Self-Regulation, Displaced Aggression and Power: Effects of Throwing Fireballs at Colleagues

A THESIS

APPROVED FOR THE DEPARTMENT OF PSYCHOLOGY

COLLEGE OF EDUCATION AND PROFESSIONAL STUDIES

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Abstract

Self-regulation, displaced aggression and power were examined by affective processing measured through behavior, in the context of a simulated workplace setting. Four conditions looked at the effects of self-regulation depletion and on displaced aggression and power in order to help explain profit loss through productivity. Results showed no relationship between the four experimental conditions and the main effects of the Displaced Aggression Questionnaire (DAQ), the Self-Control Scale (SCS), Linguistic Inquiry Word Count (LIWC) count of negative emotion/affect, the Word Completion Task (words completed aggressively). Implications involving design and error are discussed.

Keywords: self-control, ego depletion, power, workplace aggression

Self-Regulation, Displaced Aggression, and Power: Effects of Throwing Fireballs at Colleagues

The Bureau of National Affairs estimated American companies spend up to six million a year on aggressive workplace behaviors (Mattice, 2012). The American Psychological Association estimates that aggressive behavior in the workplace costs $300 billion annually for companies due to turnover, medical expenses, productivity and absent employees (Mattice, 2012). Some workplace aggression may include physical violence but others may include withholding information, spreading rumors and purposely making a colleague's job harder by setting up blocks to their work goals and responsibilities (Jawahar, 2002). Stress in an organization, such as workplace aggression, could affect the cognitive resources of employees, including self-control (Hershcovis & Barling, 2010), which helps an individual stay on task and finish work goals, and ultimately effect company profits.

Cognitive resources may also include emotional energy and executive functioning fuel needed for job performance (Hershcovis & Barling, 2010). Job performance includes many tasks, and it is likely an individual uses attentional resources to complete these tasks. Attention is part of the central executive of working memory (Baddeley, 1986) and resources of the central executive (executive functioning) and self-regulation are shared (Kaplan & Berman, 2010; Hofmann, Schmeichel & Baddeley, 2012; Schmeichel, Vohs & Baumeister, 2003). If this common resource is depleted, work performance will likely lower (Hershcovis & Barling, 2010), and monitoring of self (i.e. self-awareness) involved in self-control may malfunction and allow aggression to be displayed (Baumeister, Heatherton & Tice, 1994). If an individual with perceived power performs aggression, the target may construct reality stating that they and/or their job position does not matter due to the aggressive attack. The aggressive attack may be taken personally, and this may also affect job performance (Hershcovis & Barling, 2010).

Different levels of aggression, self-regulation and power could ultimately affect a company as a whole, including company information structure, assets, profit and employees.

For example, if a large company had a supervisor who did not attend to a subordinate's ideas to redesign a product, this avoidance to consider the ideas may be perceived as a form of aggression (Baron & Neuman, 1998). The supervisor may think he or she has the right to not consider the subordinate's ideas as he/she may be experiencing power and believe that they do not have to listen to a subordinate's ideas. The subordinate may experience a lack of power to retaliate by use of direct aggression toward the supervisor. Instead, the subordinate may take this aggressive energy and direct it toward an innocent victim (displaced aggression). As all of this expenditure of psychological energy is taking place, attention is not on the goals of their position in the company, and this decline in necessary attention brings loss of productivity from the subordinate. This substantial energy expenditure also may allow for other losses of productivity due to the possibility that the subordinate's ideas for the new product may have been more cost effective or more efficient for the company. Ultimately, this scenario shows a possible loss of profit due to the triangle of three variables: self-regulation, power and aggression. Despite the demonstrable importance of these factors, the interactions of displaced aggression, self-regulation and power in the workplace, to my knowledge, have not been explored.

The most violent types of direct aggression are well documented but the true extent of workplace aggression is unkown. Reciprocal aggression behavior explains direct aggression and retaliation against the original perpetrator but does little for an explanation of displaced aggression (Denson, Pedersen & Miller, 2006; Geen, 1998). How power is perceived and its impact on self-regulatory resources may have a direct influence on workplace aggression and ultimately on an individual's performance in the workplace. Arguably, different levels of self-

regulation, aggression and power may work to increase performance in some situations with some individuals.

Self-regulation

In recent years, a great amount of research has been published on self-regulation and its counterpart, ego depletion, the state of depleted self-regulatory resources (Vohs, Baumeister & Schmeichel, 2012; Nes, Carlson, Crofford, de Leeuw & Segerstorm, 2011; Hagger, Wood, Stiff & Chatzisarantis, 2010; Ferrari & Pychyl, 2007). Without self-regulatory processes, long-term goal–directed behavior would suffer and individuals would behave due to sequential impulsive actions based on emotions, moods and desires (Hagger et al., 2010). Self-regulation involves the monitoring of an individual's behavior to evaluate if the behavior is in line with current goals. If monitoring does not take place, behavior will likely be decided by the individual's current affect and desires, without determining future consequences. When an individual manages attention, the cognitive process of selectively following one event or thing over another (Schmeichel, 2007), an individual can monitor goal progress and focus on completing goals. If an individual does not manage attention well, it may be likely that attention becomes aimed at a short-term reward (instant gratification) (Baumeister et al., 1994).

Delay of gratification is positively correlated with attention (Baumeister et al., 1994). Concentration and attentional diversion skills are found in those individuals high in self-regulation, and these skills are highly useful to successfully delay gratification (Baumeister et al., 1994). By delaying gratification, an individual can start to understand the choice between an immediate reward and a more remote but more gratifying reward. As an individual starts to become aware of the difference between immediate and delayed rewards, it is likely the individual will use a type of attention control termed transcendence (Baumeister et al., 1994).

Transcendence is a form of attention control that allows an individual to see beyond his/her immediate environment and evaluate immediate situation and delayed concerns (Baumeister et al, 1994). Without transcendence, self-regulation would fail and an individual would not have the awareness to delay gratification and behavior would be performed based on short-term rewards. Examples of lapses of self-regulation include negative behaviors such as drug use, crime, lack of properly managing finances (aiding to debt), sexual promiscuity (leading to sexually transmitted diseases and/or pregnancy) and eating disorders (Wills & Stoolmiller, 2002; Baumeister et al., 1994).

Before an individual can transcend his/her current situation and monitor to see if current behavior is in line with current goals, goals will need to be created according to standards (Baumeister et al., 1994). If an individual has not developed standards to set goals against, or his/her standards are inconsistent, self-regulation is not effective and is likely to fail (Baumeister et al., 1994). Management according to standards, such as distal and short-term goals is only effective toward successful self-regulation if these standards are appropriate and realistic (Baumeister et al., 1994). An individual will then use realistic standards will then be used to self-manage by monitoring behavior and cognitions with the use of self-regulation to perform behavior congruent to goals.

Self-regulation is defined as the ability to change or overcome an individual's inner responses and to be able to disrupt undesired behavior and refrain from acting on the negative/undesired affect (Baumeister et al., 1994). Many of an individual's cognitive activities depend and use a common resource, akin to strength or fuel (Hagger et al., 2010; Muraven & Baumeister, 2000). A resource is defined as something that is finite in quantity and can be depleted by frequent use and demands (Kaplan & Berman, 2010). If self-regulatory resources

are unavailable, due to lowered strength or no available fuel, performance impairment, due to the unavailable use of willpower is likely (Schmeichel et al., 2003).

