiousness through preference for busyness in moderating the effect of perceived workload on anagram performance (see Table 6, Models 1 & 4). First, conscientiousness positively predicted preference for busyness (B = 0.65, SE = 0.17, p < .001). In the second path, the second-order interaction was significant, ΔR^2 = .03, ΔF(2, 246) = 4.26, p = .015. The simple slopes revealed that participants who preferred busyness performed better under the five extra task condition (B = 0.51, SE = 0.24, p = .033), but not under the one extra task (B = 0.08, SE = 0.25, p = .75) or the no extra task control condition (B = -0.44, SE = 0.23, p = .055; see Figure 3 & Table 7). The mediated moderation model was significant as supported by the index of moderated mediation, 95% CI_{Boot} [0.19, 1.24]. Specifically, the indirect effect was significant only for the five extra task condition (95% CI_{Boot} [0.03, 0.79]), but not the one task condition (95% CI_{Boot} [-0.25, 0.45]). Interestingly, a significant negative indirect effect was found under the no extra task condition (95% CI_{Boot} [-0.66, -0.06]), however, this effect should be interpreted with caution as the earlier reported simple slope of preference for busyness

predicting performance under the no extra task condition did not cross the significance threshold (p = .055).

To further demonstrate that the performance benefits of trait-consistent affect are unique to individuals who prefer busyness but are not explained by higher workaholism, workaholism and its interaction with perceived workload were included into the model in a stepwise manner. Workaholism did not predict performance directly (B = -0.37, SE = 0.36, p = .31; Model 5), nor did it interact with perceived workload to predict performance, ΔR^2 = .0001, ΔF(1, 244) = 0.03, p = .85 (Model 6). More importantly, controlling for workaholism, preference for busyness continued to predict performance when perceived workload was high, 95% CI_{Boot} [0.06, 0.83], with the index of moderated mediation (95% CI_{Boot} [0.20, 1.37]) supporting the hypothesized second-stage mediated-moderation model.

Discussion

The results of Study 2 support Hypotheses 1 and 3. In particular, when anticipating a high level of perceived workload, conscientious individuals with higher (vs. lower) preference for busyness exhibited higher task performance. This effect was not observed when the perceived workload was low. In particular, amongst less conscientious participants who tended to have a lower preference for busyness, they performed worse than their more conscientious counterparts when anticipating high workload but showed comparable performance when anticipating low workload. This finding implies that it was their aversion of busyness and not their caliber that inhibited performance.

Study 2 also demonstrates the discriminant validity between preference for busyness and workaholism. This is evident by the interaction of perceived

workload only with preference for busyness in predicting performance, even after controlling for workaholism and its interaction effects, which were not significant. Individuals of varying levels of workaholism performed similarly regardless of the levels of anticipated workload. Theoretically, this aligns with the notion of trait-consistent affect, where conscientious individuals manifest a volitional preference for busyness and that gives rise to performance benefits. Workaholics, as the result suggests, may not experience busyness as a trait-consistent affect nor reap any performance benefit from feeling busy.

Study 3

Together, Studies 1 and 2 demonstrate the instrumental emotion regulation of busyness in response to laboratory inducements of performance motives (Study 1) and perceived workload (Study 2). Study 3 seeks to further demonstrate the role of real-world busyness in moderating the link between preference for busyness and cognitive performance. Using a repeated-measures experimental design, participants were recruited for the study early in the semester (low busyness) and halfway in the semester (high busyness). As such, Study 3 provides an even stronger evidence of instrumental emotion regulation by demonstrating within-participant changes in cognitive performance as a function of real-world busyness.

Participants and Design

Participants (N = 184, 75% female, M_{age} = 21.15, SD_{age} = 1.89) were college students from a university in Singapore who participated in exchange for course credits, and the opportunity to earn up to $4 based on their anagram task performance. Participants had an average of 2.01 years of work

experience (*SD* = 1.92), and 35.2% of them were employed during the time of the study.

Using a repeated-measures design, participants completed the first study session (low busyness condition) during week 2-3 of the academic term when their workload was relatively low, and the second study session (high busyness condition) during week 6-7 when midterm examination and project deadlines were impending. Two participants' data were removed because they did not return for the second session. Another four participants were removed because they were taking less than four courses during the semester, which could attenuate the strength of the independent variable. These exclusion criteria, study design, and planned analyses have been pre-registered.

Materials and Procedures

In the first session, participants first completed trait and affect measures in a randomized order. These included the felt busyness, conscientiousness, preference for busyness, PANAS, and workaholism measures. They then completed a 15-item anagram task in the same format as Study 2, but with different items (see Appendix B).

In the second session, participants only completed the felt busyness and PANAS measures before the 15-item anagram task. A different set of anagram items with comparable difficulty was used. The preference for busyness measure was administered after the anagram task for the sole purpose of assessing test-retest reliability. In both sessions, they also reported the number of modules they currently took and the number of graded components (e.g., exams, essays, and presentations) that would be due within two weeks.

Results

Manipulation check. I first determined if the within-participant design successfully yielded higher busyness in the second session relative to the first. As expected, participants had more graded deadlines within two weeks during the second session (M = 3.74, SD = 1.52) as compared to the first session (M = 1.90, SD = 1.85); paired $t(177) = 11.11$, $d = 1.09$, $p < .001$. As additional evidence, I computed two indices of felt busyness. First, I averaged the ratings of busyness frequency and intensity from the felt busyness measure. As expected, participants felt busier during the second session (M = 5.41, SD = 1.04) relative to the first (M = 5.02, SD = 1.13), paired $t(177) = 4.34$, $d = 0.36$, $p < .001$. Similarly, the average of "busy" and "stressed" PANAS items indicated higher busyness in the second session (M = 3.33, SD = 1.04) than the first (M = 3.08, SD = 1.03), paired $t(177) = 3.62$, $d = 0.24$, $p < .001$.

Hypothesized model. To recapitulate, Study 3 sought to test the mediated-moderation hypotheses that conscientiousness positively predicts preference for busyness, which moderates the effect of busyness condition on task performance. Because of its mixed-design, the analysis was decomposed to three simple mediation models to predict task performance in the (1) low busyness condition, (2) high busyness condition, and (3) their difference score. This effectively enables the mixed-design data to be analyzed within the ordinary least squares regression framework (for a technical examination of this approach, see Judd, Kenny, & McClelland, 2001, Case 2). Together, the three models provide mathematically equivalent estimates of the simple slopes at low and high busyness (Models 1 and 2), and a test of the moderation effect (Model 3). Additionally, all predictors were mean-centered to improve

interpretability of the model intercepts. In particular, the intercept in Model 3 corresponds to the main or simple effect across busyness conditions at the level which other predictors are centered. Bootstrapped standard errors and 95% confidence intervals of the indirect effect were obtained with 5,000 sampling iterations. Descriptive statistics and correlations across key variables are presented in Table 8.

In the first path across these three models, conscientiousness positively predicted participants' preference for busyness (B = 0.55, SE = 0.21, p = .009). In the second path, preference for busyness positively predicted an increase (B = 0.33, SE = 0.14, p = .016) in task performance in the high busyness relative to the low busyness condition (Model 3, Figure 4). The mediation in Model 3 was significant (B_{indirect} = .19, SE_{Boot} = .10, 95%CI_{Boot} [.03, .46]), suggesting a significant mediated-moderation effect. To visualize the interaction, estimates were derived from Models 1 and 2. In addition, because anagram task items and their mean scores varied across busyness conditions, the analyses were also conducted on the within-condition standardized scores for comparison purposes (see Table 9 and Figure 5). The analyses for non-standardized and standardized scores yielded identical significance levels and conclusions.

Next, to decompose the simple effects of the interaction, Model 3 was analyzed with preference for busyness centered at low (-1SD), mean, and high (+1SD) levels. In these models, the intercept (i.e., mean difference across busyness conditions) reflects the simple effect of busyness condition at the level of preference of busyness which it was centered at. As hypothesized, when participants had a high (+1SD) preference for busyness, they perform better in the high relative to low busyness condition (B = 1.25, SE = 0.25, p <

.001). In contrast, when participants had a low (-1SD) preference for busyness, their performance did not significantly differ across conditions (*B* = 0.38, *SE* = 0.25, *p* = .132; see Table 10).

Differentiating preference for busyness and workaholism. To further demonstrate that the increased performance under higher (vs. lower) busyness is unique to individuals who prefer busyness but not workaholics, the above analyses were repeated with workaholism being included as a parallel mediator. Consistent with Study 2, workaholism showed no simple nor interaction effects with busyness condition on task performance. Workaholism did not predict an increase in task performance in the high busyness relative to the low busyness condition (*B* = -0.23, *SE* = 0.33, *p* = .50). Neither did workaholism predict task performance in the low busyness condition (*B* = 0.32, *SE* = 0.36, *p* = .38), nor the high busyness condition (*B* = 0.09, *SE* = 0.30, *p* = .76). The interaction between preference for busyness and busyness condition on task performance remained significant with a similar pattern. In fact, controlling for workaholism strengthened the effect sizes of preference for busyness in these models (See Table 9 and 10).

Discussion

The results of Study 3 support the hypotheses and the instrumental emotion regulation of busyness amongst conscientious individuals. Conscientious individuals' preference for busyness positively predicts higher cognitive task performance when their real-world busyness is higher. Additionally, the results support that the instrumental benefit of busyness is only reaped by conscientious individuals who autonomously prefer busyness, but not by those high in workaholism.

CHAPTER 3: General Discussion

The current research provides the first systematic evidence on the instrumental emotion regulation of busyness. In particular, conscientious individuals are particularly prone to instrumentally utilize rather than avoid the feeling of busyness to enhance their performance when being challenged with multiple tasks. Our findings showed that they tend to self-regulate towards busyness (Study 1) and reap its performance benefits under higher perceived workload (Study 2) and higher real-world busyness (Study 3). Put simply, a conscientious personality promotes the tendency to instrumentally regulate busyness for performance benefits amidst multiple task demands.

Theoretical Implications

These findings broadly contribute to the busyness, instrumental emotion regulation, and personality literature. Importantly, it advances the current conceptualization of busyness to shed light on its functions as an adaptive human affective state. Current understanding suggests that busyness results from environmental impositions that push individuals to feel rushed and stressed (Hamermesh & Lee, 2007), or that certain cultural imperatives or ideals motivate individuals to publicly display busyness (Bellezza et al., 2016; Gershuny, 2005). Extending these societal-level investigations, the current research instead takes an intrapersonal approach towards busyness. It shows that people could recognize the motivational and performance benefits of feeling busy, and engage in motivated regulation of busyness out of their own volition, despite its unpleasant valence.

This research also provides further evidence for the instrumental emotion regulation framework, which has examined affective experiences

consistent with trait extraversion (Tamir, 2009; Tamir, Robinson, & Clore, 2002; Watson & Clark, 1997) and trait neuroticism (Leung et al., 2014; Tamir, 2005; Tamir & Robinson, 2004; Tamir, Robinson, & Solberg, 2006). It adds new knowledge by demonstrating that busyness is an affective experience consistent with trait conscientiousness whereby instrumental regulation of busyness can produce important performance advantages to conscientious individuals.

