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The Dark Triad and Impulsivity: Predictors and Correlates of Workplace Representative Task Problem Solving and Decision Making

by

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requirements for the degree of

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Dissertation Committee:
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Abstract

This research investigated group and individual differences in decision-making and problem-solving on workplace representative tasks, and whether certain personality traits correlated with or were predictors of participant strategy. In parallel studies done online (N = 214) and in-person (N = 80) with Portland State University undergraduate School of Business students, performance was measured on two workplace representative tasks under two different difficulty conditions.

The Number Place experiment resulted in two major findings: First, when given a comparatively easy task, women had more Time Remaining than men. However, this was moderated by the difficulty condition, such that men had more Time Remaining than women on the comparatively difficult task. This result provided strong evidence that men and women respond differently to additional constraints in accomplishing their task so far as men seem to be more willing to disregard specific instructions and circumvent the prescribed process – in essence, cheating.

After incorporating personality into the model, a Second-Order, Dark Triad specific item construct – The DarkNucleus – emerged from the analysis. The DarkNucleus, congruent with recent findings related to an underlying Dark "D" Factor, was a significant predictor of Incorrect mistakes. Further implications are included in the discussion section with trending results reported in their respective sections of relevancy.

Dedication

For my grandmother, Jean Kendall Glazer…

…because a promise is a promise.

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1. Overview

The original concept for this research evolved out of intersecting interests across a wide range of concepts from different academic disciplines and based on worldly observations. From these observations, theory and underlying logic was reviewed in order to design experiments that allowed us to better understand certain aspects of problem-solving and decision making on workplace representative tasks in simulated workplace scenarios and make insights based on sex, personality, and experimental condition. Building on prior work on impulsivity and with its known relationship to Machiavellianism (Gerbing et al. 1987), incorporation of the Dark Triad personality measures was an organic next step and natural integration. Additionally, as there was initial interest in Cutting Corners and an antithetical measure to the "dark" personality measures, self-reported Shortcutting (SAWS) behavior and overall wellbeing (SWLS) were measured to determine potential predictors of performance on the chosen tasks.

Theoretical constructs from multiple disciplines converged to indicate participants would be prone to different strategies in the same situation because of their individual and group differences. Additionally, experimental conditions such as task Difficulty and a distracted environment may impact a participants' chosen strategy.

2. Literature Review

2.1 The Dark Triad, Impulsivity, and Life Satisfaction

This research began with particular interest, available expertise, and prior knowledge regarding the dark side of personality. The original focus was placed on dark personality measures – specifically The Dark Triad – and Impulsivity. Comprised of Machiavellianism, narcissism, and psychopathy, and predictors of low empathy, antisociality, manipulation, and general amorality (Furnham, Richards, & Paulhus, 2013; Jonason, Strosser, Kroll, Duineveld, & Baruffi, 2015), the prevalence of such behavior indicated that some systems rewarded what would generally be considered malevolent behavior.

Named after political strategist and author of The Prince, Machiavelli postulated that all individuals attempting to seize and retain power, whether honorable or unscrupulous themselves, must take an amoral perspective and be prepared to implement substantial deception when dealing with corrupt individuals. Machiavellianism is defined by three overlapping beliefs about humans: 1) people must be manipulated, 2) people are selfish, and 3) pragmatism before principle (Hunter, Gerbing, & Boster, 1982; O'Boyle, Forsyth, Banks, & McDaniel, 2012). Individuals characterized as high in Machiavellianism consider themselves to be skilled in manipulation (though evidence suggests they are often not as skilled as they believe) and are prone to making suspect choices (Dahling, Whitaker, & Levy, 2009; Kish-Gephart, Harrison, & Trevino, 2010). Concerning career success, individuals high in

Machiavellianism tend to thrive in unstructured, less organized firms, likely due to their pragmatism before principle perspective.

Extreme narcissism manifests as ultimate self-praise and glorification, though levels manifest to some degree in all individuals (Rauthmann & Kolar, 2012). This narcissism can include, but is not limited to, overconfidence and belief in oneself, delusions of grandeur and control, success in all endeavors, and admiration all with an almost unrelenting desire to have these reinforced by the public at large (Freud, 1914; Grijalva & Newman, 2014). There is a difference between a healthy level of self-respect and confidence as opposed to narcissistic self-infatuation. For individuals lower on the narcissism scale, extreme narcissists seem arrogant, aggressive, and generally want to avoid them. They cannot help but overstate their successes, shirk criticism, and all but refuse to compromise (Resick, Whitman, Weingarden, & Hiller, 2009). Beyond simply dismissing any negative feedback, individuals high in narcissism may respond with aggression when criticized publicly, often doubling down and attempting to silence their critics through force (Ronningstam, 2005).

Psychopathy is arguably the most toxic of the Dark Triad traits, as high psychopathy individuals often come across as outwardly charismatic while remaining emotionally shallow and ruthless in pursuit of their own ends (Mathieu, Neumann, Hare, & Babiak, 2014). Often behaving with disregard for both other people and social norms, individuals high in psychopathy tend to lack remorse when inflicting harm (O'Boyle et al., 2012). When the charming and charismatic process does not achieve the desired

ends, psychopathy can lead to questioning authority, deflection, and callousness (Hare & Neumann, 2009). Similar to narcissism in that it was once classified as a disorder, further research has demonstrated psychopathy to be prevalent on a continuum and occurring in subclinical populations (Nathanson, Paulhus, & Williams, 2006). Additionally, psychopathy has been associated with academic cheating, a fast-life strategy, and is the single biggest clinical level predictor of violent recidivism (O'Boyle, Forsyth, Banks, & McDaniel, 2012; Williams, McAndrew, Learn, Harms, & Paulhus, 2001; Williams, Nathanson, & Paulhus, 2010). Focusing on subclinical expressions of the Dark Triad, this research looks to detect relationships, specifically predictors and correlates, between the presence of Dark Triad traits and the decision making and problem-solving behavior of participants on the workplace representative tasks.

Impulsivity is displayed by limited forethought and consideration of potential consequences. For instance, actions or behavior considered to be unnecessarily risky and possible to result in perilous consequences (Daruna & Barnes, 1993) would be described as impulsive. However, impulsivity that begets positive outcomes is viewed in a favorable light and described as bold or courageous as opposed to reckless. As such, much the way shortcutting behavior can be beneficial or detrimental depending on contextual factors, impulsivity can be considered either functional or dysfunctional (Jonason & Jackson, 2016). Additionally, mpulsivity is evidenced by action without proper consideration for all outcomes and a general lack of regard for long-term gratification (Rachlin, 2000).

Functional and dysfunctional impulsivity have been linked directly to two of the Dark Triad traits, narcissism and psychopathy (Vazire & Funder, 2006), respectively, giving conceptual reasons to expect impulsivity may be associated with the aforementioned traits in the experiments. For example, individuals high in narcissism tend to quickly engage others, looking to create positive first impressions (Friedman, Oltmanns, Gleason, & Turkheimer, 2006), a behavior consistent with functional impulsivity. Conversely, as psychopathy is correlated with substance misuse (Patrick, 2005), it is unsurprising to find binge drinkers were found to have significantly higher dysfunctional impulsivity compared to control groups (Pitts & Leventhal, 2012).

Though the foundation of personality interest is in "Dark" traits, there is an association between the specific Dark Triad traits and overall wellbeing. A reasonable body of literature (Park, Peterson, & Ruch, 2009; Pollock, Noser, Holden, & Zeigler-Hill, 2016; Vella-Brodick, Park, Peterson, 2009) exists regarding the relationships between happiness and Subjective Wellbeing with additional work to specifically associate the Dark Triad with prosociality, religiosity, and happiness (Aghababaei, Mohammadtabar, & Saffrania, 2014). Indeed, life satisfaction as evaluated by the Satisfaction with Life Scale showed consistent and positive relations to narcissism (Aghababaei, & Blachnio, 2015) and, albeit inconsistent, negative relations to Machiavellianism and psychopathy. Generally confirming this finding, wellbeing as evaluated by the Satisfaction with Life Scale and the Oxford Happiness Questionnaire reported negative associations between Machiavellianism and psychopathy with wellbeing measures (Egan, Chan, & Shorter,

2014). In contrast to studies using trait measures of happiness, Jonason and Tome (2018) made a novel attempt at examining Dark Triad trait associations with projected happiness in solving adaptive tasks from the fundamental social motives framework (Neel, Kenrick, White, & Neuberg, 2016). Overall, individuals high in psychopathy only derived happiness from "playing it fast" where individuals high in narcissism and Machiavellianism derived at least some happiness from "playing it safe", with all three traits associated with lower expectations of happiness with response to the latter. Further, those high in narcissism and Machiavellianism might be willing to "play it safe", but the motivation between them may differ and each of them may not extract as much enjoyment as if they had played it fast (Jonason & Tome, 2018).

The Dark Triad has evidenced incremental validity over other scales in measuring the dark side of personality. All three Dark Triad traits involve a tendency towards individual manipulation in the vein of selfish endeavors (Lee et al., 2013), and correlated with fraud, cheating, and theft. While the behaviors predicted by the Dark Triad go beyond these specific examples to implications in problem-solving from sexual activity to core belief systems, the Dark Triad covers a conceptually important personality region in the greater decision making landscape and makes conceptual sense as being related to experiments that potentially incentivize some form of deviation from the prescribed process – in essence, cheating.

2.2 Decision-making and The Dark Triad in the Workplace

Formally, decision-making is the process by which a course of action or choice is selected from the sample space of possible alternatives (Crozier & Ranyard, 1997). Rational Action Theory predicts that individuals and entities make decisions and solve problems congruent with their perceived optimal outcome and utility maximization of whatever interest they serve (Blume & Easley, 2008). To achieve this utility maximization, decision-making requires analyzing the measured metrics of the available alternatives in terms of how well each fulfills the evaluative criteria. In other words, the decision-maker should start with the desired outcome, analyze the available courses of action, and select the option that maximizes the result of the predetermined goal. This is why individuals focus on optimizing the metrics and criteria that managers and bureaucratic administrators measure (Holzer, Ballard, Kim, Peng, & Deat, 2017), regardless of whether optimizing said metric optimizes the system.

Decision-making often appears straightforward, but real-world conditions resulting from imperfect information with which to make reasonable analyses (Triantaphyllou, 2000) can confound the ability to reach optimal decisions and lead to approach-avoidance (Miller, 1944). Definitively more common when a decision has lasting impact or is otherwise momentous, approach-avoidance conflict occurs when a goal has simultaneous positive and negative results (Allport, 1948). Attempting to perform formal and complete decision-making strategies for every situation that required a terminal choice would be beyond tedious and expensive, could lead to

information overload and analysis paralysis (Roberts, 2010), and ultimately could be deleterious to the desired outcome. Regardless of any institutional approach-avoidance conflict or conflicting goals, business entities (by way of the individuals within them) do, at least eventually, have to take some form of action based on whatever analysis is performed on the decision that needs to be made. While it would be ideal to have all the information necessary to make a perfectly informed decision from the business' perspective, all decisions are subject to limitation or bias and the preferred cognitive style of the individual decision-maker.

Individuals can vary substantially in mental models and worldly perspectives, and psychological research has identified a variety of cognitive styles. From the previously mentioned theory of Rational Action, a Maximizer forced with a decision would attempt to make the ideal and optimal choice after significant analyses of all relevant and available information. On the contrary, and assuming decision-making is not done at random or without analysis of any kind, a Satisficer would merely look to find a solution that meets a minimum standard and alleviates the problem only as much as is required to continue business functions (Simon, 1955; Simon 1956). Whether a true or pure Maximizer or Satisficer exists in any particular situation or context, their differences in theoretical choice situations demonstrate the contrast between each style.