Willpower is defined as the application of self-regulatory resources to change behavior (Baumeister et al., 1994). Individuals fail to use willpower due to lack of motivation to monitor, and low monitoring standards, both termed missregulation, and the lack of the capacity to monitor, termed underregulation (Hofmann et al., 2012). A student who procrastinates writing a paper may be using self-regulatory strength to attend to the anxiety due the cognition of writing the paper and not using the resource to solve the problem of physically writing the paper. The student is not monitoring correctly to evaluate if the behavior is in line with their goal of writing the paper. This student has misregulated his/her resources to attend to his/her current affect rather than their goal. Everyday activities at work and home may pull from a common self-regulatory resource. Attention, working memory and self-regulation, are thought to use the same common resource (Vohs, Baumeister, Schmeichel, Twenge, Nelson & Tice, 2008; Schmeichel et al., 2003). In the example of the student writing a paper, if the above listed processes have been engaged frequently and the common resource has been depleted, the student may not have the resources available for willpower or be able to sustain attention on his/her goal to accomplish it. This student has experienced underregulation, due to the lack of resources to regulate.

Studies have shown that performing one act of self-regulation impaired performance on another sequential, unrelated task of self-regulation, termed a *dual-task paradigm* (Baumeister, Bratslavsky, Muraven & Tice, 1998; Muraven, Tice & Baumeister, 1998). The first act of self-regulation uses resources that have likely depleted resources for a second act by limiting available resources. In a study by Vohs & Heatherton (2000), dieters were seated either next to or in the same room with a bowl of candy. Those participants that sat closest to the tempting

candy were less able to use self-regulation in a subsequent task. As a dieter is monitoring to not think about eating the candy, their attention to that cognition is using self-regulatory resources and depletion occurs. Self-regulation is impaired and the monitoring system continues to operate allowing more cognition about the candy to enter awareness (Baumeister et al., 1994). A dieter who is telling herself not to think about the candy is still thinking about the candy even though the monitoring system is alerting them not to; regulatory resources are not available to stop the cognition so the individual keeps thinking about the candy. Trying not to think about the candy allowed for a rebound effect that bolstered thinking more about the candy and the need to use inhibitory resources (Vohs & Heatherton, 2000), (Baumeister et al., 1994). This rebound effect occurs when an individual overtaxes the systems that use the stated common resource, such as attention, working memory and self-regulation (Baumeister et al., 1994). This dieter has experienced missregulation; the resources are available yet the dieter is focusing their resources on the wrong affect.

In a similar *dual-task paradigm* study, Schmeichel (2007) showed that one act of executive control, paying attention to a person on a screen while trying to not read the words appearing on the screen, inhibited performance of a second executive task of either the operation span task or the sentence span task. This study suggested that executive control, such as paying attention, reduced performance on a subsequent task of attention and that attentional resources may be limited. In another study, inhibition using self-regulatory resources was used while watching a movie affected intellectual performance on a subsequent task of answering questions from a portion of the GRE (Graduate Record Exam, an assessment used for prospective students wanting to enter graduate school) (Schmeichel et al., 2003). This study found a positive relationship between depleting self-regulatory resources and its affect on attentional resources.

Results suggests that self-regulation and executive functions pull energy from a shared resource (Schmeichel et al., 2003). For example, purposefully listening to a speech or lecture early in the day may impact the resources available to concentrate on a financial report that you need to work on after the lecture, thus lowering productivity.

The act of purposeful attention, such as that in play during a lecture, may deplete regulatory resources, as one may want to wander in his/her thoughts, but using willpower keeps the person focused on what they are listening to. Studies have shown that ego depletion is different compared to other aspects of the working memory (executive processes) that include the 'slave systems' of the visiospatial sketchpad and the phonological loop (Baddeley, 1986) as they are not purposeful and include more automatic processes (Hofmann et al, 2012). An experiment by Schmeichel (2007) involved participants that either wrote freely about an experience or had to write their experience without using the letter "A" (self-regulatory depletion). Participants then had to perform a digit span task by remembering a sequence of numbers and either recalling them sequentially or in reverse order.

Results suggest that updating information in long-term memory, which may use deliberation and attentional resources to alter previous knowledge and inhibition of responses, relies on a shared resource and maintenance of keeping information in working memory which may rely partially on the visiospacial sketchpad and the phonological loop (more automatic processing), did not rely on the same resource (Schmeichel, 2007). It may be that the maintenance of keeping information in working memory may still use some self-regulatory resources but due to the use of the 'slave systems,' which use more automatic processing, the resources may not be taxed as much or as fast as other cognitive behaviors. The maintenance of

keeping information in working memory may be hard to separate from the use and manipulation of that information in working memory, described as fluid intelligence.

Fluid intelligence is defined as the ability to manipulate cognitions, reason and use analogical reasoning (Schmeichel et al., 2003). Neuroimaging data discussed by Posner, Rothbart, Sheese and Tang (2007) suggests that the control of emotions and cognitions relies on the use of the anterior cingulate cortex, part of the executive attention network, as electroencephalography (EEG) studies show engagement of this neurological area in both cognition and emotion control. Although ego depletion is related to working memory and executive function (attention) by means of a common resource, the act and processes that govern and initiate each process are separate and different (Vohs et al., 2008). It is uncertain if attentional resources are taxed during maintenance or use of fluid intelligence due to the inability to separate the processes. Yet if resources are taxed, an individual that holds more information in working memory may use more resources and these resources may be unavailable for self-regulatory implementation at a later time. Different types of attention involve different processes and only one type of attention uses self-regulatory resources. Current research is uncertain on the type of attention needed for fluid intelligence.

William James identified two types of attention: involuntary attention, attention that requires no or minimal effort and voluntary attention (directed attention), attention that is forced by some effortful resource (Kaplan & Berman, 2010). A concrete example of involuntary attention is a person looking at the accident on the side of the road and seeing that a car is on fire. Similarly, an example of directed attention is a person focusing on a lecture he/she thinks is boring. Although it is argued that voluntary attention involves automatic processes and that

directed attention does not, it is more likely that attention is situated on a continuum with proportions of both involuntary and directed attention (Kaplan & Berman, 2010).

Attention that is effortful, such as directed attention, requires one to fixate on an object/person and requires executive function and resources for an individual to sustain this directive attention (Kaplan & Berman, 2010). Self-regulatory behaviors, such as emotion management, require one to fixate his/her attention on his/her current affect and regulate the outcome behavior by use of inhibition. Both of these functions of attention require resources, but the resources may or may not be the same. In a dual-task paradigm Baumeister et al. (1998) observed that suppressing emotion during a movie, which depleted self-regulatory resources, affected the participants' effort on a second task requiring directed attention on solving puzzles. The findings suggest that both tasks, directed attention and emotion regulation, pull their resources from a common reserve (Kaplan & Berman, 2010).