The current work also contributes to personality research to better understand the affective aspects of conscientiousness. Earlier meta-analyses suggested that conscientiousness is moderately related to positive and negative affect, life satisfaction, and happiness, with comparable effect sizes as the affect-laden traits, extraversion and neuroticism (DeNeve & Cooper, 1998; Heller, Watson, & Ilies, 2006). Conscientiousness is also the second strongest personality predictor after neuroticism to predict major depression and anxiety disorders (Kendler & Myers, 2010; Kotov, Gamez, Schmidt, & Watson, 2010). Yet, the understanding of how conscientiousness is linked to affect remained elusive. One noteworthy exception is the work by Fayard and colleagues (2012) showing that conscientious individuals are more prone to feeling guilt, and that their experienced guilt mediates the link between conscientiousness and negative affect. Thus, following a missed goal, guilt can be a particularly strong motivator of corrective behaviors and enhanced performance amongst the conscientious individuals. The present research adds to this understanding and is possibly the first to elucidate the role of affect regulation in explaining why conscientiousness can lead to many desirable outcomes. At work, conscientiousness has been reliably associated with

improved task performance (Ones, Viswesvaran, & Schmidt, 1993) and long-term career success (Judge, Higgins, Thoresen, & Barrick, 1999). Such advantages could stem from the trait-consistent experience of busyness that conscientious individuals prefer, thus promoting their intrinsic motivation and performance. Conscientiousness also promotes contextual performance (Hogan, Rybicki, & Borman, 1998; Organ & Ryan, 1995), such as through engaging in more prosocial organizational behavior (Ladd & Henry, 2000; McNeely & Meglino, 1994). Helping others in organizations adds to one's workload and can be personally costly. Whereas people may avoid such costs, conscientious individuals may gravitate towards trait-consistent busyness when they constantly seek out opportunities to help others. Notably, personality research has often focused on trait characteristics and the corresponding predictor-criterion relationships. By bridging personality research with self-regulation research, the current studies suggest that conscientious individuals can reap motivational benefits from their trait-consistent experience of busyness. This finding is particularly timely in today's fast-paced work environment where busyness is the norm rather than the exception.

Further unpacking the affective nature of conscientiousness, the current findings clearly distinguish the instrumental emotion regulation of busyness from workaholism. Although workaholism promotes the tendency to seek the feeling of busyness (Study 1), those feelings did not translate into improved performance (Studies 2 and 3). Put differently, busyness is not an instrumental affective state for workaholics. The present findings revealed that only the volitional engagement of busyness fostered a performance advantage

amidst higher workload, even after controlling for workaholism. These findings are consistent with the understanding of trait-consistent affect (Tamir, 2016) and regulatory fit (Higgins, 2005). The sense of volitional self-regulation appears to be key to explaining the motivational and performance benefits of experiencing an affective state that aligns with one's traits. The self-determination theory espouses a similar argument of autonomous versus controlled regulation. Autonomous regulation carries a true sense of volition and autonomous behaviors are pursued for their personal importance. In contrast, controlled regulation is experienced as pressured by external or intrapsychic forces (Gagné & Deci, 2005; Ryan & Deci, 2000). Indeed, workaholism is primarily characterized by its addictive nature, where people work compulsively to avoid the uncontrollable and uncomfortable feelings of anxiety and guilt that emerge when not working (Ng, Sorensen, & Feldman, 2007; Schaufeli et al., 2009). It is the compulsive aspect of workaholism that leads to poorer social relationships, health, and eventually depleted work engagement and burnout (Porter, 2001; Schaufeli et al., 2009; Schaufeli, Taris, & Van Rhenen, 2008). The distinction between autonomous versus controlled regulation is crucial to untangle the mechanism underlying the instrumental regulation of busyness. Busyness coupled with workaholism is likely to have an eventual crippling effect on the individual, as the literature currently understands. In contrast, the current research reveals that a trait-consistent and volitional pursuit of busyness has the potential to motivate task engagement and performance. This distinction has important implications for health psychology and for managing work stress, task engagement, and performance within organizations.

Limitations and Future Directions

Notwithstanding the contributions of these studies, it is important to acknowledge several limitations of the current research. Firstly, the manipulation in Study 1 was unsuccessful in varying the levels of perceived cognitive demand of performance tasks. Therefore, although Study 1 demonstrates that conscientious individuals are more likely to upregulate busyness in preparation for the alleged tasks, it was unable to conclude if these behaviors occur only when demands are high. Put differently, Study 1 did not manage to demonstrate if the relative strength of one's performance motive would determine if conscientious individuals will engage in instrumental regulation of busyness. Secondly, Study 3 employed a within-participant design to demonstrate the instrumental value of participants' busyness in a naturalistic setting. The quasi-experimental field design of Study 3 extended Study 2's finding that conscientious individuals who preferred busyness performed better under higher laboratory inducements of busyness. Nevertheless, the field setting of Study 3 suggested that strong causal claims cannot be made. It is because participants' busyness across conditions would differ according to their individual schedules and was not fully under the experimenter's control, which may compromise the internal validity of the manipulation. Relatedly, untraced events may occur between the two time points that would introduce confounding factors to the study, and therefore the first and second sessions within Study 3 may not have differed only on levels of busyness.

Next, the relatively low ecological validity of the current research could pose as a limitation. The first two studies focused on the psychological

effects of anticipated busyness, without placing individuals in actual busy situations. This was partially remedied in Study 3 which examined performance as a function of students' real-world busyness. To test generalizability of the present findings at the workplace, an important future direction is to investigate employees' busyness as result of their work demands, which could arguably provide a stronger effect relative to inducing busyness in the lab context. The research's ecological validity can be further strengthened by field research examining working adults in situations of varying degrees of busyness and the effects on their job performance. Nevertheless, it is essential for the field studies to control for extraneous factors such as the varying natures and skill demands of the tasks. In actual workplace situations, the ability to regulate multiple goal pursuit, to minimize goal switching costs, and to resolve conflicting work expectations are important to account for, as these individual differences could mask the instrumental benefits of busyness. It remains to be seen if busyness could serve as an instrumental emotion that helps individuals sustain efforts and enhance performance under real work settings.

As the first systematic investigation on the instrumental regulation of busyness, the present research has largely focused on studying the performance motives. Future research could also examine whether people regulate busyness for epistemic, social, and eudaimonic motives, which are common goals for instrumental emotion regulation (see Tamir, 2016). Given that work is an important source of meaning in life for individuals (Allan, Duffy, & Douglass, 2015; Rosso, Dekas, & Wrzesniewski, 2010; Steger, Dik,

& Duffy, 2012), it is reasonable to posit that some people pursue busyness to potentially enhance their well-being and social functioning.

The current research has focused on conscientiousness as conceptualized at the domain level. However, some research has suggested that construing conscientiousness at the facet level could have better predictive power for behavioral outcomes compared to domain-level conscientiousness (Ashton, 1998; Hough & Ones, 2001; Paunonen, 1998; Paunonen & Ashton, 2001). Furthermore, some researchers have attempted to organize the conscientiousness facets into proactive and inhibitive aspects, which has been supported by recent empirical findings (DeYoung, Quilty, & Peterson, 2007; Jackson, Paunonen, Fraboni, & Goffin, 1996; Jackson et al., 2010; Roberts et al., 2005). The proactive aspects reflect an energetic desire for achievement and commitment to work, whereas the inhibitive aspects highlight conscientious individuals' scrupulousness and cautiousness (Costa et al., 1991; McCrae & Costa, 1987). Nevertheless, the current research did not make predictions at the facet level, because it is unclear whether the instrumental regulation of busyness would differ according to the conscientiousness facets. For instance, it is easy to see that the proactive aspects align well with busyness as it facilitates *achievement striving*, the pursuit of a sense of *competence*, and a *self-disciplined* engagement at work. But the instrumental use of busyness could also align with the inhibitive aspects such as through promoting *deliberation* to suppress tempting distractions, *dutifulness* in keeping to one's work ethic, and *order* in organizing work schedules. Thus, it appears that trait conscientiousness in general would promote the instrumental regulation of busyness. To add to the nuanced understanding of trait

conscientiousness and instrumental affect regulation, future research with larger sample size and more statistical power can examine if there are differential facet effects of conscientiousness to predict the instrumental use of busyness.

The current findings also beg future research to question: Can the instrumental emotion regulation of busyness be trained? If so, a successful intervention would be particularly timely for individuals and organizations in the modern workforce. To propose a fully systematic intervention here would be premature; however, our prima facie evidence points to two fundamentals to wield busyness as an emotional resource. First, individuals need to recognize busyness as a useful affective state that can give rise to an invigorating drive to manage their workload. This recognition may provide the initial impetus to take comfort with busyness and channel it positively. As the current result suggests, the aversion of busyness tends to cripple performance. Second, it is important for people to distinguish the desire for busyness from workaholism. This would require mindful reflection of their latent motivations underlying the upregulation of busyness. These two perspectives are key to reflect upon as they appear to provide the fundamental cognitive bases for individuals to instrumentally gain control of their busyness affect. Moving forward, research can look into devising effective cognitive and behavioral strategies that invoke a mindset that welcomes the instrumental use of busyness. Indeed, having a high conscientiousness trait is probably not the only way to experience a trait-consistent affective experience with busyness. Potentially, the mindset that values and desires for busyness could be nurtured with practice.

CHAPTER 4: Conclusion

Busyness is an increasingly prevalent phenomenon that characterizes the modern workforce. Yet, busyness is also an elusive concept, with some people welcoming busyness, while others denigrating it as the "cult of busyness." The instrumental emotion regulation approach provides an illuminating perspective that sheds light on why busyness might be useful, but also for whom busyness might be useful. For some individuals, high busyness could be a stressful and debilitating experience if their trait predisposition puts a lower focus on achievement goals, and so they might perform better under low busyness. However, individuals who are high in trait conscientiousness might feel highly energized by busyness to pursue their valued goals. This more balanced view on busyness offers novel insights on motivated busyness for gaining optimal performance outcomes. Importantly, it provides a new theoretical lens to reframe the existing negative view of exhibiting mere workaholism to maintain an unhealthily high levels of work engagement by recognizing the alternative positive view of instrumentally upregulating busyness to promote performance and even well-being at the workplace.

REFERENCES

Allan, B. A., Duffy, R. D., & Douglass, R. (2015). Meaning in life and work: A developmental perspective. *The Journal of Positive Psychology, 10*(4), 323-331.

Amabile, T. M., Barsade, S. G., Mueller, J. S., & Staw, B. M. (2005). Affect and creativity at work. *Administrative Science Quarterly, 50*(3), 367-403.

Andreassen, C. S., Hetland, J., & Pallesen, S. (2010). The relationship between 'workaholism', basic needs satisfaction at work and personality. *European Journal of Personality, 24*(1), 3-17.

Ariely, D., & Wertenbroch, K. (2002). Procrastination, deadlines, and performance: Self-control by precommitment. *Psychological Science, 13*(3), 219-224.