Additionally, Dual Process Theory postulates that individuals are simultaneously using two kinds of cognitive processing: a bottom-up, fast, and intuitive decision-making system and a top-down, slow, and explicit decision-making system (Lizardo et al., 2016).

Derived from assumptions from evolution (i.e. inclusive fitness), LHT may help explain the origin and development of these two kinds of cognitive processing and strategic implementation (Hawkes, 2006; Roff, 2002).

A handful of recent publications have linked the Dark Triad to studies around a variety of workplace activities such as work groups and team processes (Baysinger, Scherer, & LeBreton, 2014), leadership (Kaiser, LeBreton, & Hogan, 2015; Krasikova, Green, & LeBreton, 2013), and counterproductive workplace behavior (Scherer, Baysinger, Zolynsky, & LeBreton, 2013; Wu & Lebreton, 2011). Until their Meta-Analytic review (O'Boyle et al., 2012), links between the Dark Triad traits and job performance were inconclusive with empirical evidence for both positive and negative impacts on job performance. To better understand these conclusions, the researchers decoupled the Dark Triad traits and found negative relationships between both Machiavellianism and job performance and psychopathy and job performance, and a trending relationship between narcissism and job performance. However, when moderating for organizational hierarchy, they found a negative relationship between narcissism and job performance for individuals working in authoritative positions. Congruently, the relationship between narcissism and job performance was stronger in collectivist cultures.

These findings provide initial evidence that the relationship between Dark Triad traits and job performance is more than simply two variables and researchers should consider potential interaction effects. In response to this, researchers further

investigated and examined potential moderators as well as compared different measurement methods, specifically how job performance was measured (Guedes, 2017). For example, when self-evaluations were used to rate job performance, individuals high in narcissism gave themselves better evaluations, in turn leading to a significant positive relationship when using this subjective measure. However, when using objective measures, specifically Return on Sales and Return on Assets, the relationship between narcissism and job performance was no longer significant (Guedes, 2017). Seemingly contrary to results from evidence so far, (Reina, Zhang, & Peterson, 2014) reconciled the positive and negative sides of CEO grandiose narcissism, finding that it had an indirect positive impact on organizational performance. The strong identification with their organization of CEOs high in narcissism were associated with higher rates of integration with top management, which in turn was associated with better overall organizational performance (Reina et al., 2014). While there do not appear to be any published findings specifically regarding the relationship between Machiavellianism and workplace performance, Blickle and Schütte (2017) established an association between psychopathy and workplace performance. The researchers conceptualized psychopathy as specific forms of impulsivity and dominance, per the findings of Lykken (1995), and discovered education level to be a moderator of the relationship between "fearless dominance" and workplace performance.

Though generally considered malevolent and detrimental to the workplace, some research suggests the negative effects of Dark Triad traits can be exaggerated

(Blickle, Schutte, & Genau, 2018) and that organizations may benefit from individuals with a higher presence of Dark Triad traits. Campbell and Campbell (2009) argue that individuals high in narcissism may strive, more so than individuals lower in narcissism, to achieve positions of leadership. Further studies corroborate this, as those high in narcissism are rated highly on leadership criteria (Brunell, Gentry, Campbell, Hoffman, Kuhnert, & DeMarree, 2008) and linked to success in job interviews (Paulhus, Westlake, Calvez, & Harms, 2013). Generally speaking, narcissism is positively related to leadership emergence (Nevicka, De Hoogh, Van Vianen, Beersma, & McIlwain, 2011; Ong, Roberts, Arthur, Woodman, & Akehurst, 2016) and, in turn, CEO narcissism is related to higher executive compensation packages and larger disparities between these executive officers and lower level employees (O'Reilly, Doerr, Caldwell, & Chatman, 2014).

Congruent with narcissism, research has shown that Machiavellianism positively predicted the acquisition of leadership positions (Spurk, Keller, & Hirschi, 2016). While power, wealth, and admiration are of particular appeal to individuals higher in the Dark Triad, individuals high in Machiavellianism may identify specific leadership opportunities and actively work towards that specific goal. Indeed, research has shown that individuals higher in Machiavellianism were more willing to be dishonest in order to land a desired job (Lopes & Fletcher, 2004).

Scholars have argued that, at least in a business context, individuals high in psychopathy may fulfill some adaptive function – especially for themselves (Smith & Lilienfeld, 2013). Combined with their love of money, immorality (Glenn, Koleva, Iyer,

Graham, & Ditto, 2010), and propensity for unethical decision making (Stevens, Deuling, & Armenakis, 2012), individuals higher in psychopathy appear to be successful members of an organization but pose additional risks as they reach higher levels of leadership roles.

2.3 Life History Theory and Decision Making Strategies

Life History Theory is a mid-level theory that describes different strategies implemented by different organisms in their reproductive behavior (Schmitt & Rhode, 2013; Stearns, 1976). Based on inclusive fitness and parental investment requirements, LHT explains how tradeoffs in allocation of scarce energy and resources shaped by natural selection explain the anatomy and behavior of organisms seen today (Jasienska, 2009; Mueller, Guo, & Ayala, 1991; Reynolds & McCrea, 2016; Stearns, 1977). Present day diversity of life demonstrates the contrasting life cycles and reproductive strategies for both differing species and differences between individuals at a species level (Dobson, 2007). The current LHT paradigm, in addition to helping explain differences in inner species strategies and dynamics, provides insight into the practical trade-offs and energy budgeting decisions individuals make when deciding how to allocate their available resources.

Biologically, the first part of the current paradigm holds that life histories vary across different species' body sizes. Using a size continuum from mouse to elephant, mice have generally shorter lives and quick reproduction cycles compared to elephants, who have generally longer lives and slower reproduction cycles (Brown, Gillooly, Allen, Savage, & West, 2004; Calder, 1984; Dobson, 2007; Peters, 1986). The second component of the current paradigm, thought of as the slow-fast continuum, contrasts the strategies as explained by mortality patterns based on environmental factors such as competition and predation. Generally speaking, there is a tradeoff between

reproduction and survival such that a range of high to low exists both within and across species (Brown, 1995; Brown & Sibly, 2006; Promislow & Harvey, 1989, 1991). Maximizing reproductive success is optimized to the given environment by implementing a strategy based on subconscious evaluation of risks and rewards given specific traits and contexts (Gangestad & Simpson, 2000; Jonason, Li, & Cason, 2009). Overall, this leads to men being more bottom-up, short-term interested, and generally fast life strategic than women, who, by comparison, are more top-down, long-term, and slow life strategic (Arias, 2002; Wilson & Daly, 2004).

While these studies used specifically human participants and gave them a task unrelated to mating, individual's life history strategy and mental model of the world could not be entirely decoupled from their decision-making (Acquisti and Grossklags, 2005; Naqvi, Shiv, & Bechara, 2006) and this research specifically looked to observe and record the results of these decisions on the chosen task. Had this research been able to fulfill its original conceptual design perfectly – as in, with no constraints on the experimental design and implementation – the same concepts of tradeoffs within arbitrarily constrained environments and with a manipulated condition may have activated participants instinctual decision-making schema and been evidenced in the analysis.

In terms of LHT, a fast life strategy is synonymous with an r-strategy and a slow life strategy is analogous with a K-strategy. These r and K strategies relate to the high quantity, low individual investment and low quantity, high individual investment

strategies, respectively (Reznick, Bryant, & Bashey, 2002). Species that take in and process information can adapt to nonstochastic environments by modifying their strategy and shifting the tradeoff balance in response to this change. These interspecies differences help to identify not just successful organisms, but successful traits within the observed species (Wilbur, Tinkle, & Collins, 1974). Fundamentally, LHT is a framework to address how, in the face of a finite energy budget, an organism should allocate their resources towards maximum fitness.

Slow Life or K-strategists are predisposed to producing a small number of progeny and investing heavily in each to provide the highest probability of survival and success into adulthood. When environmental factors change and a form of resource constraint is imposed, K-strategists slow down even more and attempt to make their resources last through the change in environment; in essence, they play by collectivism and cooperation. The K-strategist model assumes a maximally competitive environment (Pianka, 1970) and, under such pressure, diverts resources otherwise allocated and acquired for individual development into basic sustenance and maintenance. More simply, when resources become noticeably scarce, K-strategists opt to conserve as much as possible.

Conversely, Fast Life or r-strategists produce an abundance of progeny and invest minimally in each, essentially leaving each individual to their own devices for survival and success (Long & Long, 1974). When environmental factors change for an r-strategist and resources become constrained, they take the opposite approach of a K-

strategist. Instead of slowing down to make their resources last, the r-strategist's approach is to burn through their "fair share" of resources and look to acquire more from others; in essence, they play by individualism and competition. When resources become noticeably scarce, r-strategists consume as much as possible as fast as possible.

R-strategists' response to their uncertain environment implies agency or awareness in the strategists' response. In reality, it is more accurate to say that this particular natural selection is directional, in that it shaped the traits responsible for making the optimal tradeoffs over time (Jonason, Cetrulo, & Ortiz, 2011; Mitchell-Olds, Willis, & Goldstein, 2007). And while humans like to think they are special or something similarly anthropocentric, they are still made from the same life building blocks and subject to the same basic life strategies of all biological organisms (Bertalanffy, 1993; Boddice, 2011; Jensen, 2016; Jonason & Dane, 2014).

Even though LHT was initially concerned with the timing of life events, researchers have found understanding phenomena not traditionally considered to be life history events may benefit from an explicit life history approach (Del Giudice, Gangestad, & Kaplan, 2016). While cost-benefit analysis is a core approach within evolutionary biology and behavioral ecology, CBA does not require LHT. Rather, LHT is a general analytical approach to understanding selection and is not necessarily defined by the phenomena being explained, thus LHT has increasingly overtaken cost-benefit analysis in many areas. Still, while LHT looks to explain how organisms use energy or resources for various tasks, it does not necessarily imply a cognizant decision-maker.

Even if it were theoretically possible while being entirely impractical, there is no such entity that precisely calculates these costs and benefits continually. Rather, allocation decisions require comprehension of a variety of intricate systems and the magnitude of impact from any reallocation effort.

Given that LHT offers insights into selection on almost any evolved outcome, it can also be applied to psychological adaptations (Buss, 1995). Generally speaking, evolutionary psychology seeks to identify these universal psychological adaptations (Tooby & Cosmides, 1992) as related to a domain-specific input. From this, while individuals should not have developed perfect solutions to adaptive problems, they should have evolved to optimally allocate resources under tradeoff constraints based on ancestral environments (Del Giudice, Gangestad, & Kaplan, 2016). From the marginal value theorem (Charnov, 1976), the only way to achieve a perfect solution to any particular problem is with a cost-free solution. Congruent with MVT and a nonexistent cost-free solution, the necessity of tradeoffs forces compromise in solving every life task.

The progression from reproductive behavior being shaped by natural selection of successful strategies under constrained environments requiring resource tradeoffs leading to individual differences in workplace problem-solving and decision-making may sound farfetched. However, this progression follows the logic of psychological adaptation within the framework of life histories. The strategies that have perpetuated are not necessarily exclusive or unique to reproduction itself, but rather the

manifestation of successful strategic implementation from contextualizing reproduction as a problem to be solved. These same strategies are then extrapolated to application of other problem-solving and decision-making domains where tradeoff is required. In the biological environment, one must implement a mating and reproductive strategy somewhere on the slow to fast life continuum. In the workplace, one must implement a decision-making strategy somewhere between top-down and bottom-up. While the environments and results of the implemented strategy may vary, the strategies themselves are derived from the respective cognitive decision-making process.