At work, it may be likely that attention on tasks that are not enjoyable use directive attention as compared to involuntary attention. Directive attention does not follow stimulus patterns and is somewhat independent of the environment (Kaplan & Berman, 2010). There is a difference in the brain regions that the two types of attention use. The use of directive attention requires the dependence on frontal and parietal regions of the brain whereas involuntary attention networks are not so dependent on these structures (Fan, McCandliss, Fossella, Flombaum & Posner, 2005). Distinctions between the two types of attention were evident in an fMRI study using an attention network test suggesting that taxing of resources due to the use of directive attention may not allow for future use of self-regulatory resources (emotion regulation) (Fan et al., 2005). If self-regulatory resources are depleted and the individual cannot use emotion regulation, negative affect could be experienced by the individual. The use of emotion

regulation (self-regulation) in the workplace by individuals is predictive of negative and positive affect (Kafetsios & Zampetakis, 2008).

To summarize, self-regulatory resources are described as finite. As an individual uses up his/her resources on one event this expenditure may reduce the likelihood that willpower will be used on a separate sequential event. Using attentional resources of the central executive is thought to pull resources from the same resources as self-regulation. If resources are depleted, behavior in the workplace may change and productivity will likely suffer. Without self-regulation to guide behavior according to an individual's set standards and goals, behavior may become stimulus driven and defined by current affect, which could be negative and/or aggressive, rather than perceived self-identity.

Aggression

Workplace aggression may include harm to the organization for whom the individual works or harm to other individuals working in the same organization (Jawahar, 2002). An example of an organization is the specific company for whom an individual works, such as Dillard's department store; their policies and ideologies and an individual working in the same organization would be a colleague or boss working for the same organization. A factor analysis performed by Baron and Neuman (1998) found three factors of organization categorization of aggression behaviors. The first was hostile expression, such as talking behind a colleague's back, gossip, rumors, negative talk about the organization and negative gestures. The second was obstructionism, which involves behaviors that are designed to interfere with a colleague's ability to perform or attain work goals by not providing needed resources or using the resources needlessly and/or frivolously. The last factor is overt aggression which includes physical workplace violence such as assaults, property damage and stealing. All of these factors involve

negative affect and vary in their intensity of destructiveness, as some behaviors involve greater destruction than others (Jawahar, 2002).

Negative affect has a positive relationship with aggression (Baumeister & Boden, 1998). Negative affect may serve as bias as aggression links may be recalled faster or stronger and therefore thought of as an antidote for current experienced dissonance (Bushman, Baumeister & Phillips, 2001). Depletion of self-regulation can strongly increase the likelihood of direct aggression and reduce the likelihood of the ability to reappraise a provocation (DeWall, Finkel & Denson, 2011). If an individual experiences a provocation or social rejection (negative affect), without the availability of self-regulatory resources, the individual may not be able to focus on his/her current goal by use of emotion regulation, due to underregulation (not enough self-regulatory resources) (Baumeister et al., 1994). Additionally, due to underregulation an individual may not be able to avoid frustration (defined as a block to a current goal, negative affect) or may have high or adequate amounts of resources available but use those resources to focus on the current affect state and/or ruminate on the frustration (misregulation) (Baumeister et al., 1994). The individual may consider the provocation (an interpersonal event that produces negative affect) a threat against self and inner restraints are needed to prevent behavioral acts of aggression (anger, hostility, verbal aggression and physical aggression) (Baumeister & Boden, 1998). Without self-regulation, aggressive acts due to the negative affect of the provocation would likely be observed.

Many aggressive acts in a workplace setting are likely to involve displaced aggression (DeWall et al., 2011). This displaced aggression is behavior that occurs when an individual is provoked and is unable or chooses not to retaliate against the original provocator and aggresses against an innocent target (Denson et al., 2006). An example would be if an individual's boss

states that the last project the individual completed was not on time and the individual acts hostile and will not comply with a colleague's request for use of a file in the individual's possession. According to Miller, Pendersen, Earlywine and Pollock (2003), there are two bases that can underlie the use of displaced aggression: arousal and rumination.

Angry rumination may have important implications for the possible paving for displaced aggression, by way of emotion regulation (requires self-regulatory resources to implement) (Vasquez, Osman & Wood, 2012; DeWall et al., 2011). Rumination involves recalling the provocation, focusing on the negative affect such as anger and planning for retaliation (DeWall et al., 2011). These stated cognitions are known to augment displaced aggression, and the antidote to dissolve rumination involves slowing of monitoring and suppression of negative affect and refraining from behavior that is due to aggressive desire (DeWall et al., 2011). These antidotes for dissolving rumination involve the components of thought suppression, control of behavior and emotion regulation (DeWall et al., 2011). All three of these antidotal processes need self-regulation resources to implement and if those resources are unavailable, aggression is likely to be observed (DeWall et al., 2011).

The arousal theory of displaced aggression is based on Zillmann, Katcher & Milavsky's (1972) excitation transfer of aggression. This theory is based on the idea that displaced aggression is triggered due to two different provocations. In the above example of the individual that was told that he/she did not get his/her work done on time by their boss would be considered the first provocation. The provocation has caused the individual negative aggressive affect and arousal. The colleague that has asked for the use of a file may be considered a triggering provocation to the individual (Miller et al., 2003). This triggering is due to the first provocation eliciting arousal without dissipation of this arousal; therefore arousal has not reached baseline

and a slight provocation could put the individual over the threshold of available resources for self-regulation and aggression may be displayed (Miller et al., 2003).

The asking for the file is perceived as a provocation possibly due to misattribution. When the colleague asks for the use of the file, this request may cause frustration, an interference with goal completion (the current task the individual is working on), and add to the transferred negative affect already currently experienced, and therefore misattribute all the negative affect due to the colleague's request (Miller et al., 2003). This arousal of displaced aggression applies only when provocation one and two both occur within a 20 minute timeframe, if the provocations occur over the 20 min. timeframe, the ruminative platform theory is used instead as the explanation of behavior. The second provocation may have enough weight to allow aggression to be behaved but is not intense enough to elicit full awareness as a trigger, as awareness would allow for monitoring of behavior and decisions and choices for behavior may be made as compared to under the awareness threshold that elicits more automatic behavior (Legault, Green-Demers & Eadie, 2009). Without awareness, no explicit decision has been made to behave aggressively.

In a workplace setting the decision to behave aggressively may cause dissonance due to two opposing forces. The forces that oppose an individual to act aggressive are protecting self-image (this behavior may not be in line with who I perceive I am) and the responsibility of conforming to the perceived social sanctions of workplace etiquette (it is socially not correct to yell at my supervisor) (Gino, Schweitzer, Mead & Ariely, 2011). The individual proposing the use of aggression may use cognitive processes to reflect on the event and consider possible scenarios and consequences, yet if shared resources for executive function are depleted, monitoring is likely to fail without willpower and displayed behavior may involve aggression

(Miller et al., 2003). Without resources the individual may have no choice but to automatically engage in short-term goal motives that may be selfish and narrow (Gino et al., 2011).

If the provocation is perceived by the target as an attack on personal value or self-identity, this perception likely increases the probability of retaliation (Miller et al., 2003). Intense negative affect can activate a network of thoughts related to aggression (Miller et al., 2003). The network associated with negative affect includes, thoughts, physiological responses, and motor responses and is based on Berkowiz's Cognitive Neoassociationistic model (Berkowitz, 1990). This model states that a situational or personal event may prime or activate parts of an aggression network (Miller et al., 2003). Human aggressive behavior is a joint process between the situational factors and the individual's factors that bolster aggressive behavior (Geen, 1998).