Ashton, M. C. (1998). Personality and job performance: The importance of narrow traits. *Journal of Organizational Behavior, 19*, 289-303.

Augustine, A. A., Hemenover, S. H., Larsen, R. J., & Shulman, T. E. (2010). Composition and consistency of the desired affective state: The role of personality and motivation. *Motivation and Emotion, 34*(2), 133-143.

Baas, M., De Dreu, C. K., & Nijstad, B. A. (2008). A meta-analysis of 25 years of mood–creativity research: Hedonic tone, activation, or regulatory focus? *Psychological Bulletin, 134*(6), 779-806.

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215.

Behrend, T. S., Sharek, D. J., Meade, A. W., & Wiebe, E. N. (2011). The viability of crowdsourcing for survey research. *Behavior Research Methods, 43*(3), 800-813.

Bellezza, S., Paharia, N., & Keinan, A. (2016). Conspicuous consumption of time: When busyness and lack of leisure time become a status symbol. *Journal of Consumer Research*.

Buehler, R., Griffin, D., & Ross, M. (1994). Exploring the" planning fallacy": Why people underestimate their task completion times. *Journal of Personality and Social Psychology, 67*(3), 366-381.

Buehler, R., Peetz, J., & Griffin, D. (2010). Finishing on time: When do predictions influence completion times? *Organizational Behavior and Human Decision Processes, 111*(1), 23-32.

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6*(1), 3-5.

Campos, J. J., Walle, E. A., Dahl, A., & Main, A. (2011). Reconceptualizing emotion regulation. *Emotion Review, 3*(1), 26-35.

Carver, C. S. (2001). Affect and the functional bases of behavior: On the dimensional structure of affective experience. *Personality and Social Psychology Review, 5*(4), 345-356.

Carver, C. S., Sutton, S. K., & Scheier, M. F. (2000). Action, emotion, and personality: Emerging conceptual integration. *Personality and Social Psychology Bulletin, 26*(6), 741-751.

Clore, G. L., & Robinson, M. D. (2000). What is emotion regulation? In search of a phenomenon. *Psychological Inquiry, 11*(3), 163-166.

Cochran, W., & Tesser, A. (1996). The "what the hell" effect: Some effects of goal proximity and goal framing on performance. In L. L. Martin & A. Tesser (Eds.), *Striving and feeling: Interactions among goals, affect, and self-regulation* (pp. 99-120). Hillsdale, NJ: Erlbaum.

Cohen, J. B., & Andrade, E. B. (2004). Affective intuition and task-contingent affect regulation. *Journal of Consumer Research, 31*(2), 358-367.

Costa, P. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO PI-R) and NEO Five-Factor Inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.

Costa, P. T., & McCrae, R. R. (1998). Six approaches to the explication of facet-level traits: Examples from conscientiousness. *European Journal of Personality, 12*(2), 117-134.

Costa, P. T., McCrae, R. R., & Dye, D. A. (1991). Facet scales for agreeableness and conscientiousness: A revision of the NEO Personality Inventory. *Personality and Individual Differences, 12*(9), 887-898.

Darrah, C. N., Freeman, J., M, & English-Lueck, J. A. (2007). *Busier than ever! Why American families can't slow down*. Stanford, CA: Stanford University Press.

De Dreu, C. K., Baas, M., & Nijstad, B. A. (2008). Hedonic tone and activation level in the mood-creativity link: Toward a dual pathway to creativity model. *Journal of Personality and Social Psychology, 94*(5), 739-756.

DeNeve, K. M., & Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin, 124*(2), 197-229.

DeYoung, C. G., Quilty, L. C., & Peterson, J. B. (2007). Between facets and domains: 10 aspects of the Big Five. *Journal of Personality and Social Psychology, 93*(5), 880-896.

Dickinson, E. E. (2016). The cult of busy. *John Hopkins Health Review, 3*(1), 27-49.

Dudley, N. M., Orvis, K. A., Lebiecki, J. E., & Cortina, J. M. (2006). A meta-analytic investigation of conscientiousness in the prediction of job performance: Examining the intercorrelations and the incremental validity of narrow traits. *Journal of Applied Psychology, 91*(1), 40-57.

Ekerdt, D. J. (1986). The busy ethic: Moral continuity between work and retirement. *The Gerontologist, 26*(3), 239-244.

Elliot, A. J., & Thrash, T. M. (2002). Approach-avoidance motivation in personality: Approach and avoidance temperaments and goals. *Journal of Personality and Social Psychology, 82*(5), 804-818.

Fayard, J. V., Roberts, B. W., Robins, R. W., & Watson, D. (2012). Uncovering the affective core of conscientiousness: The role of self-conscious emotions. *Journal of Personality, 80*(1), 1-32.

Festini, S. B., McDonough, I. M., & Park, C. P. (2016). The busier the better: Greater busyness is associated with better cognition. *Frontiers in Aging Neuroscience, 8*(98), 1-10.

Forbes, D. L. (2011). Toward a unified model of human motivation. *Review of General Psychology, 15*(2), 85-98.

Freitas, A. L., & Higgins, E. T. (2002). Enjoying goal-directed action: The role of regulatory fit. *Psychological Science, 13*(1), 1-6.

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior, 26*(4), 331-362.

Gershuny, J. (2005). Busyness as the badge of honor for the new superordinate working class. *Social Research, 72*(2), 287-314.

Gilhooly, K., & Hay, D. (1977). Imagery, concreteness, age-of-acquisition, familiarity, and meaningfulness values for 205 five-letter words having single-solution anagrams. *Behavior Research Methods, 9*(1), 12-17.

Gilhooly, K., & Johnson, C. (1978). Effects of solution word attributes on anagram difficulty: A regression analysis. *The Quarterly Journal of Experimental Psychology, 30*(1), 57-70.

Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. C. (2006). The International Personality Item Pool and the future of public-domain personality measures. *Journal of Research in Personality, 40*, 84-96.

Gross, J. J. (1998a). Antecedent-and response-focused emotion regulation: divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology, 74*(1), 224-237.

Gross, J. J. (1998b). The emerging field of emotion regulation: An integrative review. *Review of General Psychology, 2*(3), 271-299.

Gross, J. J. (2008). Emotion regulation. In M. Lewis, J. M. Haviland & L. F. Barrett (Eds.), *Handbook of Emotions* (3rd ed., pp. 497-512). New York, NY: Guilford Press.

Gross, J. J. (2015). Emotion regulation: Current status and future prospects. *Psychological Inquiry, 26*(1), 1-26.

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*(2), 348-362.

Hamermesh, D. S., & Lee, J. (2007). Stressed out on four continents: Time crunch or yuppie kvetch? *The review of Economics and Statistics, 89*(2), 374-383.

Heller, D., Watson, D., & Ilies, R. (2006). The dynamic process of life satisfaction. *Journal of Personality, 74*(5), 1421-1450.

Higgins, E. T. (2000). Making a good decision: Value from fit. *American Psychologist, 55*(11), 1230-1243.

Higgins, E. T. (2005). Value from regulatory fit. *Current Directions in Psychological Science, 14*(4), 209-213.

Higgins, E. T. (2014). *Beyond pleasure and pain: How motivation works.* New York, NY: Oxford University Press.

Hogan, J., Rybicki, S. L., & Borman, W. C. (1998). Relations between contextual performance, personality, and occupational advancement. *Human Performance, 11*(2-3), 189-207.

Hogan, R., & Hogan, J. (1992). *Hogan Personality Inventory manual*. Tulsa, OK: Hogan Assessment Systems.

Hough, L. M. (1992). The "Big Five" personality variables-construct confusion: Description versus prediction. *Human Performance, 5*(1-2), 139-155.

Hough, L. M., & Ones, D. S. (2001). The structure, measurement, validity, and use of personality variables in industrial work, and organizational psychology. In N. Anderson, D. S. Ones, H. K. Sinangil & C. Viswesvaran (Eds.), *Handbook of industrial, work and organizational psychology* (Vol. 1, pp. 233-277). Thousand Oaks, CA: Sage.

Jackson, D. N., Paunonen, S. V., Fraboni, M., & Goffin, R. D. (1996). A five-factor versus six-factor model of personality structure. *Personality and Individual Differences, 20*(1), 33-45.

Jackson, J. J., Wood, D., Bogg, T., Walton, K. E., Harms, P. D., & Roberts, B. W. (2010). What do conscientious people do? Development and validation of the Behavioral Indicators of Conscientiousness (BIC). *Journal of Research in Personality, 44*(4), 501-511.

Jackson, S. S., Fung, M.-C., Moore, M.-A. C., & Jackson, C. J. (2016). Personality and workaholism. *Personality and Individual Differences, 95*, 114-120.

Jang, K. L., Livesley, W. J., & Vemon, P. A. (1996). Heritability of the big five personality dimensions and their facets: a twin study. *Journal of Personality, 64*(3), 577-592.

Johnson, J. A. (2014). Measuring thirty facets of the Five Factor Model with a 120-item public domain inventory: Development of the IPIP-NEO-120. *Journal of Research in Personality, 51,* 78-89.

Judd, C. M., Kenny, D. A., & McClelland, G. H. (2001). Estimating and testing mediation and moderation in within-subject designs. *Psychological Methods, 6*(2), 115-134.

Judge, T. A., Higgins, C. A., Thoresen, C. J., & Barrick, M. R. (1999). The big five personality traits, general mental ability, and career success across the life span. *Personnel Psychology, 52*(3), 621-652.

Kendler, K. S., & Myers, J. (2010). The genetic and environmental relationship between major depression and the five-factor model of personality. *Psychological medicine, 40*(5), 801-806.

Killingsworth, M. A., & Gilbert, D. T. (2010). A wandering mind is an unhappy mind. *Science, 330*(6006), 932-932.

Kotov, R., Gamez, W., Schmidt, F., & Watson, D. (2010). Linking "big" personality traits to anxiety, depressive, and substance use disorders: A meta-analysis. *Psychological Bulletin, 136*(5), 768-821.

Kreider, T. (2012). The 'busy' trap. *The New York Times*.

Ladd, D., & Henry, R. A. (2000). Helping coworkers and helping the organization: The role of support perceptions, exchange ideology, and conscientiousness. *Journal of Applied Social Psychology, 30*(10), 2028-2049.

Larsen, R., & Augustine, A. (2008). Basic personality dispositions: Extraversion/neuroticism, BAS/BIS, positive/negative affectivity, and approach/avoidance. In A. J. Elliot (Ed.), *Handbook of approach and avoidance motivation* (pp. 151-164). Hillsdale, NJ: Lawrence Erlbaum Associate.

Larsen, R. J. (2000). Toward a science of mood regulation. *Psychological Inquiry, 11*, 129-141.

Leung, A. K.-y., Liou, S., Qiu, L., Kawn, L. Y. Y., Chiu, C.-y., & Yong, J. C. (2014). The role of instrumental emotion regulation in the emotions-

creativity link: How worries render individuals with high neuroticism more creative. *Emotion, 14*(5), 846-856.

Levine, R. (1997). *A geography of time*. New York, NY: Basic Books.

Levine, R. (2005). A geography of busyness. *Social Research, 72*(2), 355-370.