2.4 Sex Differences and Life History Strategies

Modern day humans are the iterated result of millions of years of a successfully implemented reproductive strategy. While differing species are predisposed to different strategies, individuals within species are also predisposed to differing strategies. Regarding the reproductive success of humans, and in congruence with the strategies outlined above, this manifests as more offspring or better offspring.

Physiologically, sex in humans is determined by chromosome combination (XX or XY), hormones (androgen or estrogen), and reproductive anatomy (Knox & Schacht, 2011). Psychologically, sex differences are the result of complex dynamics between an individual's physiology and the environment they are subject to, with the individual phenotype manifesting from the interaction between genotype and the given environment (Halpern, 2011). A myriad of factors, from brain structure and function to individual traits and cognitive abilities, influence the development of these individual differences (Becker, Geary, Geary, & Hampson, 2007).

Based on the result of reproductive success seen today, men should be more prone to casual sex, promiscuity, and general fast life strategies (Jonason, Valentine, Li, & Harbeson, 2011). Dictated by biology, the reproductive investment requirement for males is substantially lower than the reproductive requirement for females (Abman, 2011). This contrast in reproductive investment requirements leads females to being more selective in their mating choices and a general slow life strategy compared to males (Oliver & Hyde, 2001).

Because males require more resources than females to reach their full potential, men were forced to evolve as bigger risk-takers (Cross, Copping, & Campbell, 2011). In turn, the magnitude of sex differences in personality traits are largest in prosperous and healthy cultures, as more resources can be allocated to reaching this potential and procreating (Schmitt, Realo, Voracek, & Allik, 2008). Congruently, resource poor environments facilitate a slow life strategy of making resources last through a harsh duration, serving as a constraint to the development of sex differences. By comparison, the relative abundance of developed environmental cultures facilitates these innate sex differences.

Linked directly to limited empathy, Machiavellianism is more prevalent in males than females (Gunnthorsdottir, McCabe, & Smith, 2002). In addition to Machiavellianism, males are characterized as higher in narcissism than respective females (Grijalva et al., 2015). Thus, the presence of Dark Triad traits may be an adaptive male response to what is demanded from potential female mates or partners (Denney, Field, & Quadagno, 1984; Jonason, Luevano, & Adams, 2012) in order to achieve success., sexual or otherwise. If females prefer partners who are successful and the Dark Triad traits facilitate the ability of males to achieve success, it follows that females desire partners characterized by Dark Triad traits. As humans cannot entirely decouple their decision-making from their life histories, the decision-making strategies dictated by these traits and life histories most certainly apply to other areas of life decision-making, including the workplace.

2.5 Goal Framing, Social Exchange, and Life History Theory Integration

Life History Theory, a midlevel theory from grander evolutionary theory, serves as a framework to understand the different strategies implemented by different organisms for different tasks based on their life histories (Nettle & Frankenhuis, 2020). Contingent on the realities of finite resources, zero-sum games, and necessary tradeoffs (Ahlström, 2011) LHT provides evidence that life's interactions are a series of competitive games with winners and losers (Jonason, Duineveld, & Middleton, 2015). In a fully abundant and unconstrained environment, an organism that did not have to make tradeoffs between its ability to reproduce and its ability to survive would reproduce immediately, infinitely, and live indefinitely (Bolund, 2020, Wells et al., 2020). If the hypothetical scenario illustrated here reflected reality, the field of economics would never have come into existence. Be that as it is, economics is perhaps the most relevant field to understanding and optimizing tradeoffs on a larger scale (Cheverko, 2020). Defined as the processes by which scarce resources are allocated to satisfy unlimited wants, economics (specifically fundamental microeconomic theory) helps explain how rational actors that do have to make tradeoffs function in the real world where resources are not entirely abundant (Krugman & Wells, 2015).

From a biological standpoint, this means resources allocated to one (life) function cannot be allocated elsewhere. These resources are spent on different functions to provide the best possible chance for lineage succession, whether it be a direct reproductive event, extending ones' existence to reproduce in the future, or

readying past reproductions for their own success (Bolund, 2020; Thomas, 2005). The economic and business landscape's entity equivalent, The Firm, is designed to exist in perpetuity by using the resources at its disposal to create and capture value. From biological organisms to bureaucratic organizations, rational actors attempt to optimize (cognizant or not) the allocation of these resources to maximize their overall utility, whatever the method of keeping score (Kenrick et al., 2009; White & Walker, 1973). This motivation to exist in perpetuity is the same goal for all entities, but the strategies implemented by different organisms or organizations are the same for none. In fact, it is different goal frames and inherent approach-avoidance conflicts that allow for different strategies with contradictory outcomes to be simultaneously rational based on the individual's perspective at the given time (Nenkov & Inman, 2008). Extreme as it appears, an individual can choose opposing courses of action for identical situations and still act rationally in whichever course they choose; the difference in action and underlying rationality is dictated by the frame through which the situation was viewed and the goal which the individual acted on (Nenkov & Inman, 2008). Because individuals can host multiple perspectives and different goal frames simultaneously, they are, almost by definition, motivated and/or incentivized by competing forces simultaneously (Eagleman, 2012; Lindenberg & Steg, 2013).

By comparison to others, humans demonstrate slower life history strategies than many species (Galipaud and Kokko, 2019; Peters, 1986). Between humans, individual differences indicate that certain manifested behavior will organize around certain traits

that individuals have in common (Dobson, 2007; Stearns, 1992), forming archetypal and potentially predictable trait amalgamations (Ketelaar & Ellis, 2000) that correlate with the aforementioned behavior. While no two individuals will ever be trait combinatorically identical, people can and do have similarities in certain traits that lead to similar behavioral outputs. These archetypes, stemming from childhood environmental conditions coupled with genetic predisposition, lead to different strategies and adaptations to problem-solving (Einhorn & Hogarth, 1981).

Over the past decade, researchers have attempted to situate the individual components and the Dark Triad constellation as a whole within Life History Theory, generally correlating each component with other indicators of a fast life strategy (Jonason & Tost, 2010). Given that an individual's LHT strategy manifests as observable behavior, it follows that individual personality traits would be indicative of an individual's overall strategy (Jonason et al., 2010). Both psychopathy and Machiavellianism were predictors of a fast life strategy, as demonstrated by diminished self-control, empathy, and overall antisociality (Figueredo et al., 2006; Gladden, Figueredo, & Jacobs, 2009; Jonason & Tost, 2010). While the Dark Triad is generally conceptualized as an exploitative style reflective of a fast life strategy, it may be more accurate to state that different facets of each construct indicate different life history strategies (McDonald, Donnellan, & Navarrete, 2012).

Studies have demonstrated an overlap in self-reported behavior between individuals with fast life history strategies and high on the Dark Triad, specifically

concerning future discounting (Frederick & Loewenstein, 2002; Jonason et al., 2010). Consistent with this future discounting, these individuals often display a variety of additional characteristics indicative of a high preference for immediate gratification and a lack of future planning such as risk-taking, recreational substance use, and impulsive behavior (Gladden et al., 2009). In turn, it then follows that an individual's life history strategy manifests "not only in mating strategies (Buss & Schmitt, 1993) but also in personality traits (such as the Dark Triad)" (Jonason et al., 2010, p. 430). Given the correlation between sexual attitudes and behaviors, life history strategies, and presence of the Dark Triad traits, it may be safe to say "individuals who score high on these traits – especially psychopathy – live a fast life" (Jonason et al., 2010).

The workplace is far from perfect, as covert exploitation of the system can be an optimal response by social creatures in certain situations and contexts (DeShong, Grant, & Mullins-Sweatt, 2015). While evolution favors those who implement a more selfish strategy in some conditions (e.g., unpredictable) and not in others (e.g., stable), inclusion of seemingly altruistic, inclusive, and compassionate strategies can be evolutionary stable in others (Lerner & Miller, 1978; Van Vugt & Van Lange, 2007). Just the mere fact that consistent violation of fairness serves as a successful strategy in workplace interactions (Blau, 1964) is consistent with the evidence that Social Exchange Theory helps conceptualize the impact of Dark Triad traits on workplace behavior. Based on relationships initiated and sustained through ongoing transactions, Social Exchange Theory suggests employees work for direct and tangible rewards such as financial

compensation and material goods, and intangibles such as power, status, and other socioemotional rewards (Settoon, Bennett, & Liden, 1996). Once initiated, these exchanges are strengthened and stabilized by a substantial creation of value to the parties, credibility and trustworthiness of each party, the perceived fairness of benefit distribution to each party, and an acceptance of reciprocity indicated by commitment to the ongoing relationship (Cropanzano & Mitchell, 2005). Even though less likely to adhere to social norms, Social Exchange Theory coupled with the Dark Leadership (Furtner, Maran, & Rauthmann, 2017) provides a foundational explanation as to why individuals high in Dark Triad traits may thrive as workplace leaders.

While not universally disagreeable or difficult, the general lack of emotional investment in others coupled with a proclivity towards immediate gratification and an ability to ignore accountability and reciprocity, individuals high in Dark Triad traits frequently undermine the stability of these otherwise ongoing and mutually beneficial interpersonal relationships (Aghababaei, Mohammadtabar, & Saffarinia, 2014). Though the manifested behavior is often the same, the Dark Triad are distinct constructs with different motivations dependent upon the particular trait associated with said manifested behavior. For individuals high in Machiavellianism, trust issues and the belief that others will take advantage of their extra output without reciprocating keeps them from expending any effort above and beyond that which is explicitly required (Gunnthorsdottir et al., 2002). Individuals high in narcissism would consider reciprocity unnecessary, as they believe they are above their colleagues, and the social contract

does not apply to them (Campbell, Hoffman, Campbell, & Marchisio, 2011). Psychopaths' general lack of empathy and solipsism incentivize not just self-interested but selfish behavior that, while perhaps beneficial to them as an individual, inevitably generates a net loss for the collective (LeBreton, Binning, & Adorno, 2006).

3 Research Design and Methodology

3.1 Demographic Measures

This research was based on two studies designed to assess differences in problem-solving and decision-making strategies between individuals in workplace representative tasks. Participants in Study 1 completed their given task, Number Place or Sudoku, entirely online. Participants in Study 2 completed their given task, a 54-piece LEGO model, entirely within the laboratory setting.

From all participants, certain demographic data was gathered. Participants were a sample of volunteers 18 years or older and asked their age and sex. Students were the exclusive sample, and they were asked their current occupation, years of service as, and whether they worked full or part-time. In addition to the aforementioned measures, they were asked about marital status and ethnicity.

Additionally, they reported three success metric demographic variables: annual income, total net worth, and highest level of education achieved. Most participants were expected to complete the demographic measures of the survey within about 5 minutes. A sample of this demographic questionnaire can be found in Appendix A.

3.2 Personality Measures

The Dark Triad traits were measured using the 27-item Short Dark Triad (SD3) scale (Jones & Paulhus, 2014). Participants were asked to what extent they agreed (1 = *Disagree strongly*; 5 = *Agree strongly*) with different statements. The items on each scale were averaged to create individual scores for each of the Dark Triad traits. Choice of the SD3 scale followed the exploration of different available measures and balancing the scale's psychometric properties with the measure's length. Based on the empirical literature (Lee et al., 2013) and desire to avoid extremes in any direction, this research uses the SD3 as opposed to the Dark Triad Dirty Dozen.

To capture constructs around each participant's overall wellbeing, personality measures included the 5-item "Satisfaction With Life Scale" (Diener et al., 1985). To capture constructs regarding impulsivity, the survey included 19 impulsivity items (Gerbing et al., 1987). Because items are extracted from different scales, minor modifications were made to some items to achieve consistency in presentation, primarily writing all items as statements instead of questions and presenting all items in the first-person.