Personality factors, as defined by the five-factor model, have shown to have a relationship with direct aggression and include dissipation-rumination, irritability and emotional susceptibility (Geen, 1998). Direct aggression is defined as aggression toward a provoking agent (Denson et al., 2006). In regards to displaced aggression in the general population those individuals with trait aggressiveness, obsession tendencies (repeating thoughts), trait rumination, vengefulness (revenge seeking) and mood monitoring (scrutinizing and focusing on emotions of self) are more likely to engage in displaced aggression (Miller et al., 2003). These factors may state engagement likelihood for displaced aggression, but it is previous learning and genetics that determine the strength of activation of these stated traits (Miller et al., 2003). If the strength of the aggression network is great, it is suggested that the activation threshold is lower as compared to loosely linked aggression networks (Miller et al., 2003). Strong links, therefore, need a less

intense provocation due to a lower threshold, yet could be mediated by implementation of willpower to avoid aggressive behavior.

In the workplace, a subordinate may perceive unfairness, injustice or an ego threat from the supervisor, but retaliation is too dangerous after analyzing a cost-benefit ratio (Denson et al., 2006). In this case, the subordinate may use displaced aggression. For those individuals who are found to be high in the personality traits parallel with displaced aggression, it is likely that they engage in 'flight' when the sympathetic nervous system perceives a threat (Denson et al., 2006), which is associated with rudimentary anger, a type of aggression (Miller et al., 2003).

Individuals with high trait displaced aggression are found to be able to inhibit their behavior in several different situations and may have high trait self-control (Denson, 2009). There is uncertainty about the processes that ultimately create behavioral expressions of aggression against an innocent party. One theory is that those who are high in trait self-control have high executive functioning ability including fluid intelligence (Denson, 2009). The more items that working memory can hold and manipulate at one time, the more fluid intelligence an individual has. It is suggested that individuals with greater fluid intelligence will use more self-regulatory resources, as it takes a common resource for use of executive function, which include self-regulatory resources, to manipulate the items in working memory at one time (Hagger et al., 2010; Shamosh & Gray, 2007). As stated earlier, this shared resource is like a muscle, exercising this resource likely raises the resource's stamina.

Ruminators use fluid intelligence to think and replay the provocation and to rehearse possible acts of revenge (Denson, 2009). Ruminating was found to be positively correlated with fluid intelligence and is associated with goal maintenance (Altamirano, Miyake & Whitmer, 2010). It is likely that high ruminators are successful at juggling multiple scenarios and as the

individual tries to not pay attention to aggressing, they think of it more, a rebound effect. As previously discussed, executive functioning such as directive attention and fluid intelligence use a common resource with self-regulation. As the individual is working to use directive attention to not think about the provocation and using fluid intelligence to ruminate, it may be likely that inhibitory resources for self-regulation will fail and aggression could be displayed. Despite the individual having a high threshold for trait self-regulation and a large fluid intelligence capacity, the self-regulatory resource is limited (Baumeister et al., 1994).

Fluid intelligence an individual uses and manipulates may work to find creative ways to reach his/her goal. How creative an individual becomes with their possible goal attaining scenarios depends on their current state of affect (including perceptions) and moral identity (values) (Sligte, deDreu & Nijstad, 2011), defined as how much morality an individual possesses as part of his/her current self concept (DeCelles, DeRue, Margolis & Ceranic, 2012). An individual may be in a position of power, such as a boss, or have the current perception of power, and this current affect may influence an individual's goal attaining scenarios.

Displaced aggression is aggression against an innocent bystander and not against the original provocateur. It is likely for displaced aggression to take place in the workplace due to the unavailability to aggress against the original provocateur, such as the individual's boss. Injustice may allow rumination and/or negative affect that could deplete self-regulatory resources needed for awareness and willpower to override aggressive urges. Understanding the individual differences involved in displaced aggression and resources needed to deter aggressive behavior could bring awareness of triggers in the environment that facilitates this phenomenon. The understanding of how hierarchies perceive power and use this power could help reduce aggressive behavior. With this knowledge of aggression and it's interaction with self-regulation

and power, aggression and ultimately loss of productivity in the workplace and other environments could be reduced.

Power

Power is defined as the ability to control the outcomes of others' due to the ability to administer rewards and punishments (Fast & Chen, 2009). A current state of power can influence an individual to put self-interests above others interests/goals (DeCelles et al., 2012). This situation may allow a boss to reach his/her goals but their employees that don't have parallel goals may be at a loss due the boss's goal interests above employee goals. In a study by DeCelles et al., (2012), participants were told that they had to decide how many points (between 0 and 10) that they would take out of the total of 500 points for themselves. The amount of points a participant took was weighted for a lottery drawing of $100. The more points, the more weight the participant obtained for the lottery drawing. It was explained to the participants that the pool of 500 points are to be treated as a common resource, such as water and food and taking too much leaves less for others. Power was examined with moral identity, moral awareness (self-awareness) and self-interested behavior (how many points they took for themselves). Results suggest that moral identity, as previously defined, is inversely related to power and when self-awareness engaged their moral identity, self-interested behavior decreased (DeCelles et al., 2012). Low self-regulation lowers self-awareness (Baumeister et al, 1994) and may have an effect on those that are currently experiencing the affect of power. If an individual is unaware of their moral identity due to a lack of self-regulatory resources, behavior may be inconsistent with the current morality self-concept.

Power bolsters goal pursuit (Galinsky, Gruenfeld & Magee, 2003) and without awareness of moral identity or resources for constraint (self-regulation), goals will likely be defined by the

individual's current affect, which could be negative and allow aggressive behaviors to be displayed. This power-aggression relationship is moderated by the need to protect status and traits of self (Fast & Chen, 2009). If a powerful individual experiences an ego threat, the individual is likely to experience ego defensiveness and behave in an aggressive manner (Fast & Chen, 2009). This relationship may be mediated by self-efficacy, as those that perceive themselves competent may be able to separate the behavior event from their self-identity and have a higher threshold for aggression due to the provocation being a threat against the behavior and not self. In a study by Fast & Chen (2009) participants were primed either with or without a power role and primed with high or low competence to see if there was an effect on aggression levels (noise blast) toward an innocent participant (displaced aggression). Results found that individuals delivered longer noise blasts in the high power-low competence condition as compared to low power and low competence and high power and high competence (Fast & Chen, 2009). Aggressive behavior could become more intense if constraint resources (self-regulation) are decreased or depleted, which would lower self-awareness of self-efficacy, or awareness of competence and threat (provocation) is experienced.

In the workplace, hierarchies of power are suggested as normal and essential in an organization (Sligte et al., 2011). Those that are higher in the hierarchy are more likely to control more resources and may feel entitled to these resources and the use of power (Sligte et al., 2011). If higher positions in an organization use and have more resources, lower positions are likely to suffer without the needed goods to fulfill goals. This frustration may allow for aggression to be observed in an employee with limited resources to fulfill goals. Individuals such as supervisors, CEO's and directors are monitored less, allowing for a decrease in a check-and-balance system and a greater ability for corruption to occur (Sligte et al., 2011).