Levine, R., & Norenzayan, A. (1999). The pace of life in 31 countries. *Journal of Cross-Cultural Psychology, 30*, 178-205.

Liu, W., & Aaker, J. (2008). The happiness of giving: The time-ask effect. *Journal of Consumer Research, 35*(3), 543-557.

Maples, J. L., Guan, L., Carter, N. T., & Miller, J. D. (2014). A test of the International Personality Item Pool representation of the Revised NEO Personality Inventory and development of a 120-item IPIP-based measure of the five-factor model. *Psychological Assessment, 26*(4), 1070-1084.

McCrae, R. R., & Costa, P. T. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology, 52*(1), 81.

McCrae, R. R., & Costa, P. T. (1997). Personality trait structure as a human universal. *American Psychologist, 52*(5), 509-516.

McCrae, R. R., & Terracciano, A. (2005). Universal features of personality traits from the observer's perspective: Data from 50 cultures. *Journal of Personality and Social Psychology, 89*(3), 547-561.

McNeely, B. L., & Meglino, B. M. (1994). The role of dispositional and situational antecedents in prosocial organizational behavior: An examination of the intended beneficiaries of prosocial behavior. *Journal of Applied Psychology, 79*(6), 836-844.

Mogilner, C., & Aaker, J. (2009). “The time vs. money effect”: Shifting product attitudes and decisions through personal connection. *Journal of Consumer Research, 36*(2), 277-291.

Mount, M. K., & Barrick, M. R. (1995). The Big Five personality dimensions: Implications for research and practice in human resources management. *Research in Personnel and Human Resources Management, 13*(3), 153-200.

Ng, T. W., Sorensen, K. L., & Feldman, D. C. (2007). Dimensions, antecedents, and consequences of workaholism: A conceptual integration and extension. *Journal of Organizational Behavior, 28*(1), 111-136.

Novick, L. R., & Sherman, S. J. (2003). On the nature of insight solutions: Evidence from skill differences in anagram solution. *The Quarterly Journal of Experimental Psychology: Section A, 56*(2), 351-382.

Ones, D. S., Viswesvaran, C., & Schmidt, F. L. (1993). Comprehensive meta-analysis of integrity test validities: Findings and implications for personnel selection and theories of job performance. *Journal of Applied Psychology, 78*, 679-703.

Organ, D. W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology, 48*(4), 775-802.

Paunonen, S. V. (1998). Hierarchical organization of personality and prediction of behavior. *Journal of Personality and Social Psychology, 74*(2), 538-556.

Paunonen, S. V., & Ashton, M. C. (2001). Big Five factors and facets and the prediction of behavior. *Journal of Personality and Social Psychology, 81*(3), 524-539.

Porter, G. (2001). Workaholic tendencies and the high potential for stress among co-workers. *International Journal of Stress Management, 8*(2), 147-164.

Roberts, B. W., Bogg, T., Walton, K. E., Chernyshenko, O. S., & Stark, S. E. (2004). A lexical investigation of the lower-order structure of conscientiousness. *Journal of Research in Personality, 38*(2), 164-178.

Roberts, B. W., Chernyshenko, O. S., Stark, S., & Goldberg, L. R. (2005). The structure of conscientiousness: An empirical investigation based on seven major personality questionnaires. *Personnel Psychology, 58*(1), 103-139.

Robinson, J., & Godbey, G. (2005). Busyness as usual. *Social Research, 72*(2), 407-426.

Robinson, J., & Godbey, G. (2010). *Time for life: The surprising ways Americans use their time*. University Park, PA: Penn State University Press.

Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and review. *Research in Organizational Behavior, 30*, 91-127.

Russell, J. A. (2003). Core affect and the psychological construction of emotion. *Psychological Review, 110*(1), 145-172.

Russell, J. A., & Barrett, L. F. (1999). Core affect, prototypical emotional episodes, and other things called emotion: Dissecting the elephant. *Journal of Personality and Social Psychology, 76*(5), 805.

Rusting, C. L., & Larsen, R. J. (1995). Moods as sources of stimulation: Relationships between personality and desired mood states. *Personality and Individual Differences, 18*(3), 321-329.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68-78.

Schaufeli, W. B., Shimazu, A., & Taris, T. W. (2009). Being driven to work excessively hard: The evaluation of a two-factor measure of workaholism in the Netherlands and Japan. *Cross-Cultural Research, 43*(4), 320-348.

Schaufeli, W. B., Taris, T. W., & Van Rhenen, W. (2008). Workaholism, burnout, and work engagement: three of a kind or three different kinds of employee well-being? *Applied Psychology, 57*(2), 173-203.

Schulte, B. (2014, March 14). Why being too busy makes us feel good. *Washington Post*.

Shu, S. B., & Gneezy, A. (2010). Procrastination of enjoyable experiences. *Journal of Marketing Research, 47*(5), 933-944.

Steger, M. F., Dik, B. J., & Duffy, R. D. (2012). Measuring meaningful work: The work and meaning inventory (WAMI). *Journal of Career Assessment, 20*(3), 322-337.

Tamir, M. (2005). Don't worry, be happy? Neuroticism, trait-consistent affect regulation, and performance. *Journal of Personality and Social Psychology, 89*(3), 449-461.

Tamir, M. (2009). Differential preferences for happiness: Extraversion and trait-consistent emotion regulation. *Journal of Personality, 77*(2), 447-470.

Tamir, M. (2011). The maturing field of emotion regulation. *Emotion Review, 3*(1), 3-7.

Tamir, M. (2016). Why do people regulate their emotions? A taxonomy of motives in emotion regulation. *Personality and Social Psychology Review, 20*(3), 199-222.

Tamir, M., Bigman, Y. E., Rhodes, E., Salerno, J., & Schreier, J. (2015). An expectancy-value model of emotion regulation: Implications for motivation, emotional experience, and decision making. *Emotion, 15*(1), 90-103.

Tamir, M., Mitchell, C., & Gross, J. J. (2008). Hedonic and instrumental motives in anger regulation. *Psychological Science, 19*(4), 324-328.

Tamir, M., & Robinson, M. D. (2004). Knowing good from bad: The paradox of neuroticism, negative affect, and evaluative processing. *Journal of Personality and Social Psychology, 87*(6), 913-925.

Tamir, M., Robinson, M. D., & Clore, G. L. (2002). The epistemic benefits of trait-consistent mood states: an analysis of extraversion and mood. *Journal of Personality and Social Psychology, 83*(3), 663-677.

Tamir, M., Robinson, M. D., & Solberg, E. C. (2006). You may worry, but can you recognize threats when you see them? Neuroticism, threat

identifications, and negative affect. *Journal of Personality, 74*(5), 1481-1506.

Thayer, R. E. (2000). Mood regulation and general arousal systems. *Psychological Inquiry, 11*, 202-204.

Thompson, R. A. (2011). Emotion and emotion regulation: Two sides of the developing coin. *Emotion Review, 3*(1), 53-61.

Veblen, T. (1899). *The theory of the leisure class: An economic study of institiutions*. London: George Allen and Unwin.

Vohs, K. D., Park, J. K., & Schmeichel, B. J. (2013). Self-affirmation can enable goal disengagement. *Journal of Personality and Social Psychology, 104*(1), 14-27.

Watson, D. (2000). *Mood and temperament*. New York, NY: Guilford Press.

Watson, D., & Clark, L. A. (1997). Extraversion and its positive emotional core. In R. Hogan, J. Johnson & S. Briggs (Eds.), *Handbook of personality psychology* (pp. 767-793). San Diego, CA: Academic Press.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070.

White, M. P., & Dolan, P. (2009). Accounting for the richness of daily activities. *Psychological Science, 20*(8), 1000-1008.

Wilcox, K., Laran, J., Stephen, A. T., & Zubcsek, P. P. (2016). How being busy can increase motivation and reduce task completion time. *Journal of Personality and Social Psychology, 110*(3), 371-384.

Zauberman, G., & Lynch Jr, J. G. (2005). Resource slack and propensity to discount delayed investments of time versus money. *Journal of Experimental Psychology: General, 134*(1), 23-37.

Table 1. Confirmatory factor analysis for Study 1's preference for busyness measure.

#	Item		Initial Model Factor Loading	Final Model Factor Loading
1	I prefer to keep myself busy.		.84	.90
2	I would rather be busy than free.		.80	.75
3	I keep myself busy most of the time.		.72	.78
4	If I have free time, I quickly find some work to keep myself busy.		.62	.77
5	I want to take on more work than I currently have.		.62	(dropped)
6	I desire to be busier than I currently am.		.60	(dropped)
		χ^2	176.50	16.20
		df	9	2
		CFI	.78	.97
		SRMR	.095	.027

Table 2. Study 1 descriptive statistics, reliability, and correlations across key variables.

#	Variable	*M*	*SD*	α	1	2	3	4	5
1	Perceived Workload (0 = Low, 1 = High)	0.50	0.50	-					
2	Conscientiousness	3.93	0.65	0.93	-.04				
3	Preference for Busyness	4.91	1.30	0.85	.01	.31***			
4	Workaholism	3.37	0.77	0.86	.04	.21**	.59***		
5	Guilt Proneness	4.16	0.67	0.86	.03	.42***	.24**	.34***	
Preference for type of emotional event to recall prior to cognitive task									
6	Busy	2.71	1.28	0.81	.03	.00	.32***	.34***	-.00
7	Bored	2.09	1.22	0.88	.01	-.26***	.09	.25***	-.15*
8	Calm	2.99	1.36	0.90	.06	.04	.23***	.23***	.18**
9	Happy	3.73	1.29	0.87	-.01	.26***	.34***	.25***	.21**
10	Guilty	1.90	1.21	0.93	.01	-.42***	.04	.12	-.22***

Note. * p <.05; ** p < 0.01; *** p < 0.001.

Table 3. Regression analyses for the mediated-moderation and mediation models in Study 1.

	Model 1a	Model 1b	Model 1c	Model 2	Model 3	Model 4	Model 5
Outcome	PB	Workaholism	Guilt Proneness	Choice to Recall Busyness Before Cognitive Task			
Constant	2.49*** (0.51)	2.38*** (0.31)	2.47*** (0.25)	1.84*** (0.58)	1.84*** (0.52)	1.65** (0.60)	1.22* (0.55)
Conscientiousness	0.62*** (0.13)	0.25** (0.08)	0.43*** (0.06)	-0.21 (0.13)	-0.21 (0.13)	-0.14 (0.14)	-0.23 (0.13)
Preference for Busyness (PB)				0.34*** (0.09)	0.35*** (0.06)	0.20** (0.08)	0.21** (0.08)
Perceived Workload (0 = Low, 1 = High)				-0.03 (0.63)			
Perceived Workload × PB				0.02 (0.12)			
Workaholism						0.46*** (0.13)	0.41** (0.13)
Guilt Proneness						-0.22 (0.13)	
R^2	.09	.05	.17	.11	.11	.16	.15
F	23.53***	10.74**	47.19***	7.10***	14.26***	10.76***	13.32***
Indirect Effect via PB					0.21 (0.06)	0.13 (0.05)	0.13 (0.06)
Bootstrap 95%CI					[.12, .35]	[.03,.27]	[.04,.26]

Note. * p <.05; ** p < 0.01; *** p < 0.001.