Finally, even though the scope of the research was expanded from specific interest in Corner Cutting to general problem-solving and decision-making strategies, self-reported Shortcutting behavior remained of interest. To capture this, the survey included the 8-item short-cuts at work scale from Jonason and O'Connor (2017).

3.3 Experimental Environments and Conditions

Each study consisted of a simulated work environment (online and in-person) and workplace representative task for participants to complete (Number Place and model building). In study 1, participants simulated working from home or other offsite locations, which has become more common due to the COVID-19 pandemic. They could complete the required task from a location of their choosing, as long as it has Internet access, essentially telecommuting. In study 2, participants simulated physically commuting to work by having them travel to PSU's on-site laboratory location. The goal was to simulate workplace representative tasks with known and agreed upon rules and instructions, create an artificial conflict of interest in the form of a time constraint, and assess the results of different problem-solving and decision-making strategies in terms of predictors, correlates, and interaction effects among participants. Each of the two simulated workplace tasks followed a 2x2 factor design with two genders (men and women) and two difficulty conditions (easy and hard). Participants reported their gender identity and the difficulty condition was assigned randomly.

3.4 Post-Experiment Questions

Upon completion of demographic information, the 59 personality items, and the given experimental task, participants were prompted to answer two final 1-item checks. To determine whether the participant perceived a time constraint, participants were asked “Did you feel as though you were short on time or rushed to complete your task?” with binary “yes” and “no” response choices. To determine whether the participant implemented any workaround of any kind, perhaps beyond the scope of accountability and formal analysis, participants were asked “Did you use or implement any form of shortcut, workaround, or other non-instructed process to complete the given task?” with binary “yes” and “no” response choices.

3.5 Research Questions

To at least some degree, the workplace eternally incentivizes the search for additional efficiency, that is, shortcuts. Competing outcomes, inherent conflicts of interest, and contextual factors are realities of collaborative organizations. This collaborative yet bureaucratic procedure around developing workplace processes often requires adherence to a lowest common denominator principle (Gouka, 2013), such that a low skilled employee can successfully complete the necessary steps. The resulting process, designed to mitigate organizational risk and exposure, has the unintended consequences of inefficiency and incentive to find shortcuts and workarounds (Ash et al., 2003). While research to date has found shortcutting prescribed workflow processes is associated with negative workplace consequences, the idea of workarounds and process circumvention are not fundamentally negative (Beck et al., 2016) and can occasionally increase overall efficiency. Regardless of association with low job performance (Sackett, 2002) and work-related injuries (Halbesleben, 2010), shortcuts can be an adaptive and beneficial strategy in circumventing an inefficient bureaucratic process.

Chapter 2 reviewed a substantial body of literature on decision-making, problem-solving, workplace behavior, and personality social psychology. While much focus has been on understanding the situational factors, to what extent individual differences contribute to workplace decision-making strategies? Returning to the simplified working parent example described in Chapter 1, different individuals likely

respond differently to the same situation depending on their personality profile. In turn, this led to the following Research Questions about workplace decision-making and problem-solving:

RQ1: Is there a difference in task completion rates and quality between men and women?

RQ2: Is there a difference in task completion rates and quality between individuals high in the Dark Triad traits and individuals low in the Dark Triad traits?

-If there is a difference, how are the Dark Triad traits are specifically associated with task completion rates and quality?

-If there is not a difference, what are the interaction effects?

RQ3: What is the extent of, and explanation for, the relation of impulsivity to the Dark Triad traits and task completion rates and quality?

RQ4: Are there any variables that interact with the relationship between task completion rates and quality and the Dark Triad traits?

3.6 Alternative Hypotheses in Testable Form

From these research questions and congruent with the central task of modern science in testing theories, four alternative hypotheses derived from null form (Everett, 1998; Helmenstine, 2019) emerged:

- H1a: Men complete more tasks than women but make more mistakes than their respective counterparts.
- H1b: The Dark Triad traits, specifically Machiavellianism and psychopathy, mediate the relationship between gender and task quality.
- H2: Individuals high in the Dark Triad traits complete more tasks but make more mistakes than those low in the Dark Triad traits.
- H3: Impulsivity mediate the relationship between The Dark Triad traits and task quality and Time Remaining.
- H4a: Satisfaction with Life (SWLS) mediate the relationship between The Dark Triad traits and task quality.
- H4b: Self-reported Shortcutting behavior (SAWS) mediate the relationship between The Dark Triad traits and task quality.

4 Analysis and Results of Study 1

4.1.1 Online Number Place Puzzle Task

The first study implemented two difficulty levels of the Number Place Sudoku task. Before being prompted to complete the task from their personal Internet-connected device, participants read the following: "*Instructions: Your boss has instructed you to complete the following puzzles correctly, quickly, and entirely. He has been known to completely withhold pay from employees who do not complete their assigned tasks. Additionally, he has been known to partially withhold pay from employees who make mistakes*". The original intention was to add emphasis to task completion by using a weighted Error average of Incorrect and Omitted responses. However, this was determined remove information and take away from the ability to analyze the data and the decision was made to analyze the response variables individually.

As designed, the experiment is bound by two potentially extreme outcomes: entirely Incorrect responses on a completely finished and submitted task, or entirely Omitted responses on an entirely incomplete non-submission. Either of these extremes would require total disregard for the instructions and outlier checks were performed for Incorrect responses above 70 and Omissions above 80, and any participants exceeding either of these extremes were removed from analysis. It was expected that the entirety of the data set would fall somewhere in the middle with a unique combination of Incorrects, Omissions, and Time Remaining. With the instructions provided, the

condition was designed to incentivize completion of the task at all costs -- including Quality. Still, the participants were not explicitly told to sacrifice Quality, only incentivized per the instructions to create a deliberate and immediate approach-avoidance conflict. After gathering responses to the demographic data, the Short Dark Triad scale, and related personality measures, participants began this randomly assigned "Easy" or "Hard" Number Place (colloquially referred to as Sudoku) task.

Attempting to control for prior knowledge with Number Place, the participant viewed a short publicly available instructional video that explained the rules and provided an example puzzle to acquaint participants with the task. The Easy puzzle started with 40 cells (49.3%) completed prior to participant work and Hard puzzle started with 30 cells (37.0%) completed prior to participant work. A minimum of 17 cells (21.0%) completed prior to participant work is necessary to create a single solution grid. The exact puzzles used in the study are included in Appendix F.

Participants were then given precisely 12 minutes to complete the assigned puzzle. Before starting the given puzzle, they were instructed not to use any tools other than paper, a writing instrument, and the information given on the experiment puzzle page. From the experiment, the number of Omissions (empty squares), Incorrects (incorrect entries), time to complete (and Time Remaining), puzzle difficulty, and answers to the post-experiment questions.

4.2.1 Online Number Place Participant and Procedure Analysis

For Study 1, participants (N = 214; 64% women) were undergraduate students, aged 18 – 60 years old (M = 25.53, SD = 7.381), currently enrolled in School of Business courses participating in the SONA Systems extra credit research participant program. As eligibility was already limited and restricted, no further criteria for participation other than the aforementioned was required. Participants completed an online, anonymous, and self-directed survey after providing informed consent. All participants were solicited through SONA Systems participant management software at PSU in coordination with the SONA director and all subjects participated in exchange for a fixed amount of extra course credit. They provided demographic responses, completed a series of personality questionnaires, watched a short video on the rules of Sudoku, completed their randomly assigned task, and were asked two manipulation check questions before being thanked and redirected back to the SONA Systems homepage.

4.3.1 Online Number Place Measures

Participants reported their agreement (1 = *disagree strongly*; 5 = *agree strongly*) with statements on the Short Dark Triad scales such as "It's not wise to tell your secrets" (i.e. Machiavellianism) and "People see me as a natural leader" (i.e. narcissism). Items were averaged to create an overall score of Machiavellianism, narcissism, and psychopathy.

Impulsivity, Satisfaction with Life, and Shortcuts at Work were measured using three scales of 19, 5, and 8 items, respectively. Participants were asked to what extent (1 = *disagree strongly*; 5 = *agree strongly*) they agreed with statements such as "I generally do and say things without stopping to think", "I am satisfied with my life" and "I am more concerned with getting something done than getting it right at work." Items were averaged to create overall scores for Impulsivity, Satisfaction with Life, and self-reported Shortcutting at work behavior.

Table 1. Study 1 Descriptive Statistics

Descriptive Statistics and Gender Differences for Education, Salary, Net Worth, and personality variables (SUDOKU)						
	M(SD)			t	p	d
	Overall	Males	Females			
Education	3.056	3.101	3.029	0.607	0.544	0.086
Salary	1.398	1.468	1.358	0.986	0.325	0.139
Net Worth	2.055	2.063	1.971	0.725	0.469	0.102
Machiavellianism	2.976	**3.137**	2.883	2.682	**0.008**	0.396
Narcissism	2.851	2.932	2.805	1.654	0.100	0.233
Psychopathy	2.136	**2.352**	2.011	3.844	**0.001**	0.543
Impulsivity	3.205	3.226	3.169	0.921	0.358	0.130
Satisfaction with Life	3.219	3.242	3.177	0.566	0.572	0.079
Shortcuts at Work	2.505	**2.717**	2.383	3.246	**0.001**	0.459

4.4.1 Online Number Place Results

Men scored significantly higher ($p < 0.05$) than women on Machiavellianism, Psychopathy, and Shortcuts at Work (bolded cells in Table 1 above). A Difficulty x Gender between-groups unbalanced ANOVA revealed no Gender differences for Incorrect (Figure 1) or Omitted (Figure 2) responses ($p > 0.05$) but found differences in Time Remaining ($p < 0.05$). Further, the difference in Time Remaining (Figure 3) is moderated by the Difficulty condition ($p < 0.001$). Specifically, men ($M = 244.781$, $SD = 219.362$) had more Time Remaining on the respectively difficult task than women ($M = 133.838$, $SD = 186.126$) but less time remaining ($M = 160.212$, $SD = 191.380$) on the respectively easier task than women ($M = 238.115$, $SD = 204.863$).