Organizational corruption is defined as the misuse of power for organizational or personal gain (Sligte et al., 2011). Individuals in higher positions in organizations may dehumanize subordinates that allow for taking advantage of others with little moral cost (organizational corruption) (Sligte et al., 2011). Corruption in an organization may be fertilized due to the perception of power.

Those experiencing power also are less conformed to social sanctions or communal agreed scripts for behavior (Whitson, Liljenquist, Galinsky, Magee, Gruenfeld & Cadena, 2012). Observable behavior in past research has shown that those experiencing power align this behavior closely with their current internal state (Whitson et al., 2012). Aggression retaliation targets with high status also provide perceptually stronger excuses to not retaliate as compared to those with neutral or low status, as their provocation is not likely justified (Miller et al., 2003). Cognitive resources used for constraint, such as self-regulation, are decreased in an individual experiencing power and they recall less information that is goal-constraining as they script out possible scenarios for their behavior (Whitson et al., 2012). It could be possible that less awareness of constraints may reduce self-awareness. Possibly power may remove the ability for transcendence, the ability to see beyond the immediate situation (Baumeister et al., 1994). Transcendence is needed to engage self-regulation and monitor actions to see if they are in line with current self-standards. Without transcendence, missregulation of current affect is likely to occur.

The present research predicts that those individuals experiencing power and self-regulation depletion will score highest on measures of negative affect scored by the Linguistic Inquiry Word Count (LIWC) (Tausczik & Pennebaker, 2010) and the Word Completion Task (Anderson, Carnagey & Eubanks, 2003) as compared to those in the no depletion and no power

condition, the power only condition and the depletion only condition. As power is suggested to bolster goal pursuit and goals are likely to be parallel with an individual's internal state, those depleted combined with a provocation should have less willpower to inhibit aggressive behavior. It is also suggested that individuals scoring high in the Displaced Aggression Questionnaire (Denson, Pedersen & Miller, 2006) will score higher on the trait Self-control Scale (Tangney, Baumeister & Boone, 2004). Those individuals who have been involved in a displaced aggression mass shooting such as the Aurora, CO theatre shooting have displayed great self-control in their behavior during planning and implementation of their goal. Results by those primed with power are predicted to write more words (physical count) as compared to those not primed with power. Those with the perception of more power do not show a lack in performance and performance of the evaluation task may likely have more words as power is suggested to stimulate generalized executive functioning (DeWall, Baumeister, Mead & Vohs, 2011).

Method

Participants

The study included 107 participants, currently enrolled as undergraduate students. Included in the study were 85 participants between the ages of 18–20 and 22 participants were aged 21 and over with 67 female participants and 40 males. All participants were allocated partial course credit for their participation in this experiment.

The study is a 2 x 2 factorial ANOVA paradigm, involving four conditions, (self-regulation no self-regulation) X 2 (power prime, no power prime). The conditions are labeled as: no self-regulation depletion and no power prime (n=28), depletion of self-regulation and no power prime (n=25), no self-regulation depletion and power prime (n=27) and depletion of self-regulation and power prime (n=24).

Materials

Questionnaires. Each participant completed two surveys/questionnaires at the beginning of the experiment. One survey was The Displaced Aggression Questionnaire (DAQ) (Denson et al., 2006) and measured the participant's trait displaced aggression (Appendix A). The second survey was a scale that measures specific personality traits for trait self-control (SCS) (Tangney et al, 2004) (Appendix B).

Self-regulatory depletion manipulation. All participants viewed a 9 min 30 s video clip from the PG-13 rated movie Never Been Kissed (Barrymore & Gosnell, 2002) that induces emotion. In both self-regulation depletion conditions, participants were asked to suppress or stifle emotions while viewing the movie. This manipulation has reliability and validity for depleting self-regulatory resources (Schmeichel, Vohs & Baumeister, 2003). While viewing the movie, a bag of popcorn is visible next to the viewing screen. In both self-regulation depletion conditions, participants are asked to refrain from eating any of the popcorn no matter if future directions from the computer suggest partaking. Resisting eating food has reliability and validity for depletion of self-regulatory resources (Stucke & Baumeister, 2006). During the movie, text interrupted the screen three times and a question about the popcorn was asked (i.e.: "Haven't you tried the popcorn yet?", "How is the popcorn?", "Love the salt taste of the popcorn?"). This prompt is to remind the participant that the popcorn is present. If the participant is unaware of the popcorn's presence, self-regulation resources may not be depleted (Kaplan & Berman, 2010). This prompt is also to simulate task switching or attention switching which is also suggested to deplete self-regulatory resources (Kaplan & Berman, 2010).

Provocation. Participants were asked to complete 10 anagrams within a 5-minute time frame to simulate a project or task in the workplace and during the anagram task, at three

different times, a provocation from their supervisor interrupted and came across the screen ("Aren't you done yet?", "Can't you figure these out?", "I bet you did not figure them out!"). Only 5 of the anagrams were solvable to simulate that some work tasks can and are completed and other work tasks are not (Appendix C). Unsolvable anagrams have reliability and validity of producing frustration (negative affect) (Baumeister et al., 1998). The time limit simulated work tasks and goals that are time oriented. All four experimental conditions experienced this provocation manipulation.

Power. The concept of power was only introduced in two experimental conditions. Participants were told that they have the qualities to be a manager and supervise others as stated earlier. The power manipulation procedure used is derived from the power design manipulation used in Galinsky, Gruenfeld and Magee (2003). In the other conditions, participants are told they are average employees that are on time to work and get their jobs done (Appendix D).

Aggression measures. A word completion task (Anderson et al., 2003) was used to assess the completion of words. A four second time limit on each of the 31 words was used for the first 30 participants. The time limit is to reduce purposeful/explicit thinking and to encourage the pulling of word completions implicitly. Due to low completion rates, the task was altered. The remainder of the participants (71) did not have a time limit and had to complete each word before continuing onto another word. An example of a word on this task would be "H _ T." The participant can choose to complete this word as neutral, "HAT" or aggressively as "HIT." This measure only includes those words that can be completed as neutral, non-words, ambiguous or aggressive (Appendix E).

An aggression measure using the Linguistic Inquiry Word Count that counts and categorizes words into meaningful groups (Tausczik & Pennebaker, 2010) was used to assess a

co-worker review questionnaire filled out by the participant. The questions ask about a co-worker and their perception of skills that the co-worker might/might not have. The participant was told that this is a peer assessment to see if the co-worker qualifies for a different position. The questionnaire states the there are a few attributes about this person that stick out in your mind. Think of an individual that you have worked with in the past that may fit this description. It is suggested that the current affect of the participant will guide them to think of an individual that is congruent with this affect. The words were counted for physical count and assessed for negative emotions/affect ("LIWC negative"). Negative affect biases have a suggested relationship with aggression (Verona, Partrick & Lang, 2002; Baumeister & Boden, 1998).

Procedure

Upon arrival, participants were randomly assigned to one of the four conditions. Four different cubicles with computers were used in this study. The cubicle was set up with the needed equipment, assignment of condition and surveys before the participant arrived. As the participants arrived at the laboratory, they were escorted to an unoccupied cubicle. Participants were thanked and instructions regarding the experiment were given, including starting with the informed consent.