Table 4. Supplementary mediation analyses in Study 1.

Outcome	PB	Choice to Recall Happiness	Choice to Recall Calmness	Choice to Recall Busyness		
Constant	2.49*** (0.51)	1.01 (0.51)	2.05*** (0.57)	1.84*** (0.52)	1.53** (0.5)	1.26** (0.5)
Conscientiousness	0.62*** (0.13)	0.33** (0.13)	-0.08 (0.14)	-0.21 (0.13)	-0.32** (0.13)	-0.27** (0.13)
Preference for Busyness (PB)		0.29*** (0.06)	0.26*** (0.07)	0.35*** (0.06)	0.26*** (0.06)	0.24*** (0.06)
Choice to Recall Feeling Happy					0.31*** (0.06)	0.22** (0.07)
Choice to Recall Feeling Calm						0.17** (0.06)
R^2	.09	.14	.06	.11	.20	.22
F	23.53***	18.81***	6.66**	14.26***	18.33***	16.00***
Indirect Effect via PB		0.18 (0.06)	0.16 (0.06)	0.21 (0.06)	0.16 (0.05)	0.15 (0.05)
Bootstrap 95%CI		[0.08, 0.33]	[0.06, 0.29]	[0.12, 0.35]	[0.08, 0.27]	[0.07, 0.26]

Note. * p <.05; ** p < 0.01; *** p < 0.001.

Table 5. Study 2 descriptive statistics, reliability, and correlations across key variables.

#	Variable	*M*	*SD*	α	1	2	3	4	5	6
1	Busyness Recall (1=high, 0=low)	0.50	0.50	-						
2	Perceived Workload (5 vs 0 Dummy Code)	0.33	0.47	-	.00					
3	Perceived Workload (1 vs 0 Dummy Code)	0.34	0.47	-	-.01	-.50***				
4	Conscientiousness	3.53	0.46	.86	-.06	.08	-.15*			
5	Preference for Busyness	4.32	1.32	.87	-.05	-.03	.01	.23**		
6	Workaholism	3.26	0.54	.70	-.06	-.06	.12	.17**	.33***	
7	Anagram Task Performance Score	8.82	2.86	-	-.02	-.13*	.02	-.06	.01	-.08

Note. * p <.05; ** p < 0.01; *** p < 0.001.

Table 6. Regression analyses for the second-stage mediated-moderation models in Study 2.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Outcome	PB	Anagram Score	Anagram Score	Anagram Score	Anagram Score	Anagram Score
Constant	2.04** (0.62)	12.34*** (1.86)	12.65*** (1.69)	12.02*** (1.57)	12.75*** (1.73)	11.59*** (2.06)
Conscientiousness	0.65*** (0.17)	-0.22 (0.40)	-0.24 (0.40)	-0.24 (0.40)	-0.19 (0.40)	-0.18 (0.40)
Preference for Busyness (PB)		-0.51 (0.32)	-0.56** (0.26)	-0.44 (0.23)	-0.37 (0.23)	-0.46 (0.25)
Perceived Workload (1 vs 0; PW1)		-3.15 (2.27)	-2.55 (1.51)	-2.66 (1.50)	-2.54 (1.50)	-1.21 (2.71)
Perceived Workload (5 vs 0; PW5)		-4.02** (2.02)	-5.14*** (1.47)	-5.04*** (1.46)	-4.87** (1.47)	-2.34 (2.71)
PB x PW1		0.64 (0.48)	0.50 (0.33)	0.52 (0.33)	0.50 (0.33)	0.60 (0.36)
PB x PW5		0.69 (0.45)	0.96** (0.33)	0.94** (0.32)	0.90** (0.33)	1.03** (0.35)
Busyness Recall Condition (BRC)		-0.73 (2.04)	-1.23 (1.23)			
PB x BRC		0.14 (0.45)	0.25 (0.27)			
PW1 x BRC		1.08 (3.07)				
PW5 x BRC		-2.49 (2.96)				
PB x PW1 x BRC		-0.28 (0.68)				
PB x PW5 x BRC		0.59 (0.65)				
Workaholism					-0.37 (0.36)	0.11 (0.59)
Workaholism x PW1						-0.55 (0.87)
Workaholism x PW5						-0.96 (0.85)
R^2	0.05	0.07	0.06	0.06	0.06	0.06
F	13.74***	1.42	1.92	2.40*	2.21*	1.85
*ΔR^2		.007	.03	.03	-	.00
*ΔF		0.84	2.15	4.26*	-	0.04

Note. * p <.05; ** p < 0.01; *** p < 0.001. Presented ΔR^2 and ΔF values are associated with the highest order interaction in each respective model.

Table 7. Simple effects of the second-stage mediated-moderation (Model 4) in Study 2.

Effect	*B*	*SE*	*p*	95%CI
Simple slope for preference for busyness at the level of:				
Five extra task condition	0.51	0.24	.033	[0.04, 0.97]
One extra task condition	0.08	0.25	.746	[-0.41, 0.57]
Zero extra task condition	-0.44	0.23	.055	[-0.88, 0.01]
Simple indirect effect at the contrast level of:				
Five extra task condition	0.33	0.19	-	[0.03, 0.79]
One extra task condition	0.05	0.17	-	[-0.25, 0.45]
Zero extra task condition	-0.28	0.15	-	[-0.66, -0.06]
Index of Indirect Moderation	0.61	0.27	-	[0.19, 1.24]

Table 8. Study 3 descriptive statistics, reliability, and correlations across key variables.

#	Variable	***M***	***SD***	**α**	1	2	3	4	5
1	Conscientiousness	3.56	0.46	.84					
2	Preference for Busyness	4.44	1.31	.87	.18*				
3	Workaholism	3.32	0.57	.75	.15	.38***			
4	Task Performance (Low Busyness)	9.43	2.54	-	.04	-.13	.02		
5	Task Performance (High Busyness)	10.24	2.08	-	.01	.03	.03	.49***	
6	Task Performance (High - Low)	0.81	2.36	-	-.04	.17*	.01	-.64***	.35***

Note. * p <.05; ** p < 0.01; *** p < 0.001.

Table 9. Regression analyses for the mediated-moderation models in Study 3.

Outcome:	Preference for Busyness	Workaholism	Cognitive Task Performance Score (Unstandardized)					
			Under Low Busyness	Under High Busyness	Difference Score	Under Low Busyness	Under High Busyness	Difference Score
Constant	0.00 (0.96)	0.00 (0.33)	9.43*** (0.19)	10.24*** (0.16)	0.81*** (0.17)	9.43*** (0.19)	10.24*** (0.16)	0.81*** (0.18)
Conscientiousness	0.55*** (0.21)	0.18 (0.09)	0.40 (0.42)	0.01 (0.35)	-0.39 (0.39)	0.37 (0.42)	0.00 (0.35)	-0.37 (0.39)
Preference for Busyness (PB)			-0.28 (0.15)	0.05 (0.12)	0.33* (0.14)	-0.33* (0.16)	0.04 (0.13)	0.37* (0.15)
Workaholism						0.32 (0.36)	0.09 (0.30)	-0.23 (0.33)
R^2	0.04	0.02	0.02	0.001	0.03	0.03	0.00	0.04
F	6.99**	3.86	1.97	0.10	3.11*	1.57	0.09	2.22
Indirect Effect via PB			-0.16 (0.11)	0.03 (0.08)	0.19 (0.10)	-0.18 (0.12)	0.02 (0.08)	0.21 (0.11)
95%CI$_{Boot}$			[-0.46, -0.01]	[-0.10, 0.23]	[0.04, 0.48]	[-0.52, -0.02]	[-0.12, 0.21]	[0.04, 0.53]
			Cognitive Task Performance Score (Standardized Within Condition)					
			Under Low Busyness	Under High Busyness	Difference Score	Under Low Busyness	Under High Busyness	Difference Score
Constant			0.00 (0.07)	0.00 (0.08)	0.00 (0.07)	0.00 (0.07)	0.00 (0.08)	0.00 (0.07)
Conscientiousness			0.16 (0.17)	0.003 (0.17)	-0.15 (0.17)	0.14 (0.17)	-0.001 (0.17)	-0.15 (0.17)
Preference for Busyness (PB)			-0.11 (0.06)	0.03 (0.06)	0.14* (0.06)	-0.13* (0.06)	0.02 (0.06)	0.15* (0.06)
Workaholism						0.12 (0.14)	0.04 (0.14)	-0.08 (0.14)
R^2			0.02	0.001	0.03	0.03	0.00	0.03
F			1.97	0.10	2.81	1.57	0.09	1.98
Indirect Effect via PB			-0.06 (0.04)	0.01 (0.04)	0.08 (0.04)	-0.07 (0.05)	0.01 (0.04)	0.08 (0.05)
95%CI$_{Boot}$			[-0.18, -0.002]	[-0.05, 0.11]	[0.01, 0.20]	[-0.21, -0.01]	[-0.06, 0.10]	[0.02, 0.22]

Note. * p <.05; ** p < 0.01; *** p < 0.001. All predictors are mean-centered in this analysis.

Table 10. Simple effects of the second-stage mediated-moderation in Study 3.

Effect	*B*	*SE*	*p*	95%CI
Simple effect of busyness condition on task performance (high – low busyness condition) *at the level of:*				
Low (-1SD) Preference for Busyness	0.38	0.25	.132	[-0.11, 0.87]
Mean Preference for Busyness	0.81	0.17	<.001	[0.47, 1.16]
High (+1SD) Preference for Busyness	1.25	0.25	<.001	[0.76, 1.74]
Simple effect of busyness condition on task performance controlling for workaholism at the level of:				
Low (-1SD) Preference for Busyness	0.33	0.26	.204	[-0.18, 0.84]
Mean Preference for Busyness	0.81	0.18	<.001	[0.46, 1.16]
High (+1SD) Preference for Busyness	1.30	0.26	<.001	[0.78, 1.81]

Figure 1. Hypothesized model in Study 1.

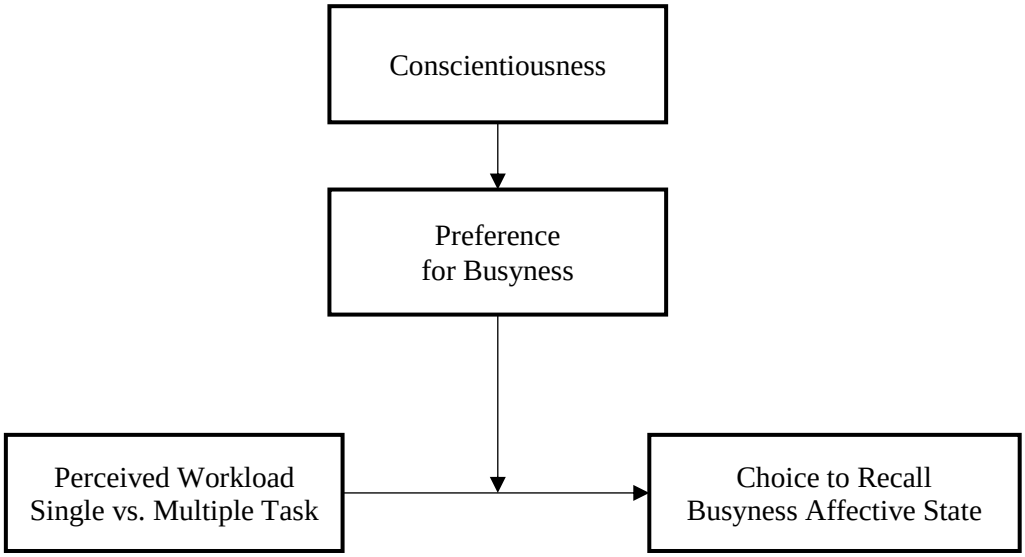


Figure 2. Hypothesized model in Study 2.