Figure 1: Main Effect Graphic for Incorrect by Gender and Difficulty

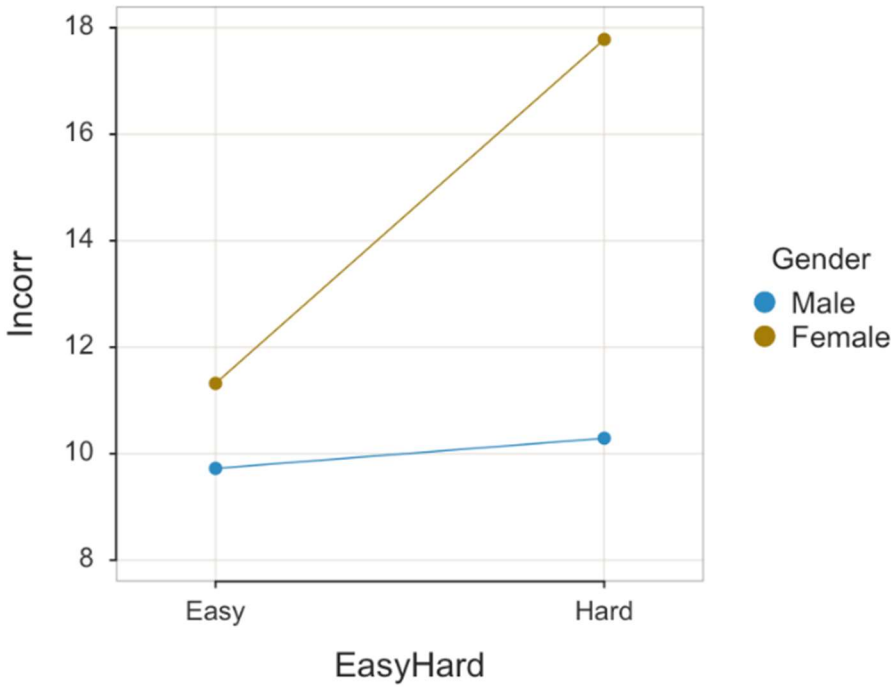


Figure 2: Main Effect Graphic for Omission by Gender and Difficulty

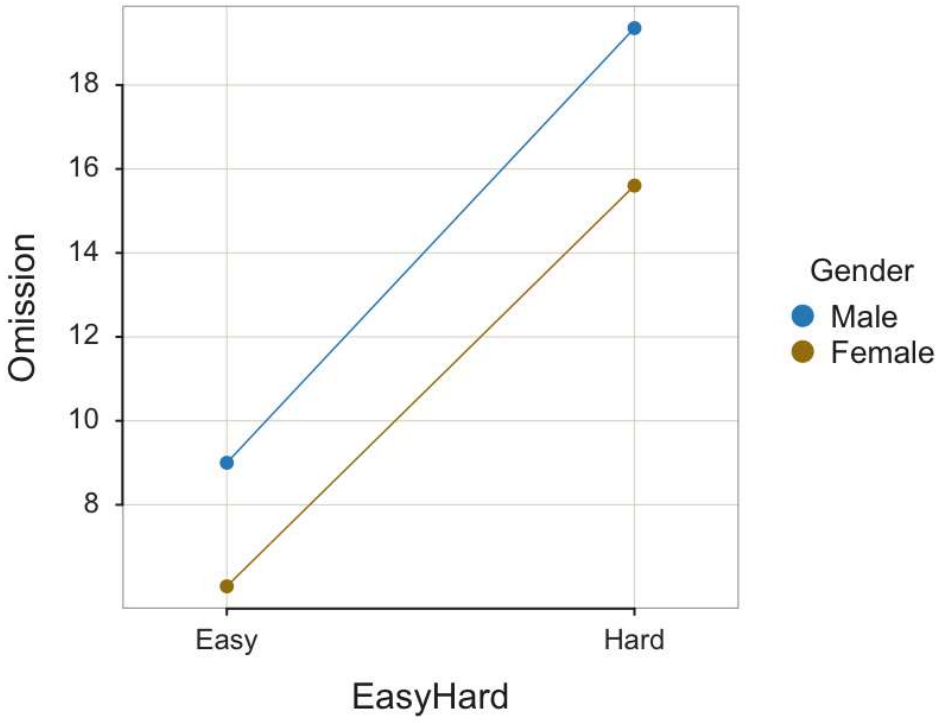
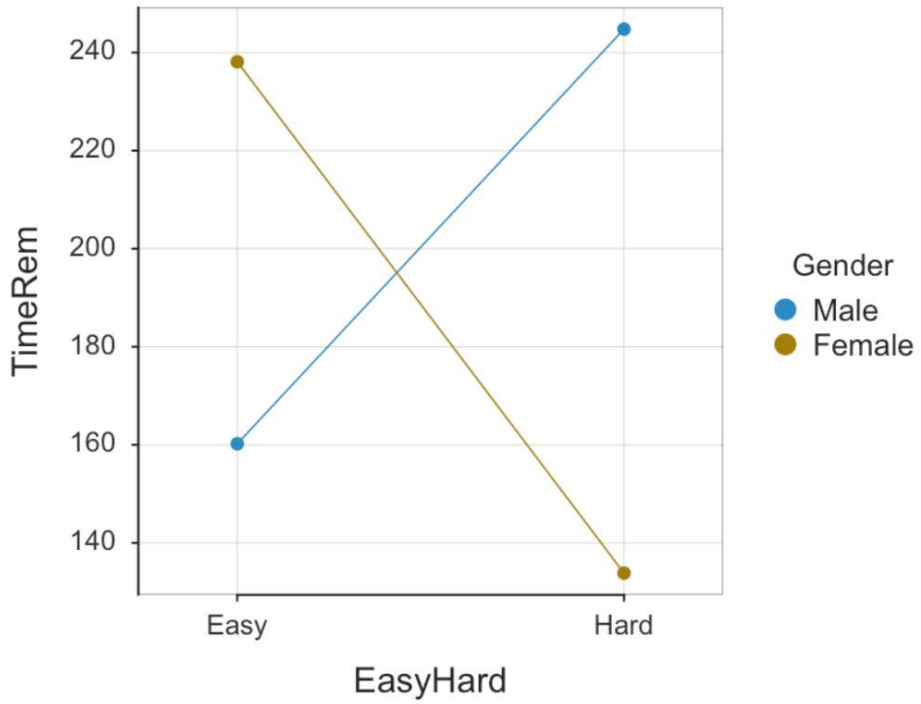


Figure 3: Main and Interaction Effect Graphic for Time Remaining by Gender and Difficulty



Multiple regression analysis with all three Dark Triad traits and Impulsivity regressed on the response variables found no significant predictors for any of the response variables Incorrect, Omission, or Time Remaining ($p > 0.05$). Impulsivity was a trending predictor for both Incorrect and Omissions but not significant ($p < 0.11$). Mediation analysis was performed using bootstrapped samples and confidence intervals to obtain indirect effects. Using simple mediation to tests for these indirect effects in the prespecified Gender and Difficulty conditions at the 95% confidence level, Impulsivity mediated the impact of all three Dark Triad traits Machiavellianism (indirect effect = 1.368, $p < 0.05$, 95% CI [0.192, 3.134]), narcissism (indirect effect = 1.141, $p < 0.05$, 95% CI [0.034, 3.134]), and psychopathy (indirect effect = 0.750, $p < 0.05$, 95% CI [0.091, 2.053] on Incorrect responses. Impulsivity did not mediate the relationship between the Dark Triad and Omission mistakes or Time Remaining. Additionally, SWLS mediated the impact of narcissism on the amount of participant Time Remaining (indirect effect = 13.996, $p < 0.05$, [CI = 1.942, 35.082].

The a priori scales evidenced good reliabilities in terms of Coefficient Alpha: Mach ($\alpha = 0.782$), Narc ($\alpha = 0.669$), Psych ($\alpha = 0.787$), Impl ($\alpha = 0.725$), SWLS ($\alpha = 0.858$), and SAWS ($\alpha = 0.877$). Congruent with the exploratory nature of these studies, the factor structure of the individual self-report items was uncovered and the amalgamation of personality measures initially defined by the a priori scales revised.

Though the a priori scales were validated in prior literature, Exploratory Factor Analysis followed by Confirmatory Factor Analysis (Gerbing & Hamilton, 1996) was used

to refine and improve the measurement model given this particular set of items and their interrelationships. Following the rotated initially extracted factors, a scale was defined for each factor based on the factor loadings of the items to the factors. The model was further refined with maximum likelihood Confirmatory Factor Analysis based on the removal of high modification index items generated 11 unique First Order Factor scales:

Table 2. Items Comprising First-Order Factors

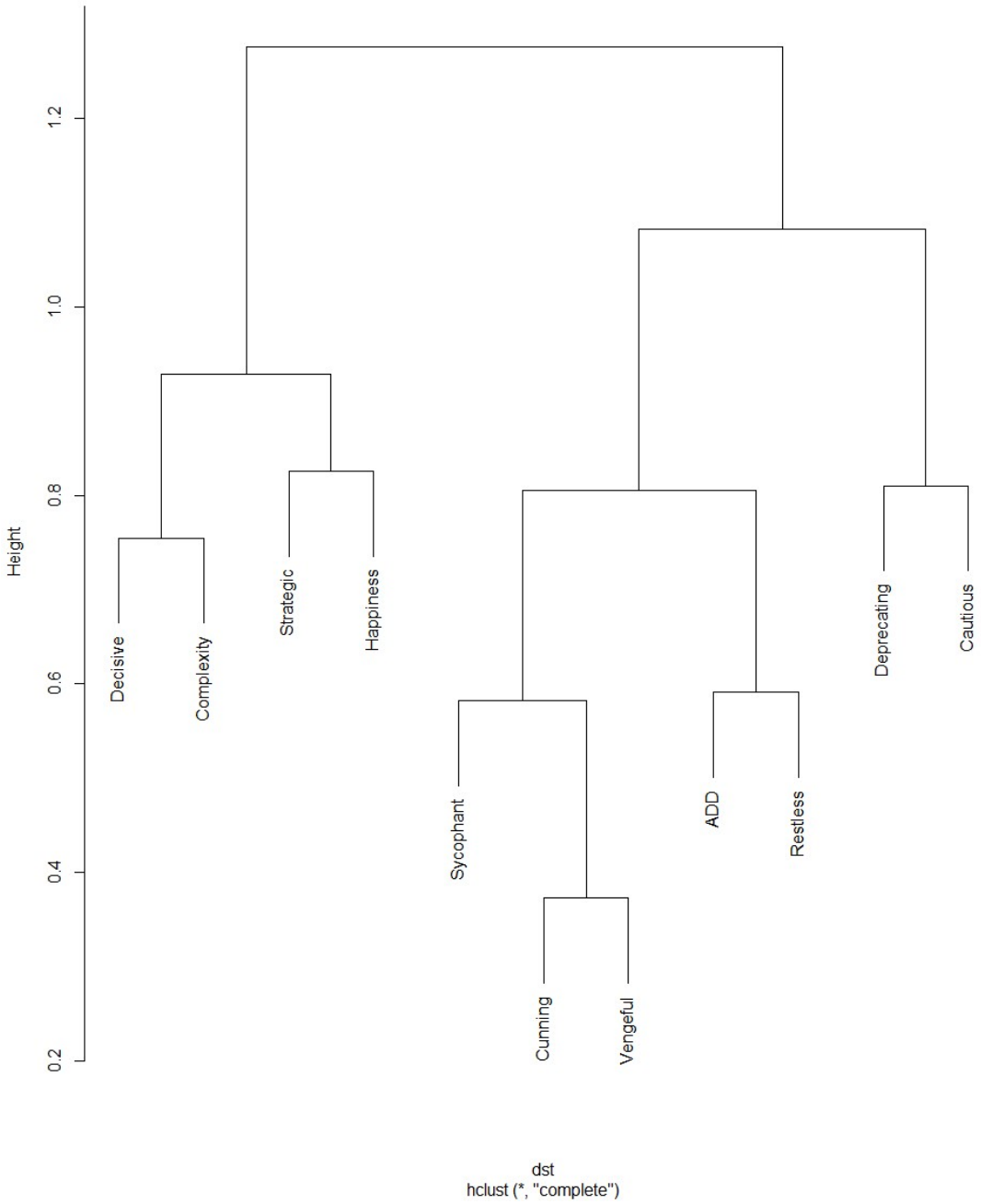
F-O Factors	Comprising Items					α
Cunning	M03	M04	M05	M06	M07	0.726
Sycophant	N03	N04	N05	N07	N09	0.667
Deprecating	N02	N08				0.361
Vengeful	P01	P03	P06	P09		0.778
Cautious	P02	P07				0.582
ADD	I04	I05				0.773
Restless	I07	I08	I09			0.913
Strategic	I13	I14	I16			0.890
Decisive	I10	I11	I12			0.850
Complexity	I17	I18	I19			0.932
Happiness	L01	L02	L04			0.812

Reliability and consistency of the previous Shortcuts at Work Scale was confirmed and it remained unchanged. CFA Goodness of fit was evaluated and confirmed using the Tucker-Lewis (0.094) and Comparative Fit (0.915) Indices, as these should be values greater than 0.9 (Anderson & Gerbing, 1988; Hair, Anderson, Tatham, & Black, 1995; Parasuraman, 2000).