A *dual-task* paradigm was used in the self-regulation depletion conditions (Vohs et al., 2008; Baumeister et al., 1998; Muraven, et al., 1998). Participants first engaged in one task that depletes self-regulatory resources immediately followed by a second task that will need the use of self-regulatory resources. After filling out the informed consent, participants were told to start the computer portion of the experiment. The first screen in the experiment involved demographic questions. The third screen asked them to start on the paper and pencil questionnaires identified in the oral directions (see Appendices A and B).

All participants started out as described above. In the no self-regulation depletion condition and no power prime (control) (see Appendix D), participants watched a movie clip and were told to view it like any normal movie they have seen, expressing emotion if they wanted or needed to. A bag of popcorn was visible and the participant was told to partake if they wish. The participant then engaged in the provocation task involving anagrams (depletion of self-regulation) and supervisor input (provocation) (see Appendix C). The participant was then told that the questionnaires implemented in the beginning of the experiment suggest that they possess qualities to be a good average employee (non power condition). This manipulation was followed by an evaluation of a co-worker applying for a new position (paper and pencil) (see Appendix F). The evaluation was counted for the numeric number of words and for the amount of negative affect. The word completion task was the last task completed by the participant and assessed to see if the words completed by the participant were labeled as either aggressive, ambiguous, non-words or neutral (see Appendix E).

In the self-regulation depletion and no power condition, participants watched the same movie clip as the other conditions but were asked to suppress any emotion they might feel during the clip. This task should deplete self-regulatory resources. During the clip, a bag of popcorn was in view and the participant will be advised to not ingest any of the popcorn (concurrent self-regulation depletion with the movie clip). This concurrent depletion should not be considered a second sequential depletion task, as the depletion is not occurring at different periods of time, but the same time. This may deplete the participant at a faster rate as they are pulling more self-regulatory resources at one time. The participant performed the same anagram task (2^{nd} task of self-regulatory depletion for this experimental condition) and supervisor provocation as the previous condition (all conditions perform this task with provocation). Following the

provocation, the participant experienced the same non-power condition as the described above. The co-worker evaluation and word completion task was identical to the previous explained condition, including scoring.

The no self-regulation depletion and power prime experimental condition involves the movie clip with no suppression of emotion and partaking of eating popcorn (if the participant wanted to). The participants had the same anagram task (1st and only task of self-regulatory depletion in this condition) and supervisor provocation as all the other conditions. The participant was exposed to a power manipulation and told that the questionnaires filled out earlier in the beginning of the experiment show that they have the potential to be a great manager, including making decisions about pay, directing employees, evaluation of employees and bonus amounts of those ranked lower than you in the company. The evaluation of the co-worker and word completion task followed and scoring will be the same as the other two conditions.

The final condition is self-regulation depletion and power prime. Participants in this condition experienced both, depletion during the movie and during the anagram task. Also the power prime was experienced as described in the previous condition. All the questionnaires, evaluations and aggression measures were duplicated from previous conditions, as these measures were controlled to be the same in all conditions. The SCS was counterbalanced as some questions were reversed scored. The measures were all performed in the same sequence for all conditions.

Results

An one way ANOVA was performed between the experimental conditions and each of the criterion variables, DAQ, SCS, aggressive word count from the word completion task and the

LIWC aggressive word count. The ANOVAs showed no significance for main effects for each of the criterion variables ($Fs < 1$, *ns*). Homogeneity of variance was not violated in all four of the ANOVAs. Post hoc analyses, Turkey and Scheffe were conducted and no significance was found (sig > .05). These results suggest that the criterion variables DAQ, SCS, aggressive word count from the word completion task and the LIWC aggressive word count are not affected by the predictor experimental condition.

The criterion variable of emotional type with two levels, positive emotion and negative emotion, as defined by the LIWC was analyzed by the predictor of experimental condition containing four groups. The 2 within (positive emotion, negative emotion) and 4 between (experimental condition 1-4) MANOVA, $F(3, 103) = .77$, $p = .516$, $\eta 2 = .022$, demonstrated no significant differences between subject effects for the four groups of experimental condition. Experimental condition (1-4) by emotional type (positive emotion, negative emotion) within subject effect MANOVA, $F(3, 103) = 1.86$, $p = .142$, $\eta 2 = .051$, showed no interaction. The within-subject effects of the emotional type was significant, $F(1, 1304.35) = 309.49$, $p < .001$, emotion was uniformly more positive regardless of experimental condition (Table 1).

Although no relationship was found involving interactions of main effects, analyses were performed to satisfy hypotheses. A *t*-test analysis was conducted on hypothesis 1, which suggests that those participants that experienced power and self-regulation depletion will score highest on measure of negative emotion/affect scored by the LIWC and also the Word Completion Task as compared to those in the other conditions. No significance was found on the LIWC measure of negative emotion/affect, $t(105) = -.389$, $p = .689$, between those in the condition that experienced the power prime and self-regulation depletion and other 3 conditions. Results were similar for analysis involving the Word Completion Task and the power

experience/self-regulation depletion condition and the three remaining conditions, $t(99) = .541$, $p = .59$.

Correlation analysis was implemented to analyze hypothesis 2 that suggests individuals scoring high on the DAQ will score high also on the SCS. No relationship was found between the DAQ and the SCS, $r(93) = -.045$, $p = .668$. Hypothesis 3 suggested that those primed with power are predicted to write more words as compared to those not primed with power. Results suggest no relationship between those participants primed with power and those not primed in the amount of words they wrote, $t(105) = -.529$, $p = .598$. There are many possible reasons for the presented results and design changes could help lead to significance.

Discussion

Stated earlier, self-regulation resources are finite and in a state of ego depletion resources may not be available to refrain from displaying aggression (Vohs et al., 2012). Power works to bolster goal pursuit (Galinsky et al., 2003) and behavior to obtain these goals align with the individual's current internal state (Whitson et al., 2012). If the individual is provoked, had negative affect due to frustration, depletion due to earlier use of self-regulation and the perception of power, aggression may be performed. Finding ways to decrease aggression may work to produce higher revenue for businesses if relationships involving self-regulation displaced aggression and power can be found.

Evident in the results, there was no significance found in the analysis of the hypotheses. There could have been many reasons for this. The choice of popcorn was used to limit the amount of glucose as compared to candy that is suggested to boost self-regulatory resources temporarily. There is no direct evidence that popcorn reduces the boost of temporary self-regulation and this may have an impact on the results as popcorn is considered a carbohydrate

and the body may treat it the same as sugar. Popcorn may also not be a food of choice for a participant and therefore not deplete self-regulatory resources as suggested. The participant may not crave or desire the popcorn and self-regulation will not be used to curb desire as the desire is not a part of the equation. A cultural assumption may not have been met by using popcorn. Although an individual raised in the United States may not like popcorn, it is the conditioned smell of fresh popped popcorn and movie that is tied together and should allow for similar or same affect to be felt when experiencing either event (movie or popcorn). So even though the participant may not like popcorn, most American's like going to the movies, therefore have a conditioned response to the popcorn. Participants that have not been raised in the United States may not have this conditioned stimulus and this could have had effects on the study results.