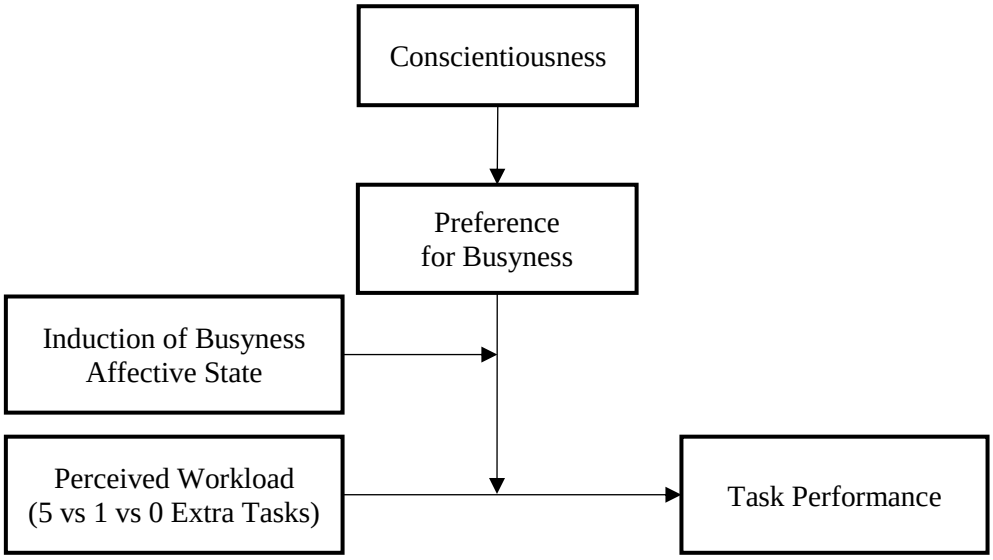


Figure 3. Interaction at the second-stage of the mediated-moderation model in Study 2.

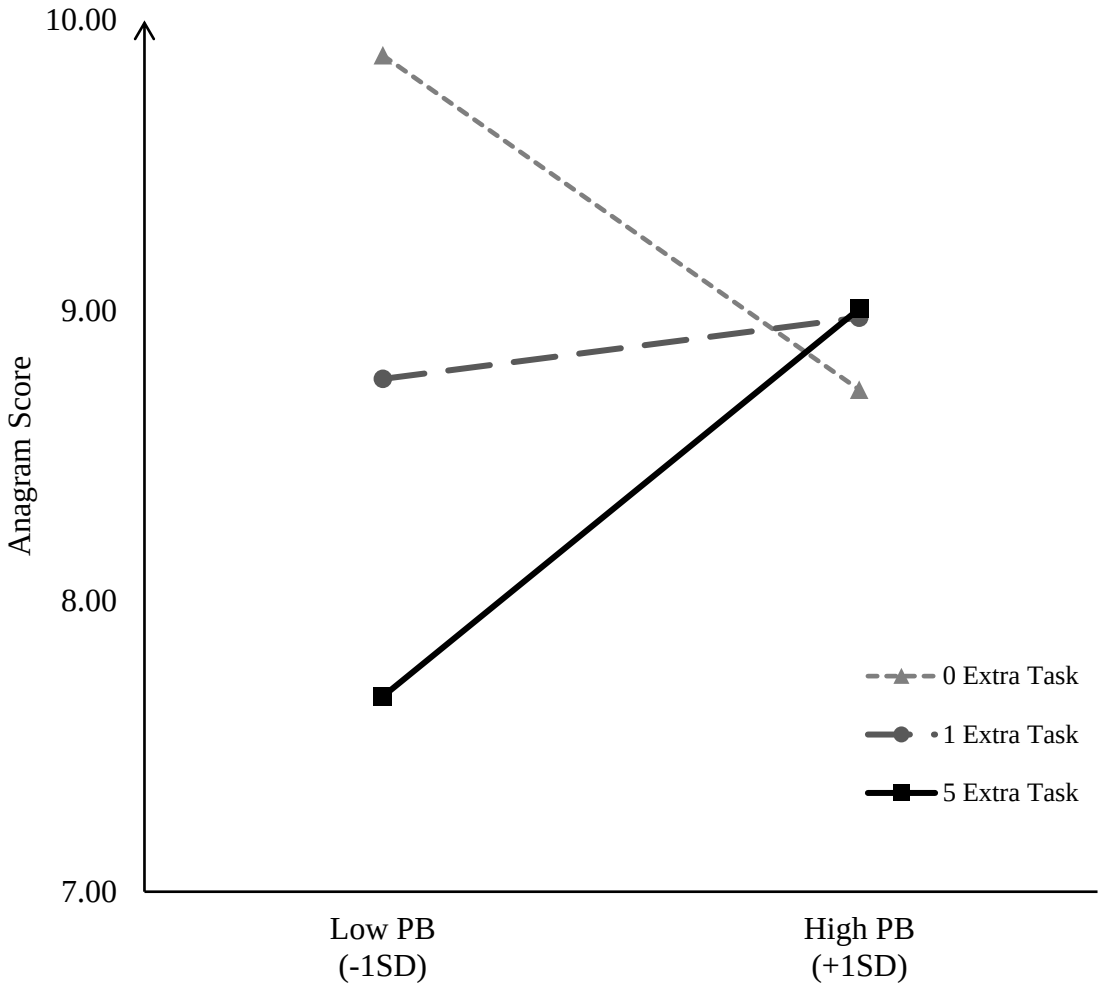


Figure 4. Within-participant change in Anagram score from the high busyness relative to low busyness condition, at the second-stage of the mediated-moderation model in Study 3.

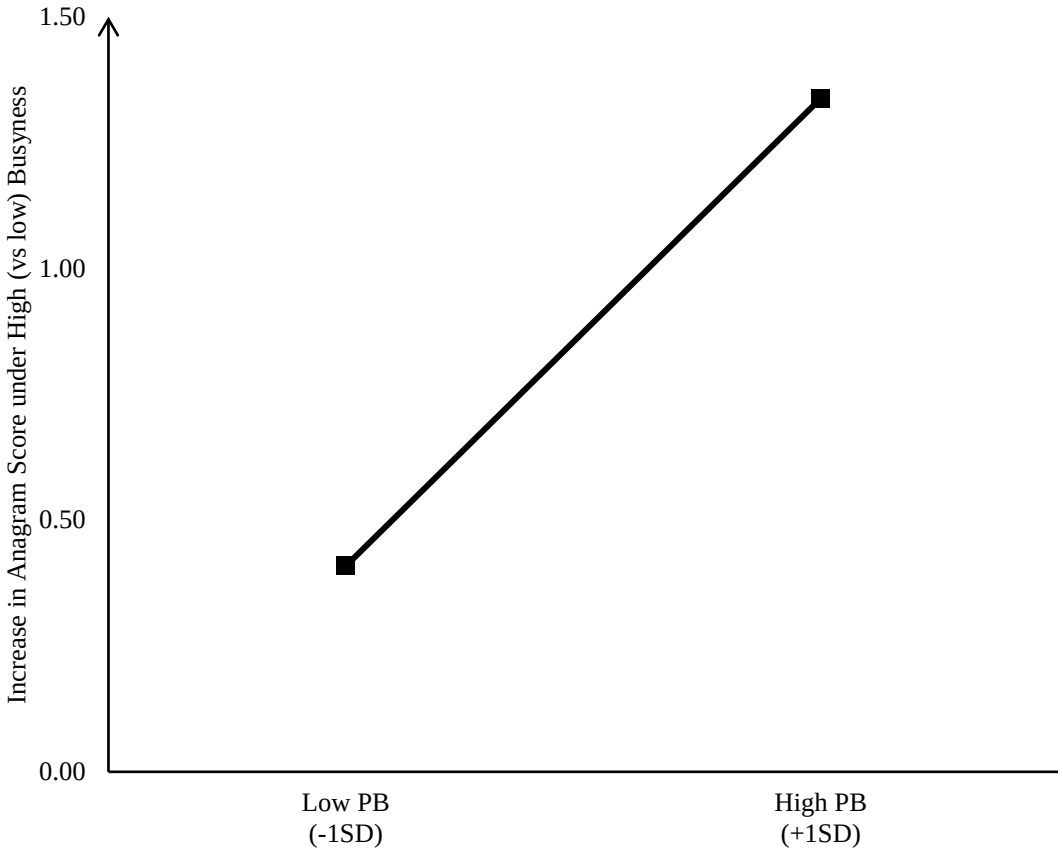
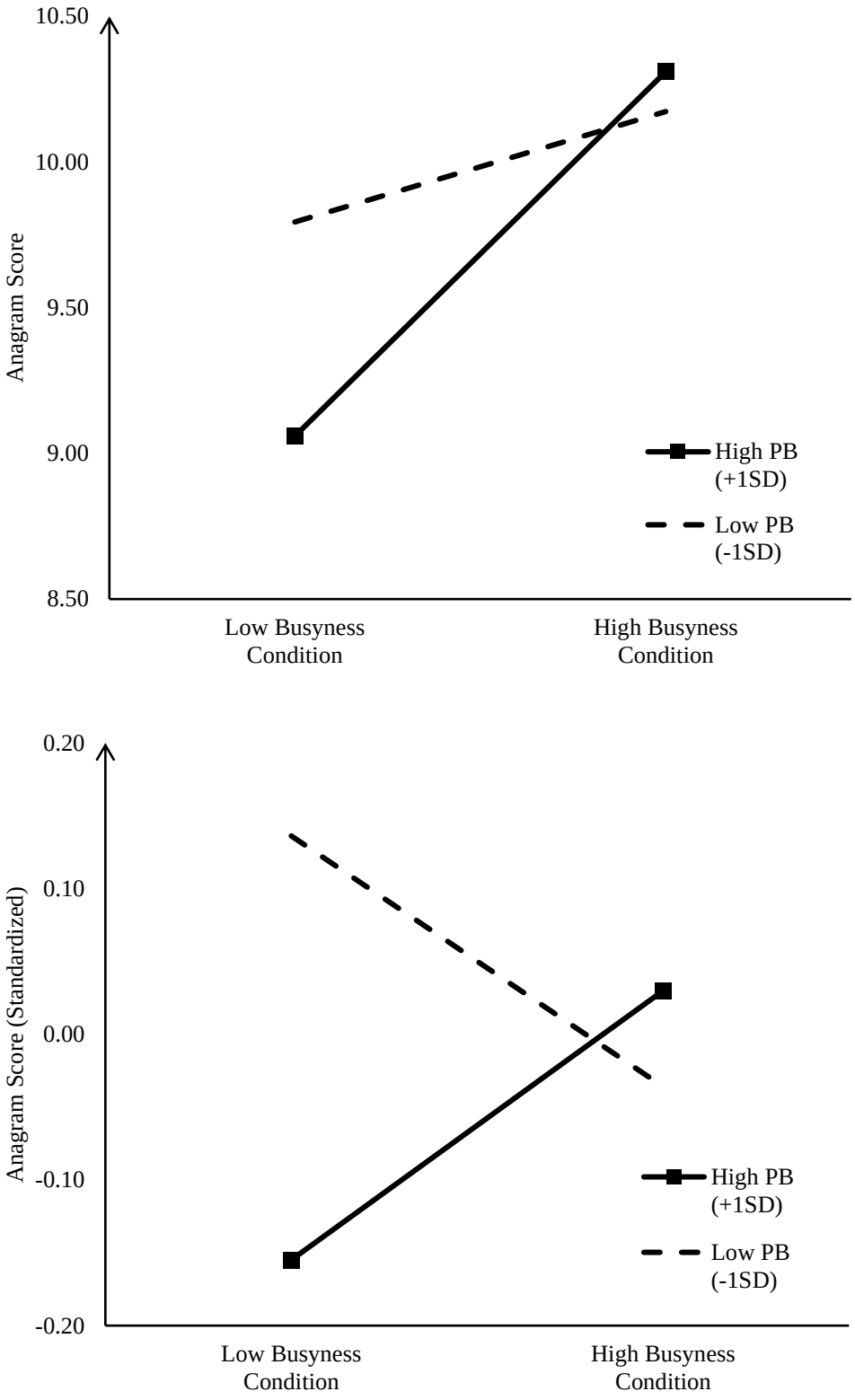