Table 3. Second-Order Construct Correlation Matrix

S-O Matrix	Cunning	Sycophant	Deprecating	Vengeful	Cautious	ADD	Restless	Strategic	Decisive	Complexity	Happiness
Cunning	1.000	0.420	0.070	0.630	0.000	0.290	0.290	0.050	0.220	-0.010	0.080
Sycophant	0.420	1.000	0.140	0.510	-0.020	0.190	0.270	0.040	0.260	0.190	0.250
Deprecating	0.070	0.140	1.000	0.090	0.190	-0.080	-0.060	-0.160	0.060	0.150	0.070
Vengeful	0.630	0.510	0.090	1.000	0.110	0.260	0.270	-0.050	0.280	0.010	0.040
Cautious	0.000	-0.020	0.190	0.110	1.000	-0.010	-0.020	-0.280	-0.030	-0.010	-0.160
ADD	0.290	0.190	-0.080	0.260	-0.010	1.000	0.410	-0.140	0.190	-0.060	-0.120
Restless	0.290	0.270	-0.060	0.270	-0.020	0.410	1.000	0.030	0.190	-0.100	0.170
Strategic	0.050	0.040	-0.160	-0.050	-0.280	-0.140	0.030	1.000	0.090	0.070	0.170
Decisive	0.220	0.260	0.060	0.280	-0.030	0.190	0.190	0.090	1.000	0.250	0.130
Complexity	-0.010	0.190	0.150	0.010	-0.010	-0.060	-0.100	0.070	0.250	1.000	0.090
Happiness	0.080	0.250	0.070	0.040	-0.160	-0.120	0.170	0.170	0.130	0.090	1.000

Figure 4: Second-Order Construct Dendrogram



Amalgamation into Second-Order constructs followed from the First-Order factor correlation matrix using hierarchical clustering, resulting in the dendrogram (Figure 4), and confirmation of similarities between specifically Dark Triad scale items. Noting that not all First-Order factors will necessarily define second-order constructs, four constructs emerged: the DarkNucleus (α = 0.846), Urgency (α = 0.834), Premeditation (α = 0.811), and Timid (α = 0.481) with the breakdown of each described in the table below.

Table 4. Emerged Second-Order Constructs and Underlying Factors

S-O Construct	**DarkNucleus**	**Urgency**	**Premeditation**	**Timid**
F-O Factors	Sycophant	ADD	Decisive	Deprecating
	Cunning	Restless	Complexity	Cautious
	Vengeful			

Table 5. Regression Analysis of Incorrect responses on Second-Order Personality Constructs within the context of the experimental design

	Estimate	Std Err	t-value	p-value	Lower 95%	Upper 95%
(Intercept)	6.054	6.689	0.905	0.367	-7.135	19.242
DarkNucleus	1.198	0.585	2.047	**0.042**	0.044	2.353
Urgency	0.120	0.602	0.199	0.842	-1.067	1.307
Premeditation	0.197	0.676	0.292	0.771	-1.135	1.529
Timid	-1.221	0.709	-1.721	0.087	-2.618	0.177
EHGEM	-1.438	2.719	-0.529	0.598	-6.799	3.924
EHGHF	6.420	2.380	2.698	0.008	1.729	11.112
EHGHM	-0.405	3.115	-0.130	0.897	-6.546	5.736

From these Second-Order Constructs, multiple regression was run on all of the response variables with personality second-order constructs and conditions of the experimental design set as three dummy variables to represent the four experimental conditions (Table 5). Inclusion of the experimental condition was to remove the variability resultant

from conditions of the experimental design. In terms of model fit, R-squared was low, (0.093) with an Adjusted R-squared (0.062). However, the model is significant ($p < 0.01$).

The DarkNucleus ($b_1 = 1.198$, $p < 0.05$) is a significant predictor of Incorrect responses. In this sample, on a 1 to 5 point Likert scale, for each marginal unit increase in DarkNucleus, Incorr on average increase by a substantial 1.198 units of correctness. Generalizing to the population, at the 95% confidence level – holding the values of the other predictors constant – the true amount of increase in Incorrect for each unit increase in DarkNucleus is between 0.044 and 2.353.

Other relationships were trending but not significant. Timid, a construct also comprised of specifically Dark Triad scale items, was noticeably close as a predictor of both Incorrect ($b_1 = -1.221$, $p = 0.087$, CI = [-2.618, 0.177]) and Omitted ($b_1 = 1.199$, $p = 0.078$, CI = [-0.137, 2.536]) responses.

A complementary analysis of personality in terms of the response variables and experimental conditions follows from a median split of the personality variable. Unlike the regression analysis, which retains the continuity of the variables, a median split creates a dichotomy by splitting the values at the median. A Difficulty x Gender x High / Low DT level 3-way ANOVA using the median split technique for High and Low DT levels revealed no Dark Triad trait differences for any of the response variables Incorrect, Omission, or Time Remaining ($p > 0.05$). Additionally, there were no interaction effects for any of the response variables when the a priori Dark Triad scales were introduced individually into the design. As it was shown to be a significant predictor of Incorrect

responses, a Difficulty x Gender x High / Low DarkNucleus ANOVA was run. Even though the DarkNucleus evidenced significant predictive capability in Incorrect responses in the regression analysis, there were no interaction effects between any of the response variables ($p > 0.05$).

4.5.1 Online Number Place Discussion

From the original research questions and hypotheses, the overarching assumption was that different people implement different problem-solving and decision-making strategies when faced with identical situations, and that this difference in strategy could be extrapolated to the workplace and simulated in the laboratory workplace environment. Additionally, it was concluded that personality played a role in those strategies and that individuals high in the Dark Triad traits or who have a proclivity for fast life strategies would respond differently when relative resource restriction became a factor in task completion.

While there was no difference in Incorrect or Omission mistakes between men and women, there were differences in Time Remaining. One group having additional Time Remaining beyond another group would presumably be the result of sacrificing overall Quality. Instead, in the Hard Difficulty condition, men had significantly more Time Remaining than women. However, the Difficulty condition moderated the relationship between Gender and Time Remaining (Figure 3), as the women had significantly more Time Remaining than men on the respectively Easy task.

If there were no gender differences, men with the respectively difficult task should have made more mistakes and had less time remaining than their respectively easy counterparts. Instead, men with the respectively hard task had the most Time Remaining overall and made fewer Incorrect mistakes than women, regardless of difficulty. In terms of the experimental design – that is, without consideration of

personality factors – this is the most interesting finding from this study, and is clear evidence for Gender differences in problem-solving and decision-making strategies on workplace representative tasks based on the task difficulty.

Two distinct scenarios may describe why Difficulty moderated the relationship between Gender and Time Remaining. It is possible that this is indicative of a necessary workload for men to achieve an efficient workflow state. It could also be that the Difficulty condition induced a different problem-solving approach altogether from whether to focus on Quality or Time Remaining and instead circumvent the prescribed instructions, essentially taking a Shortcut. Perhaps participants feel more comfortable deviating from the instructions when not being directly supervised.

Upon bringing personality into the design, Impulsivity was found to be trending ($p < 0.10$) as a predictor for both Incorrect and Omission mistakes, though ultimately not significant at the 0.05 level. Impulsivity was further confirmed to independently mediate all of the Dark Triad traits impact on the aforementioned Incorrect mistakes, indicating that impulsive participants made more mistakes overall and that participants higher in Dark Triad traits made incrementally more Incorrect mistakes because of their generally impulsive nature.

Further, the SWLS wellbeing measure and Dark Traits moderated narcissism's impact on Time Remaining. While one should not assume malice over cognitive miserly behavior, it is logical that participants respectively high in narcissism would care less about the long-term and system-wide impact of their time savings behavior because

they, personally and entirely, get to enjoy the result of said time saving, regardless of potentially additional but externalized costs. Perhaps those relatively satisfied with their overall wellbeing are even more efficient and save additional time.

The uncovering of the DarkNucleus structure and further significance as a predictor of Incorrect responses is a critical finding. Congruent with recent literature on the Dark Core and D-Factor of personality (Moshagen, Hilbig, & Zettler, 2018; Moshagen & Hilbig, 2020), this finding confirms the existence of a more expansive Dark Construct that explains additional variance beyond the individual a prior scales but still a construct of exclusively Dark Triad traits. While not all Dark Core and D-Factor items directly tap Dark Triad traits, the DarkNucleus is specifically comprised of DT traits as measured from SD3 items.

Further, where much social science research relies entirely on self-report measures, this research included operationalized and recorded outcomes of observed experiments. Identifying a significant predictor of a directly observed phenomenon on an experimental task was a primary goal of this research. In turn, concluding that a specific trait constellation, the DarkNucleus, can predict the number of Incorrect mistakes on the simulated workplace representative task is a step in relating personality to directly observed task outcomes. Extrapolating from this result, what is the best way to relate a correctly chosen personality composite to an observed experimental outcome? The results of this study were able to identify a personality construct that predicted a specific behavioral outcome.

Results from Study 2 evidenced some interesting cross-study comparisons. 70.01% and 78.75% of participants in the studies (n = 150 for Study 1; n = 63 for Study 2) reported feeling rushed, but only 22.5% of participants -- in each study -- reported implementing a shortcut of any kind (n = 48 for Study 1; n = 17 for Study 2). However, almost 1 in 3 (n = 69; 32.24%) participants in the online experiment finished the puzzle whereas less than 1 in 7 (n = 11; 13.75%) of participants in the in-person experiment finished the model. Additionally, overall participants in the online experiment had an average of just over 26.25% (189.056 of 720 seconds) of their allotted time remaining where the in-person experiment had a mere 1.94% (7.513 of 386 seconds) remaining. It appears that the second task was just too difficult for most participants to complete and that experimental conditions made little to no difference.

Experimental location and ease of deviation from the tasks prescribed instructions – in short, cheating – may be more likely than originally thought or self-reported. Given that the experimental locations were different, it would be remiss to attribute potential cheating to location specifically, but the mere presence and awareness of authority figure oversight seems to have mitigated actual deviation from the instructions. If the respectively Hard version of the Number Place was actually more difficult than doable in the given time (as was the case with the model building experiment) but that men were willing to take shortcuts – without later reporting it – when those shortcuts were easily available and they were not being directly monitored,

it would explain how the men in the hardest condition managed to perform so well overall and have so much Time Remaining.

Construction of the original design from initial theoretical considerations led to the expectation that a high Omission count correlate, or be indicative of a slow life strategy, and a high Incorrect count would correlate or be indicative of a fast life strategy. However, speculation of results from the Online Number Place Task indicates it may be more logical that either a high Omission or Incorrect count with relatively little Time Remaining indicates a slow life strategy or adherence to the prescribed process and following instructions while a low Omission and/or Incorrect count with relatively more Time Remaining indicates a fast life strategy or disregard for the prescribed process and instructions.

5 Analysis and Results of (Quarantined) Study 2

5.1.2 Study 2: In-person Model Assembly Task

The second study complemented the first study with an observable and objective model-building task in a physical laboratory setting. After arriving at the on-campus laboratory, participants were given space at a table, a PSU SBA owned Amazon Fire tablet with a direct link to the Demographic and Personality items, and the necessary model building pieces with manufacturer instructions. After completing the Demographic and Personality items, participants read a page of the following: "*Instructions: Your boss has instructed you to complete the following model correctly, quickly, and entirely. He has been known to completely withhold pay from employees who do not complete their model building tasks. Additionally, he has been known to partially withhold pay from employees who make mistakes building their models.*" Participants were then prompted to begin building with an audible recording of "Your time begins now" played from the tablet.