Those individuals that are on a diet and have a higher goal to not eat may have used self-regulatory resources to refrain from eating the popcorn even though they are told that they are allowed to eat it. This may affect the results of the no depletion conditions as they are actually depleting resources. During the movie, it was suggested earlier that participants could have been depleted faster due to having to refrain from feeling affect during the movie and for having to refrain from eating the popcorn at the same time. Depletion and the use of self-regulatory resources require the behavior of attention. A participant is only able to pay attention to one event/object at a time, therefore it is likely that depletion occurred at the same rate as if only one depletion manipulation was taking place. This is due to the ability of attention on only one of the manipulations at a time even though the participant may be task switching from one manipulation to the other. The act of task switching may aide to depletion but depletion is not likely due to the presence of dual manipulations occupying the same time.

Depletion resources of participants were not equal entering the experiment and individual differences in the amount of self-regulatory resources were not been taken into account. All participants participated in the experiment during the hours of 11:00 AM until 4:00 PM. A control can not be put on the activity participants were involved in before the study. These activities may effect results and add to error by the ability or non-ability to process manipulations. Resources available could vary greatly during the day and may have affected results. These resources may be affected by the caloric intake the participant has consumed prior to participation as glucose levels are suggested to affect direct attention tasks (Kaplan & Berman, 2010). Participants may not have the resources to effectively participate in the experiment, as attention is needed to focus on the instructions and manipulations to take place. Self-regulatory resources may not be depleted due to the use of more automatic processing, which is suggested to not deplete resources (Kaplan & Berman, 2010). The participant may have his/her mind on other things, such as a test, or a fight with a boyfriend/girlfriend/parent, and therefore resources are allocated to these things and not on the experiment. Therefore, the individual is not using self-regulatory resources on the experiment; instead they are using more automatic processes to perform study tasks by not following directions or following only partial directions.

The depletion manipulation may not show an effect due to the participant's goals not congruent with the experimenter's goals. If a participant does not align his/her goals with the experimenter's and has a higher goal such as to meet a friend immediately after the experiment, attentional resources needed to participate in the experiment may be used on the higher goal and not the goal at hand. In order for the manipulations to have a possible effect, the participant needs to pay attention to the tasks involved in the experiment. Watching a movie involves voluntary attention and the tasks involved may not have been explicitly performed. The

individual must use self-regulatory resources and actively engage themselves to perform the needed tasks for the experiment. If automatic processing is involved, manipulation may not have an effect. Although the participant may be performing the experiment, depletion needs attention and if the participant's attention is on the goal to get the experiment finished to see their friend, results would likely be skewed.

Manipulation checks were not designed into the study. This omission does allow for error as the participant may not have experienced the manipulation to affect the study. The participant may also have experienced a different effect other than the proposed ones. Asking the participants how they pictured themselves in the power/non-power condition would have validated the manipulation and possibly forcing those participants who have not performed the manipulation to do so at that time. Without checks and possibly cameras to make sure the participants were avoiding or not avoiding the popcorn, error is likely.

Some participants after the experiment were randomly asked about how the experiment went. Some stated that the non-power condition caused negative affect instead of implementing neutrality. When the manipulation stated that, "The current data collected shows that you may not have the characteristics to be a manager. You have qualities of a typical employee where you do your job and complete goals. Co-workers would most likely evaluate you as a good worker and have the qualities needed to perform the responsibilities your position demands. Most likely you would take the average number of sick days and vacation days. You have average communication skills and are able to operate the computer system successfully," the participant felt dissonance as this was not congruent with their self-identity. It also caused some to feel sad that they were not "good enough" to be a manager. This unaccounted negative affect likely skewed results.

The instructions stated for the employee review, "Think of an individual that you have worked with in the past that may fit this description." The idea for this was to allow the participant to reconstruct memories of an individual that they previously worked with that was congruent to their current affect state. Thus an individual that was depleted, provooked and frustrated would likely reconstruct memories that were congruent to individuals they had worked with that were in line with this negative current affect. Due to the majority of the participants under the age of 25, it may be likely that many have worked few jobs and some may have not worked or had a job at all. This limited the pool of reconstructed memories and thus the participant may not have the option of reconstructing memories that are congruent to current affect as no memories with this affective criterion may exist. A more diverse aged population of participants should have been used to avoid such limitations and bring greater diverse perceptions.

The instructions or the perception of the instructions themselves can produce negative and positive affect, not just the desired or induced effect the meaning of the instructions gave. If instructions are not understood correctly, if they are not understood at all or the participant does not want to do the task that is asked this may allow for negative affect, possibly frustration, has not been calculated into the experiment, thus error. If the participant likes to read they may experience positive affect not calculated or controlled for and this would apply to the reverse. If the participant does not like to read or has a hard time reading English as English is not their primary, the reading itself may cause negative affect.

This study was conducted at the end of the semester and thus participants may not have wanted to participate in the study but had to as part of their semester grade. This may suggest that the participants were interested in the goal of their participation points and not the goal of

investing in experimental science that may alter society (Casa de Calvo & Reich, 2007). As the examiner, use of the psychological concept of in-group/out-group was used starting on the fourth day of data collection to try to remedy this participation point goal. The first thing that was said to the participant after sitting in the cubicle was a thank you followed by some friendly language stating the need to get out of here (school) and on with life. As most participants can relate, they should have perceived the experimenter as part of their in-group, congruent with their goal of finishing school and getting out of college. This behavior was to support participant goal alignment, shaping participant goals to be congruent with the experimenter's goals.

In future studies involving this design, participant numbers may have to be raised. This would inflate the power of the study as one ANOVA analysis (experimental group X negative emotion words LIWC) showed low power. Post hoc power analysis using the program *G*Power* (Erdfelder, Faul & Buchner, 1996) detected that the previously stated ANOVA had low effect (f=.14, Cohen, 1977) and the other three ANOVAs have trivial power and effect (f< .1). The between-subjects MANOVA power to detect the effect was .022, only accounting for slightly over 2% of the variance of the IV's effect. Within-subjects (experimental condition by emotional type) power to detect the effect was .051, accounting for approximately 5% of the variance due to the treatment effect. The within-subjects effects of emotional type (two levels, negative type and positive type) showed $\eta^2 = .75$, accounting for 75% of the variaince due to the treatment effect. Raising power, by participant numbers, could also help control extraneous variables that cannot be controlled by the experimenter such as the amount of individual self-regulation, events that used self-regulatory resources earlier in the day and the amount of food (glucose) intake. Having an equal amount of participants in each of the experimental conditions could have helped meet parametric assumptions. Although the analyses performed on the

collected data involving the main effects (4 ANOVAs) met homogeneity of variance, the analyses performed on the hypotheses did not. Since all analyses also showed no significance, increasing participant numbers could raise power to find a relationship.

Studies involving self-regulation, displaced aggression and power may wish to look at a possible mediating or moderating variable of trust. Trust may have the ability to allow a perception to be positive although negative affect is currently felt toward that individual or their behavior (Tsui & Ashford, 1994). This variable of trust may need to be controlled for in future settings as it could implement forgiveness of the behavior. By having a video or interview of an individual that is looking to apply for a new position in the company should control for differences in the individual the participant is imagining in his/her mind, as each participant is seeing/imagining the same individual. This change should also control other extraneous variables such as previous experience/interactions and perceptions the participant may have reconstructed about the individual as the person in the video the participant has not worked with before and help decrease error.