Figure 5. Simple slopes of the interaction at the second-stage of the mediated-moderation model in Study 3. The top graph shows the plot of unstandardized scores, while the bottom graph shows the plot of scores standardized within condition.



Appendix A

Supplementary Analyses and Tables

Table S1. Tabulation of the chi-square analyses for the perceived workload manipulation check in Study 2.

	Extra Task Condition			
Response	0	1	5	Total
Did not provide a sensible response	12	5	6	23
Incorrect response	17	15	4	36
Correct response	55	65	74	194
Total	84	85	84	253

Note. $\chi^2(4, N = 253) = 14.73, p = .005$

APPENDIX B

Materials Appendix

Introduction and Definitions
(Self-developed based on past research)

Throughout this survey, you will be asked questions about your feelings of ***busyness***. It is important that you understand these definitions before proceeding.

Busyness is the subjective feeling that you have a lot of work to do, and/or that you would have to spend a lot of time to complete your work. By ***work***, we mean your academic studies, paid work, internships, and activities directly related to your future career.

This definition of busyness **excludes** your engagement in leisure and non-work-related activities. In this context, work does NOT include household chores or other commitments to family and friends. It also does NOT include your co-curricular, school club, or volunteering activities.

Please answer the questions below based on the above definition of busyness:

	Not at all			Moderately			Extremely
In general, how frequently do you have the feeling of busyness?	1	2	3	4	5	6	7
When you do feel busy, how intense is this feeling of busyness?	1	2	3	4	5	6	7

Experience of Busyness Affect
(Self-developed measure)
[In pilot test only – See Footnote 1]

The following questions ask you about your perception of busyness, leisure, and stress.

The feeling of busyness is…

Unpleasant	-	Pleasant
Calming	-	Arousing
Not useful	-	Useful
Productivity hampering	-	Productivity enhancing

The feeling of being leisurely is…

Unpleasant	-	Pleasant
Calming	-	Arousing
Not useful	-	Useful
Productivity hampering	-	Productivity enhancing

The feeling of stress is…

Unpleasant	-	Pleasant
Calming	-	Arousing
Not useful	-	Useful
Productivity hampering	-	Productivity enhancing

Notes. These semantic differential items will be rated on a 7-point bipolar scale. These items were developed for this research.

IPIP-NEO-PI

How Accurately Can You Describe Yourself?

Describe yourself as you generally are now, not as you wish to be in the future. Describe yourself as you honestly see yourself, in relation to other people you know of the same sex as you are, and roughly your same age.

So that you can describe yourself in an honest manner, your responses will be kept in absolute confidence.

Indicate how accurate is each of the following statements as a description of you from 1 = *very **in**accurate,* to 5 = *very accurate.*

Conscientiousness Facets

C1: Self-Efficacy		**C4: Achievement-Striving**	
Complete tasks successfully.		Work hard.	
Excel in what I do.		Do more than what's expected of me.	
Handle tasks smoothly.		Set high standards for myself and others.	
Know how to get things done.		Am not highly motivated to succeed.	R
C2: Orderliness		**C5: Self-Discipline**	
Like order.		Start tasks right away.	
Like to tidy up.		Find it difficult to get down to work.	R
Leave a mess in my room.	R	Need a push to get started.	R
Leave my belongings around.	R	Have difficulty starting tasks.	R
C3: Dutifulness		**C6: Cautiousness**	
Keep my promises.		Jump into things without thinking.	R
Tell the truth.		Make rash decisions.	R
Break my promises.	R	Rush into things.	R
Get others to do my duties.	R	Act without thinking.	R

Conscientiousness facets are measured with the IPIP-NEO-120.

Maples, J. L., Guan, L., Carter, N. T., & Miller, J. D. (2014). A test of the International Personality Item Pool representation of the Revised NEO Personality Inventory and development of a 120-item IPIP-based measure of the five-factor model. *Psychological Assessment, 26*(4), 1070-1084.

Johnson, J. A. (2014). Measuring thirty facets of the Five Factor Model with a 120-item public domain inventory: Development of the IPIP-NEO-120. *Journal of Research in Personality, 51,* 78-89.

Neuroticism

Often feel blue.	
Dislike myself.	
Am often down in the dumps.	
Have frequent mood swings.	
Panic easily.	
Rarely get irritated.	R
Seldom feel blue.	R
Feel comfortable with myself.	R
Am not easily bothered by things.	R
Am very pleased with myself.	R

Extraversion

Feel comfortable around people.	
Make friends easily.	
Am skilled in handling social situations.	
Am the life of the party.	
Know how to captivate people.	
Have little to say.	R
Keep in the background.	R
Would describe my experiences as somewhat dull.	R
Don't like to draw attention to myself.	R
Don't talk a lot.	R

Neuroticism and Extraversion are measured with items from the IPIP-NEO-50.

Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. C. (2006). The International Personality Item Pool and the future of public-domain personality measures. *Journal of Research in Personality, 40*, 84-96.

[Preference for Busyness]
(Self-developed measure)

Using the scale below, please rate the extent that you agree with these statements on a **regular basis in your everyday life**.

1 = Strongly disagree
4 = Neither agree nor disagree
7 = Strongly agree

Preference for Busyness

1. I prefer to keep myself busy.
2. I would rather be busy than free.
3. I keep myself busy most of the time.
4. I want to take on more work than I currently have. [dropped]
5. I desire to be busier than I currently am. [dropped]
6. If I have free time, I quickly find some work to keep myself busy.

PANAS

This scale consists a list of words that describe different feelings. Indicate to what extent you feel this way **at the present moment**.

1 = not at all
3 = moderately
5 = extremely

	Not at all		**Moderately**		**Extremely**
Interested	1	2	3	4	5
Excited	1	2	3	4	5
Strong	1	2	3	4	5
Enthusiastic	1	2	3	4	5
Proud	1	2	3	4	5
Alert	1	2	3	4	5
Inspired	1	2	3	4	5
Determined	1	2	3	4	5
Attentive	1	2	3	4	5
Active	1	2	3	4	5
Jittery	1	2	3	4	5
Irritable	1	2	3	4	5
Guilty	1	2	3	4	5
Scared	1	2	3	4	5
Hostile	1	2	3	4	5
Upset	1	2	3	4	5
Distressed	1	2	3	4	5
Ashamed	1	2	3	4	5
Nervous	1	2	3	4	5
Afraid	1	2	3	4	5
Busy*	1	2	3	4	5
Stressed*	1	2	3	4	5

Notes. *denotes new items added. Actual survey presents items in randomized order.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070.

PANAS-X Guilt Subscale

This scale consists a list of words that describe different feelings. Indicate to what extent you feel this way **on a regular basis**.

1 = not at all
3 = moderately
5 = extremely

	Not at all		**Moderately**		**Extremely**
Guilty	1	2	3	4	5
Ashamed	1	2	3	4	5
Blameworthy	1	2	3	4	5
Angry with self	1	2	3	4	5
Dissatisfied with self	1	2	3	4	5
Disgusted with self	1	2	3	4	5

Guilt Proneness Measure

Test of Self-Conscious Affect – Version 3

Tangney, J. P., & Dearing, R. L. (2002). *Shame and guilt*. New York: Guilford Press.

Below are situations that people are likely to encounter in day-to-day life, followed by several common reactions to those situations.

As you read each scenario, try to imagine yourself in that situation. Then indicate how likely you would be to react in each of the ways described. We ask you to rate all responses because people may feel or react more than one way to the same situation, or they may react different ways at different times.

*The presentation order of each scenario and also the items within each scenario will be randomized.

You make plans to meet a friend for lunch. At five o'clock, you realize you have stood your friend up.

	Not likely				Very likely
You would think: "I'm inconsiderate." [Shame Self-talk]	1	2	3	4	5
You would think that you should make it up to your friend as soon as possible. [Guilt Self-talk]	1	2	3	4	5
You would think: "My boss distracted me just before lunch." [Blaming others]	1	2	3	4	5

You break something at work and then hide it.

	Not likely				Very likely
You would think about quitting. [Shame Self-talk]	1	2	3	4	5
You would think: "This is making me anxious. I need to either fix it or get someone else to." [Guilt Self-talk]	1	2	3	4	5
You would think: "A lot of things aren't made very well these days." [Blaming others]	1	2	3	4	5

At work, you wait until the last minute to plan a project, and it turns out badly.

	Not likely				Very likely
You would feel incompetent. [Shame Self-talk]	1	2	3	4	5
You would feel: "I deserve to be reprimanded for mismanaging the project." [Guilt Self-talk]	1	2	3	4	5
You would think: "There are never enough hours in the day." [Blaming others]	1	2	3	4	5

You made a mistake at work and found out that a co-worker was blamed for the error.

	Not likely				Very likely
You would keep quiet and avoid the co-worker. [Shame Self-talk]	1	2	3	4	5
You would feel unhappy and eager to correct the situation. [Guilt Self-talk]	1	2	3	4	5
You would think the company did not like the co-worker. [Blaming others]	1	2	3	4	5

While playing around, you throw a ball, and it hits your friend in the face.