Half of the participants were given the Easy or Quiet condition of the task, half of the participants were given the Hard or Distracted condition of the task. A search of LEGO forums estimated build times at between 6.6 and 11.5 pieces assembled per minute, meaning this particular model should have taken between 4.69 and 8.18 minutes on average to complete. As such, each participant was allowed 6.43 minutes (6 minutes and 26 seconds), the average of the LEGO forum estimated build time range for this specific model, to complete the 54-piece "Lego Star Wars First Order Heavy Assault

Walker", number 30497. After the 6 minutes and 26 seconds concluded, the participant was stopped by the researcher and results were recorded. Pictures of the packaged, deconstructed, and correctly completed model are included in Appendix G.

Because the task was prefabricated by the manufacturer, it was not subject to change by the research team. Instead, the environmental condition was manipulated such that an Easy or Quiet condition had a quiet environment with time passing silently and a Hard or Distracted condition that had a loud, constant ticking noise emitting from their Fire tablet, reminding the participant of the looming deadline. Those in the Hard or distracted sample should have less Time Remaining and make more mistakes than their respective counterparts. While bound by the same theoretical extreme outcomes and (via the instructions) incentivized to complete the task at all costs, the in-person aspect of the experimental design makes it even less likely that participants would approach the task with reckless abandon. As the building instructions are also given by the manufacturer and the manipulation was embedded in the environment as opposed to the task, there was no functional way to control or check for prior knowledge or experience. Given the intentional simplicity of the chosen model itself, minimal impact was expected.

5.2.2 In-person Model Assembly Participant and Procedure Analysis

For study 2, participants (N = 80; 63% women) were undergraduate students, aged 18 – 54 years old (M = 26.00, SD = 7.790), recruited and qualified using the same participant recruitment method as study 1. Participants traveled to PSU's onsite laboratory where they used a PSU SBA issued tablet to complete the same online, anonymous, and self-directed survey after providing informed consent. They provided the same demographic responses, completed the same personality questionnaires, completed their randomly assigned task, and were asked the same two manipulation check questions before being thanked and redirected to the tablet's homepage.

5.3.2 In-person Model Assembly Measures

All personality and self-report inventories were measured in an identical capacity as study 1, other than being provided in an official laboratory on a PSU issued tablet as opposed to the device of their choosing. The Dark Triad was measured using the SD3 scale and participants reported their agreement (1 = *disagree strongly*; 5 = *agree strongly*) with statements such as "It's not wise to tell your secrets" (i.e. Machiavellianism) and "People see me as a natural leader" (i.e. narcissism). Items were averaged to create an overall score of Machiavellianism, narcissism, and psychopathy.

Impulsivity, Satisfaction with Life, and Shortcuts at Work were again measured using three scales of 19, 5, and 8 items, respectively. Participants were asked to what extent (1 = *disagree strongly*; 5 = *agree strongly*) they agreed with statements such as "I generally do and say things without stopping to think", "I am satisfied with my life" and "I am more concerned with getting something done than getting it right at work." Items were averaged to create overall scores for Impulsivity, Satisfaction with Life, and self-reported Shortcutting at work behavior.

Table 6. Study 2 Descriptive Statistics

Descriptive Statistics and Gender Differences for Education, Salary, Net Worth, and personality variables (LEGO)						
	M(SD)			t	p	d
	Overall	Males	Females			
Education	3.062	3.034	3.078	0.262	0.794	0.061
Salary	1.300	1.379	1.255	0.742	0.460	0.168
Net Worth	1.925	1.931	1.922	0.500	0.960	0.012
Machiavellianism	2.980	3.184	2.865	2.296	0.024	0.534
Narcissism	2.950	3.103	3.054	0.603	0.548	0.140
Psychopathy	2.168	2.610	2.366	2.087	0.040	0.485
Impulsivity	3.244	3.248	3.238	0.109	0.913	0.025
Satisfaction with Life	3.263	3.131	3.337	1.242	0.218	0.289
Shortcuts at Work	2.597	2.974	2.382	3.473	0.001	0.808

5.4.2 In-person Model Assembly Results

Men scored higher on all personality trait scores than women did other than overall wellbeing via Satisfaction with Life (above). A Difficulty x Gender between-groups unbalanced ANOVA revealed no Gender differences for Incorrect responses ($p > 0.05$) but detected differences in Omissions ($p < 0.05$) and Time Remaining ($p < 0.05$), suggesting that men make fewer Omission mistakes and have more Time Remaining than women. There was no congruent interaction between Difficulty and any of the experimental response variables ($p > 0.05$) as detected in study 1.

A Difficulty x Gender x High / Low DT level 3-way ANOVA using a median split for High and Low DT binning revealed no Dark Triad trait differences for Incorrect, Omissions, or Time Remaining ($p > 0.05$). Though there were no direct effects at the predetermined level, there was interaction between Psychopathy and Difficulty on Incorrect ($p < 0.05$) responses.

Multiple regression analysis with all three Dark Triad traits evidenced Psychopathy to be a predictor of Omission mistakes ($p < 0.05$), though no other significant results were found. Impulsivity regressed on the response variables found no predictors for Incorrects or Time Remaining ($p > 0.05$) and Machiavellianism, Narcissism, and Impulsivity were not significant predictors of Omission ($p > 0.05$). Unfortunately, the overall small sample size leaves us with little power of this significance. Despite most results returning insignificant, the original proposal included running mediation tests and they were conducted as such.

Using simple mediation to test for individual differences in the prespecified conditions by using additional personality measures, evidence showed that Shortcuts at Work mediated the impact of Narcissism on the amount of Time Remaining (indirect effect = 2.047, $p < 0.05$, 95% CI [0.206, 6.372]).

5.5.2 In-person Model Assembly Discussion

Conceptual and theoretical underpinnings were the same as Study 1, as they were designed in tandem. Regardless of the repeated caveat of being a relatively small sample size and substantially smaller than originally desired, planned, and hoped for, some significant – even if low power – results were detected.

Ultimately, there were no interaction effects between Gender and Difficulty on any of the response variables but detected significant Gender differences in Omissions and Time Remaining, as men in both Difficulty groups made more progress in less time than the women. The lack of interaction indicates that the Difficulty condition was of relatively little impact, and preliminary analysis of the incoming data confirmed what was originally suspected: the task itself was too difficult overall. Indeed, across all 80 total participants, only 11 finished the task at all and only 9 had more than 2 seconds remaining. Additionally, of these 11 who finished the task, 9 were men and 2 were women, which is especially surprising given the Gender breakdown of the sample. This suggests a clear main effect for Gender on both Omission mistakes and Time Remaining.

There was no evidence for differences in Incorrect, Omitted, or Time Remaining response variables between Individuals respectively High and Low in the Dark Triad traits. In spite of the lack of significance at the predetermined level, there was significant interaction between Psychopathy and Difficulty on Time Remaining, though the analysis suffered from the same paltry number of High Psychopathy classified participants, a mere 10, with the maximum individual score being 3.555. Generally

speaking, there was not much to glean from this other than being grateful for the lack of psychopathy present amongst the sample.

Congruent with both the analysis completed for Study 1 and the belief that there is potential insight from mediation tests even when the initial regression does not demonstrate significance, the tests were run as originally proposed. Perhaps unfortunately, though not unexpectedly, simple mediation to test for individual differences in the prespecified Gender and Difficulty conditions using the Dark Triad and Impulsivity traits found no mediation by Impulsivity on any of the Dark Triad traits relationship with any of the response variables Incorrect, Omission, or Time Remaining. Additional tests of the Satisfaction with Life Scale and Shortcuts at Work scale as mediators of the Dark Triad's impact on the response variables evidenced Shortcuts at Work mediated the impact of Narcissism on Time Remaining. While this mediation was significant, Narcissism was not originally a significant predictor of Time Remaining.

6 Limitations, Conclusions, and Final Thoughts

Unfortunately, a substantial number of long-ranging practical and pragmatic decisions were made at various points with imperfect information and real-time constraints – much like the artificially implemented constraints, but problems that had to be dealt with in real time. The very first designs for Study 1 called for participants to complete the task from the PSU on-site setting, but this was changed to an online environment when it was determined a large sample size would be difficult to achieve. Unexpected but fortunate, the PSU School of Business implemented the SONA Systems participant recruitment in the Winter prior to data gathering for these studies. The original protocol to recruit online and via colleagues currently teaching in the School of Business had been formalized and standardized by the administration via this recruitment platform. While a substantial sample was achieved for Study 1, even with this increase in formality and expected increase in participant registration, Study 2 suffered from an overall lack of participants.

Participants were allowed to complete the Study 1 task from a location and device of their choosing to emulate working from home. Ultimately an attempt at balancing tradeoffs, the experiments were performed with complete freedom to stray outside the stated guidelines and instructions. Indeed, this is evidenced for by the sheer number of participants who had significant Time Remaining in Study 1 as opposed to Study 2. While the decision was eventually made to take a slightly larger approach in scope to problem-solving and decision-making as opposed to just Shortcutting, the

original intention was to provide both the freedom and incentive to cheat. Having chosen the particular Number Place task Study 1, it would have improved the analysis process if the difficulty condition had been manipulated by arrangement instead of volume. Unfortunately, this only became evident after data acquisition began.

Though Study 1 reached an acceptable sample size, it may have been better to find an alternative task to in-person model building and, instead, used a similar online environment because the laboratory setting limited the number of individuals who participated (it is worth noting that this was prior to the COVID-19 pandemic). Ultimately, accepting the additional hurdles and balancing the necessary practical decisions, a positive view of the environmental condition incongruity was taken in the analysis section, and a short discussion of the potential impact of these differing environments is included. In the end, study registration was open for the entire duration of the participant recruitment window, there was 100% open availability for the entire allowed window by the SONA administration. Regarding Study 2, participants were allowed to schedule an exact time of their choosing with only 24-hour advance notice if one of the open availability slots did not work for them. That is, there was absolutely no way to allow for more participant flexibility or accommodation.

Despite the attempt at combining self-report data with observed experimental outcomes, self-report data is notoriously unreliable (Jonason, et al. 2014). Observation of the traits in experimental conditions would be speculative at best and beyond the scope of this research. Further complicating this, measuring the Dark Triad traits using

self-report creates an interesting paradox. We are asking deceptive individuals, with no direct benefit for being truthful, to respond honestly. The potential cost for this honesty, should anonymity compromised, puts a rational participant in a genuine quandary as far as how to proceed. Even though reliability between self-reported Dark Triad scores and external variables have been reported with consistency, the very nature of self-report measures lend them to manipulation by deceptive participants. Because Shortcutting behavior was self-reported instead of being operationalized within the experimental design, it would not be correct to make strong causal assertions even if we had found significance regarding SAWS. And, even if it had been possible to accomplish the operationalization as once planned for measuring Shortcutting behavior in the experiment itself, it was questionable whether or not some sort of conditional adjustment would be enough to impact the strategies accounted for in the Dark Triad and Impulsivity. It would be potentially disingenuous to claim artificial stress in an experimental setting would conclusively change participants' life history strategies and implementation of them in the hypothetical situation, though there were conclusive gender differences and interaction with the experimental difficulty condition.

There were a few bureaucratic and administrative roadblocks to overcome, the two major issues being participant anonymity in a physical setting and acquiring the desired data. Like the original Study 1 design to be done in person, dynamic data (data regarding incremental progression and the actual process used to complete the task) was desired for both studies. However, it was otherwise impossible to record this

dynamic data for Study 2 because it would have violated the necessary privacy requirements agreed to when getting Institutional Review Board certified. Indeed, just getting the certification to complete the studies in their highly anonymized state took an excess of 9 months and could have required substantially more had a modification been attempted. As such, even though desired changes did emerge, this critical adherence to the bureaucracy may have impacted the overall effectiveness of the research.

In general, use of college students for academic research is common place, especially for theses and dissertations. However, college student responses have been found to be slightly more homogenous with inconsistent effect sizes both in direction and magnitude with no systematic pattern to the observed differences (Peterson, 2001). Researchers must use caution when extrapolating any relationship found in student samples to non-student populations. Compounding this potential limitation, the common source being college students may result in common-source variance. Except in outlying conditions, current undergraduate students do not already have an undergraduate degree, thus limiting expectations for their overall education levels. Congruently, and even though PSU trends a bit older in age (recall M = 25.53 years old), most participants had relatively limited (M = 2.014 years, SD = 3.008) work experience, and thus may not be able to fully invest in a hypothetical work scenario.

Given the somewhat philosophical nature of Systems Science but without straying beyond academic bounds, it is important to point out that personality traits – specifically The Dark Triad and Impulsivity – are not real constructs in the sense of

existing in a tangible artifact or structure. Even though we found a significant predictor of a behavioral outcome, it would be getting ahead of ourselves to claim these traits to be anything other than descriptors and predictors for the observed behavior. These abstract personality constructs may help predict behavior, but they do not explain why certain behavior occurs and could never account for all aspects of it. Even in using the most sophisticated trait, the trait could never fully predict participant responses in every possible situation because participants with the same trait in the same environment could respond differently. In addition to different or modified task(s), it may be appropriate to test other personality traits, constellations, or composites. This research was particularly focused on the dark side of human nature, thus interest in The Dark Triad and Impulsivity. Future researchers may not necessarily have the same underlying or original interests and thus would be entirely justified in using their own measures from their own unique areas of interest.

All things considered, the interdisciplinary nature of the research evidenced itself to be beneficial at points but detrimental at others. The breadth, depth, and volume of decisions to navigate at different points with sometimes ambiguous and occasionally conflicting standards, practices, and styles was daunting. Given the primary goal of this research was fulfilling specific university degree requirements, the analysis was conducted using methods taught and used in Systems Science and School of Business courses and academic projects, though researchers in different fields may choose to

approach their analysis from a different perspective. Application of a multiple perspectives approach is foundational in Systems Science.

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Appendix A: Demographic Questionnaire

Age:

_____

Sex:

- ☐ Male
- ☐ Female
- ☐ Other (specify) _____

Marital status:

- ☐ Single
- ☐ Married
- ☐ Other (specify) _____

Primary language:

- ☐ English
- ☐ Other (specify) _____

Country of origin:

- ☐ United States
- ☐ Other (specify) _____

Race / Ethnicity:

- ☐ White
- ☐ Black or African American
- ☐ Hispanic or Latino
- ☐ Native American
- ☐ Asian or Pacific Islander
- ☐ Other (specify) _____

Education:

- ☐ No high school diploma or equivalent
- ☐ High school diploma or equivalent
- ☐ Vocational training or certifications
- ☐ Associate’s degree
- ☐ Bachelor's degree
- ☐ Master's degree
- ☐ Professional degree
- ☐ Doctorate degree

Employment status:

- ☐ Employed full-time
- ☐ Employed part-time
- ☐ Unemployed / retired

Industry type:

- ☐ Private sector, for-profit organization
- ☐ Private sector, non-profit organization
- ☐ Public sector (government, etc.)
- ☐ Self-employed
- ☐ Unemployed / retired

Salary / Annual Income:

- ☐ 0 - $30,000
- ☐ $30,000 - $55,000
- ☐ $55,000 - $80,000
- ☐ $80,000 - $110,000
- ☐ > $110,000

Years at current employer:

_____

Net worth:

- ☐ < $0 (debt)
- ☐ $0 - $25,000
- ☐ $25,000 - $100,000
- ☐ $100,000 - $500,000
- ☐ > $500,000

Appendix B: Short Dark Triad (SD3) Personality Measure

<u>The Short Dark Triad (SD3)</u>

Instructions: Below are 27 statements with which you may agree or disagree. Using the 1-5 scale below, indicate your agreement with each item by placing the appropriate number on the line proceeding that item. Please be open and honest in your responding. The 5-point scale is: 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, 5 = Strongly Agree.

	Disagree Strongly	Disagree	Neither agree nor disagree	Agree	Agree Strongly
It's not wise to tell your secrets.	1	2	3	4	5
I like to use clever manipulation to get my way.	1	2	3	4	5
Whatever it takes, you must get the important people on your side.	1	2	3	4	5
Avoid direct conflict with others because they may be useful in the future.	1	2	3	4	5
It's wise to keep track of information that you can use against people later.	1	2	3	4	5
You should wait for the right time to get back at people.	1	2	3	4	5
There are things you should hide from other people to preserve your reputation.	1	2	3	4	5
Make sure your plans benefit yourself, not others.	1	2	3	4	5
Most people can be manipulated.	1	2	3	4	5
People see me as a natural leader.	1	2	3	4	5

I hate being the center of attention.	1	2	3	4	5
Many group activities tend to be dull without me.	1	2	3	4	5
I know that I am special because everyone keeps telling me so.	1	2	3	4	5
I like to get acquainted with important people.	1	2	3	4	5
I feel embarrassed if someone compliments me.	1	2	3	4	5
I have been compared to famous people.	1	2	3	4	5
I am an average person.	1	2	3	4	5
I insist on getting the respect I deserve.	1	2	3	4	5
I like to get revenge on authorities.	1	2	3	4	5
I avoid dangerous situations.	1	2	3	4	5
Payback needs to be quick and nasty.	1	2	3	4	5
People often say I'm out of control.	1	2	3	4	5
It's true that I can be mean to others.	1	2	3	4	5
People who mess with me always regret it.	1	2	3	4	5
I have never gotten into trouble with the law.	1	2	3	4	5
I enjoy having sex with people I hardly know	1	2	3	4	5
I'll say anything to get what I want.	1	2	3	4	5

Appendix C: Impulsivity Items

Instructions: Below are 19 statements with which you may agree or disagree. Using the 1-5 scale below, indicate your agreement with each item by placing the appropriate number on the line proceeding that item. Please be open and honest in your responding. The 5-point scale is: 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, 5 = Strongly Agree:

	Disagree Strongly	Disagree	Neither agree nor disagree	Agree	Agree Strongly
I generally do and say things without stopping to think.	1	2	3	4	5
I usually think carefully before doing anything.	1	2	3	4	5
I often get into a jam because you do things without thinking.	1	2	3	4	5
I have a habit of starting things and then losing interest in them.	1	2	3	4	5
Often I stop in the middle of one activity in order to start something else.	1	2	3	4	5
I complete what I start.	1	2	3	4	5
I am restless at the theater or lectures.	1	2	3	4	5
I "squirm" at plays or lectures.	1	2	3	4	5
I am restless at lectures.	1	2	3	4	5
I make-up my mind quickly.	1	2	3	4	5
I answer quickly.	1	2	3	4	5
I usually make up your mind quickly.	1	2	3	4	5
When you go on a trip, I like to plan routes and timetables carefully.	1	2	3	4	5
I like to plan things way ahead of time.	1	2	3	4	5
I would like to take off on a trip with no preplanned or definite routes, or timetable.	1	2	3	4	5
I plan trips well ahead of time.	1	2	3	4	5
I like to think about complex problems.	1	2	3	4	5
I like complex problems.	1	2	3	4	5
I enjoy thinking out complicated problems.	1	2	3	4	5

Appendix D: Satisfaction with Life Scale

Instructions: Below are 5 statements with which you may agree or disagree. Using the 1-5 scale below, indicate your agreement with each item by placing the appropriate number on the line proceeding that item. Please be open and honest in your responding. The 5-point scale is: 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, 5 = Strongly Agree.

	Disagree Strongly	Disagree	Neither agree nor disagree	Agree	Agree Strongly
In most ways my life is close to my ideal.	1	2	3	4	5
The conditions of my life are excellent.	1	2	3	4	5
I am satisfied with my life.	1	2	3	4	5
So far I have gotten the important things I want in life.	1	2	3	4	5
If I could live my life over, I would change almost nothing.	1	2	3	4	5

Appendix E: Short cuts at Work Scale

Instructions: Below are 8 statements with which you may agree or disagree. Using the 1-5 scale below, indicate your agreement with each item by placing the appropriate number on the line proceeding that item. Please be open and honest in your responding. The 5-point scale is: 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree nor Disagree, 4 = Agree, 5 = Strongly Agree.

	Disagree Strongly	Disagree	Neither Agree nor Disagree	Agree	Agree Strongly
When I can, I cut corners at work.	1	2	3	4	5
I try to minimize the effort expended when doing work.	1	2	3	4	5
If skipping a task will save me time at work, I will do it.	1	2	3	4	5
I do not do every little part of my work.	1	2	3	4	5
I am more concerned with the finished product than all the little steps.	1	2	3	4	5
I am more concerned with getting something done than getting it right at work.	1	2	3	4	5
I use short-cuts at work to get ahead.	1	2	3	4	5
Efficiency is more important than accuracy at work.	1	2	3	4	5

Appendix F: Easy and Hard Number Place Task

Instructions: Your boss has instructed you to complete the following puzzle correctly, quickly, and entirely. He has been known to completely withhold pay from employees who do not complete their assigned tasks. Additionally, he has been known to partially withhold pay from employees who make mistakes.

4	6				5	7		1
				7	4	2	6	3
9	2	7				8	4	5
3		6	1	2				
7				6				9
8	9			4	3			
2	7	9					5	4
			6				8	2
6	8		4		2		3	

4	6	3	2	8	5	7	9	1
5	1	8	9	7	4	2	6	3
9	2	7	3	1	6	8	4	5
3	5	6	1	2	9	4	7	8
7	4	2	5	6	8	1	3	9
8	9	1	7	4	3	5	2	6
2	7	9	8	3	1	6	5	4
1	3	4	6	5	7	9	8	2
6	8	5	4	9	2	1	3	7

	5	4				7	8	
				4	9			
9			5		8			1
8	9	3						2
		2						
						5	4	
2	3		6		4		7	
		5	2		7	9	3	
		6					1	

3	5	4	1	2	6	7	8	9
1	2	8	7	4	9	6	5	3
9	6	7	5	3	8	4	2	1
8	9	3	4	7	5	1	6	2
5	4	2	8	6	1	3	9	7
6	7	1	3	9	2	5	4	8
2	3	9	6	1	4	8	7	5
4	1	5	2	8	7	9	3	6
7	8	6	9	5	3	2	1	4

Appendix G: 54-piece Model Building Set # 30497

Instructions: Your boss has instructed you to complete the following model correctly, quickly, and entirely. He has been known to completely withhold pay from employees who do not complete their model building tasks. Additionally, he has been known to partially withhold pay from employees who make mistakes building their models.

Note:

Appendix H: Post-Experiment Question 1

Instructions: Respond to the following question after completing the given task (Number Place or Model Building)

“Did you feel as though you were short on time or rushed to complete your task?”

Appendix I: Post-Experiment Question 2

Instructions: Respond to the following question after completing the given task (Number Place or Model Building)

“Did you use or implement any form of shortcut, workaround, or other non-instructed process to complete the given task?”