	Not likely				Very likely
You would feel inadequate that you can't even throw a ball. [Shame Self-talk]	1	2	3	4	5
You would apologize and make sure your friend feels better. [Guilt Self-talk]	1	2	3	4	5
You would think maybe your friend needs more practice at catching. [Blaming others]	1	2	3	4	5

You are driving down the road, and you hit a small animal.

	Not likely				Very likely
You would think: "I'm terrible." [Shame Self-talk]	1	2	3	4	5
You'd feel bad you hadn't been more alert driving down the road. [Guilt Self-talk]	1	2	3	4	5
You would think the animal shouldn't have been on the road. [Blaming others]	1	2	3	4	5

You walk out of an exam thinking you did extremely well, then you find out you did poorly.

	Not likely				Very likely
You would feel stupid. [Shame Self-talk]	1	2	3	4	5
You would think: "I should have studied harder." [Guilt Self-talk]	1	2	3	4	5
You would think: "The instructor doesn't like me." [Blaming others]	1	2	3	4	5

While out with a group of friends, you make fun of a friend who's not there.

	Not likely				Very likely
You would feel small...like a rat. [Shame Self-talk]	1	2	3	4	5
You would apologize and talk about that person's good points. [Guilt Self-talk]	1	2	3	4	5
You would think that perhaps that friend should have been there to defend himself/herself. [Blaming others]	1	2	3	4	5

You make a big mistake on an important project at work. People were depending on you, and your boss criticizes you.

	Not likely				Very likely
You would feel as if you wanted to hide. [Shame Self-talk]	1	2	3	4	5
You would think: "I should have recognized the problem and done a better job." [Guilt Self-talk]	1	2	3	4	5
You would think your boss should have been clearer about what was expected of you. [Blaming others]	1	2	3	4	5

You are taking care of your friend's dog while they are on vacation, and the dog runs away.

	Not likely				Very likely
You would think, "I am irresponsible and incompetent." [Shame Self-talk]	1	2	3	4	5
You would vow to be more careful next time. [Guilt Self-talk]	1	2	3	4	5
You would think your friend must not take very good care of her dog or it wouldn't have run away. [Blaming others]	1	2	3	4	5

You attend your co-worker's housewarming party, and you spill red wine on a new cream-colored carpet, but you think no one notices.

	Not likely				Very likely
You would wish you were anywhere but at the party. [Shame Self-talk]	1	2	3	4	5
You would stay late to help clean up the stain after the party. [Guilt Self-talk]	1	2	3	4	5
You would wonder why your co-worker chose to serve red wine with the new light carpet. [Blaming others]	1	2	3	4	5

Two-Factor Measure of Workaholism

Please rate to what extent do you agree that each of the statements below about yourself.

1 = Strongly disagree
7 = Strongly agree

Working Excessively

1. I seem to be in a hurry and racing against the clock.
2. I find myself continuing to work after my coworkers have called it quits.
3. I stay busy and keep many irons in the fire.
4. I spend more time working than on socializing with friends, on hobbies, or on leisure activities.
5. I find myself doing two or three things at one time such as eating lunch and writing a memo, while talking on the telephone.

Working Compulsively

1. It is important to me to work hard even when I do not enjoy what I am doing.
2. I feel that there is something inside me that drives me to work hard.
3. I feel obliged to work hard, even when it is not enjoyable.
4. I feel guilty when I take time off work.
5. It is hard for me to relax when I am not working.

Schaufeli, W. B., Shimazu, A., & Taris, T. W. (2009). Being driven to work excessively hard: The evaluation of a two-factor measure of workaholism in the Netherlands and Japan. *Cross-Cultural Research, 43*(4), 320-348.

[Induction of Performance Motive]

In this section, we examine the relations between memory and cognitive performance. First, we will ask you to recall an emotional event from your past. Your choice of which emotional event to recall may affect how you perform on the later tasks.

[One Task Condition]

Then, you will complete **one set** of cognitive tasks. This task was found to be relatively difficult in earlier studies. To do well, you must analyze complex patterns and use logical reasoning to identify the solution under time pressure. Nevertheless, people who put in effort to think quickly and consider multiple alternatives are usually successful at solving these problems. The cognitive task will take about 3 minutes.

[Five Task Condition]

Then, you will complete **five sets** of cognitive tasks. These tasks were found to be relatively difficult in earlier studies. To do well, you must analyze complex patterns and use logical reasoning to identify the solution under time pressure. Nevertheless, people who put in effort to think quickly and consider multiple alternatives are usually successful at solving these problems. Each cognitive task will take about 3 minutes.

The manipulation scenario was adapted from Leung and colleagues (2014).

Leung, A. K.-y., Liou, S., Qiu, L., Kawn, L. Y. Y., Chiu, C.-y., & Yong, J. C. (2014). The role of instrumental emotion regulation in the emotions-creativity link: How worries render individuals with high neuroticism more creative. *Emotion, 14*(5), 846-856.

[Preference for Recalled Events]

Recall Task

You will do the cognitive task right after the recall task.

Before you proceed, we will ask which of the following period of time in your past would you prefer to recall before the cognitive task.

Using the scale below, rate the degree to which you would like to spend 5 minutes recalling each of the following events.

1	2	3	4	5
Not at all				Extremely

1. A **recent** event that made me feel very **busy**.
2. A **past** event that made me feel very **busy**.
3. A **recent** event that made me feel very **bored**.
4. A **past** event that made me feel very **bored**.
5. A **recent** event that made me feel very **calm**.
6. A **past** event that made me feel very **calm**.
7. A **recent** event that made me feel very **happy**.
8. A **past** event that made me feel very **happy**.
9. A **recent** event that made me feel very **guilty**.
10. A **past** event that made me feel very **guilty**.

Manipulation Check

Instructions: Answer the following two questions with the scale below.

1	2	3	4	5
Not at all				Extremely

1. To what degree do you expect the upcoming cognitive task to be effortful?
2. To what degree do you expect the upcoming cognitive task to be cognitively demanding?
3. According to previous instructions, how many cognitive tasks will you perform after the recall task? (Free response)

The recall task is adapted from:

Leung, A. K.-y., Liou, S., Qiu, L., Kawn, L. Y. Y., Chiu, C.-y., & Yong, J. C. (2014). The role of instrumental emotion regulation in the emotions-creativity link: How worries render individuals with high neuroticism more creative. *Emotion*, *14*(5), 846-856.

[Busyness Manipulation Recall Task]
(Self-developed manipulation scenarios)

[High Busyness Condition]

For the next 4-5 minutes, please write about a recent period of time where you experienced **very high** levels of busyness. In particular, recall the amount of work you had to do and how much time these work activities took from your daily schedule. Next, focus on how these activities made you feel. Describe these feelings in as much detail as possible as though you were experiencing them right now.

We hope you provide an honest account. Please be careful NOT to include any identifying information of yourself or any other persons in your account. Your entire response should be anonymous.

[Low Busyness Condition]

For the next 4-5 minutes, please write about a recent period of time where you experienced **very low** levels of busyness. In particular, recall how you were able to do activities that you choose at your own leisure. Next, focus on how these activities made you feel. Describe these feelings in as much detail as possible as though you were experiencing them right now.

We hope you provide an honest account. Please be careful NOT to include any identifying information of yourself or any other persons in your account. Your entire response should be anonymous.

Manipulation Check

Instructions: Answer the following two questions with the scale below.

1	2	3	4	5
Not at all				Extremely

1. To what degree do you expect the upcoming cognitive task to be effortful?
2. To what degree do you expect the upcoming cognitive task to be cognitively demanding?
3. How busy do you feel lately?
4. According to previous instructions, how many extra cognitive tasks will you perform after the recall task? (Free response)

[Performance Demand Manipulation Study 2]

You will now complete a cognitive performance task.

This task was found to be relatively difficult in earlier studies. To do well, you must analyze complex patterns and quickly consider multiple alternatives to identify the solution under time pressure. Nevertheless, people who put in effort to think quickly and consider multiple alternatives are usually successful at solving these problems.

The task will take about 12 minutes.

[Zero Extra Task Condition]

After this task, there will be no more cognitive tasks. You will complete a demographics questionnaire before the end of the study.

[One Extra Task Condition]

After this task, there will be one more set of cognitive tasks. The additional task is of similar difficulty and will take about 3 minutes.

[Five Extra Task Condition]

After this task, there will be five more sets of cognitive tasks. The additional tasks are of similar difficulty and will take about 3 minutes each.

[Performance Task]

Instructions:

- For each question, you will be presented 5 letters.
- Your task is to rearrange the letters to form an actual English word.
- You must use ALL the given letters to form a 5-letter word.
- You CANNOT repeat any given letter.

An example question is:

IASYD

The correct answer is:

DAISY

Additional hints:

- Each question only has ONE correct solution that uses all 5 letters.
- All the answers to this task are common and simple English words.
- Responses are not case sensitive (e.g., both DAISY and daisy are acceptable)

- - - page break - - -

Important Instructions

You will only get one chance to respond to each question. Please submit your answer only when you believe you have found the right answer. Submitted answers are final and no changes are permitted.

You may find some trials to be more difficult than others. Type “SKIP” if you do not know the answer. You CANNOT return to the questions that you have skipped.

There is no time limit on this task, but on average it will take about 12 minutes.

[Performance Task]

Word List for Study 2

#	Scramble	Solution	#	Scramble	Solution
1	FNKEI	KNIFE	8	NIACB	CABIN
2	ICRAH	CHAIR	9	ASKCN	SNACK
3	HCIPT	PITCH	11	ALKPN	PLANK
4	ONECI	[Unsolvable]	12	DAGNE	[Unsolvable]
5	AUGDR	GUARD	13	FTEIH	THIEF
6	EGUJD	JUDGE	14	KTNEO	TOKEN
7	EVLGO	GLOVE	15	OANRP	APRON
8	ACELO	[Unsolvable]			

Word List for Study 3 Session 1

#	Solution	Scramble	#	Solution	Scramble
1	KNIFE	FNKEI	8	SNACK	ASKCN
2	GUARD	AUGDR	9	HONEY	NOYEH
3	TOKEN	KTNEO	11	MATCH	HACTM
4	[Unsolvable]	ACELO	12	[Unsolvable]	DAGNE
5	BLADE	ABEDL	13	WOMAN	OWNAM
6	GLOVE	EVLGO	14	CROWD	ORDCW
7	MONTH	HTMNO	15	FRUIT	IRTUF
8	[Unsolvable]	ONECH			

Word List for Study 3 Session 2

#	Solution	Scramble	#	Solution	Scramble
1	CABIN	NIACB	9	LIGHT	GITHL
2	CHAIR	ICRAH	10	DRINK	NIRDK
3	PITCH	HCIPT	11	PLANK	ALKPN
4	[Unsolvable]	NOLAC	12	[Unsolvable]	UTAGS
5	THIEF	FTEIH	13	CLOWN	OLCNW
6	JUDGE	DEGUJ	14	TRUCK	KRTCU
7	APRON	OANRP	15	VIRUS	SRIVU
8	[Unsolvable]	CLEJA			