In conclusion, there was not a relationship found between self-control, displaced aggression and power in this study. Many instances of error were detected and if remedied may bring different results. A simpler study design may yield positive results due to less error and more control. Independent studies researching each variable alone and then replicating with the addition of one variable at a time is suggested. In time, with future research, the possibility of finding ways to eliminate or stifle displaced aggression and raise self-regulatory resources in those with low or high perception of power may help raise production and ultimately revenue in many companies.

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Appendix A (two pgs)

Likert scale- 1 (not at all) to 6 (very much)

1. I keep thinking about events that angered me for a long time

2. I get "worked up" just thinking about things that have upset me in the past

3. I often find myself thinking over and over about things that have made me angry

4. Sometimes I can't help thinking about times when someone made me mad

5. Whenever I experience anger, I keep thinking about it for awhile.

6. After an argument is over, I keep fighting with this person in my imagination

7. I re-enact the anger episode in my mind after it has happened

8. I feel angry about certain things in my life

9. I think about certain events from a long time ago and they still make me angry

10. When angry, I tend to focus on my thoughts and feelings for a long period of time

11. When someone makes me angry I can't stop thinking about how to get back at this person

12. If somebody harms me, I am not a peace until I can retaliate

13. I often daydream about situations where I'm getting my own back at people

14. I would get frustrated if I could not think of a way to get even with someone who deserves it

15. I think about way of getting back at people who have mad me angry long after the event has happened

16. If another person hurts you, it's alright to get back at him or her

17. The more time that passes, the more satisfaction I get from revenge

18. I have long living fantasies of revenge after the conflict is over

19. When somebody offends me, sooner or later I retaliate

20. If a person hurts you on purpose, you deserve to get whatever revenge you can

21. I never help those who do me wrong.

22. When someone or something makes me angry I am likely to take it out on another person

23. When feeling bad, I take it out on others

24. When angry, I have taken it out on people close to me

25. Sometimes I get upset with a fiend or family member even though that person is not the cause of my anger for frustration

26. I take my anger out on innocent others

27. Then things don't go the way I plan, I take out my frustration on the first person I see

28. If someone made me angry I would likely vent my anger on another person

29. Sometimes I get so upset by work or school tht I become hostile toward family or friends

30. When I am angry, I don't care who I lash out at

31. If I have had a hard day at work or school, I'm likely to make sure everyone knows about it

Appendix B
Likert scale- 1 (not at all) to 6 (very much)

1. I am good at resisting temptation

(R) 2. I have a hard time breaking bad habits

(R) 3. I am lazy

(R) 4. I say inappropriate things

(R) 5. I do certain things that are bad for me, if they are fun

6. I refuse things that are bad for me

(R) 7. I wish I had more self-discipline

8. People would say that I have iron self-discipline

(R) 9. Pleasure and fun sometimes keep me from getting work done

(R) 10. I have trouble concentrating

11. I am able to work effectively toward long-term goals

(R) 12. Sometimes I can't stop myself from doing something, even if I know it is wrong

(R) 13. I often act without thinking through all the alternatives

(R)=Reversed items

Appendix C

Only half of the anagrams are solvable.

The screen will ask participants:
You are a hypothetical employee at a large corporation and your hypothetical boss has given you this task to do. This boss asks you to please solve the anagrams by rearranging the letters to make common words of the English language and tells you that some may be difficult and some individuals have had difficulty solving them. This task is time sensitive and you will have 5 minutes to complete all 10 of these anagrams as your 'boss' needs this done ASAP.

t r a s _____

s e h e c e _____

z e r g y s _____

o m g h t s _____

r a m r k e _____

b l k d m a _____

h a n p s h t _____

w o t l e _____

a t e o r s t _____

r k e d s w _____

Interrupted 3 different times: one @ 2 min. 1 @ 3 min 30 sec. & 1 @ 4:30
Supervisor: Can't you figure these out?

Supervisor: Come on, aren't you smarter than a 5th grader?

Supervisor: I bet you did not figure them out!

Appendix D

In experimental condition 2, participant will read the following:

From the data we have collected I think it shows that you have characteristics to be a great manager. As a manager, you would be in charge of setting goals and creating the standards by which work your employees' work is to be evaluated. In addition, the survey states that you would be a great evaluator of your employees. The evaluations you provide to your supervisor, directly affect how much bonus money your employees will receive. As a manager, which the surveys say you would be a great one, responsibilities would involve directing others, evaluating employees and determining rewards your employees would receive. You would be able to tell people what they need to do and control the goals of your department.

In experimental condition 1 and the control condition the participant will read the following:

The current data collected shows that you may not have the characteristics to be a manager. You have qualities of a typical employee where you do your job and complete goals. Co-workers would most likely evaluate you as a good worker and have the qualities needed to perform the responsibilities your position demands. Most likely you would take the average number of sick days and vacation days. You have average communication skills and are able to operate the computer system successfully.

Appendix E
(two pages)

1. s p e a __

2. k l __ __

3. h __ r __

4. c h o __ e

5. a t t __ c __

6. s h o __ t

7. s t r __ __ e

8. b __ r n

9. p __ __ s o n

10. s n __ r e

11. h __ t

12. s m __ c k

13. s m __ __ e

14. d r __ __ n

15. a n g __ __

16. h a __ e

17. c __ t

18. w a __

19. f __ m __

20. s l __ p

21. r __ p e

22. w __ __ k e d

23. en__age

24. prov___e

25. r__de

26. b___t

27. s___y

28. sm__ck

29. __unch

30. a__use

31. s__ash

Appendix F

The participant will be told: An outside company who has no ties or affiliations to the company will review this evaluation. Several of the employees in your department have been asked to write a review of a colleague looking to obtain a new position in the company and one of them picked was you. Write several sentences, at least 4, for each question. Imagine this employee as an average co-worker and does their job. There are a few attributes about this person that stick out in your mind. Think of an individual that you have worked with in the past that may fit this description. Please fill out the evaluation focusing on this individual.

What qualities, if any, does this person have that will qualify/not qualify them to supervise others?

Does this applicant have respect for others? Give an example.

Are leadership qualities evident in this individual? Why or why not?

If you needed help on a project you are working on would you ask for help from this individual? Why or why not?

Would this person be someone the company would want representing their name in the business world? Why or why not?

Table 1

Mean Scores of Experimental Conditions With Affect Type

Cell Means and Standard Deviations

Variable .. pos_emot Positive emotional words LIWC

FACTOR	CODE	Mean	Std. Dev.	N	95 percent Conf. Interval	
Exp_cond	1	6.526	2.654	28	5.497	7.556
Exp_cond	2	5.555	2.156	26	4.684	6.425
Exp_cond	3	6.634	2.684	28	5.594	7.675
Exp_cond	4	5.509	2.800	25	4.353	6.665
For entire sample		6.081	2.604	107	5.582	6.580

Variable .. neg_emot negative emotion words LIWC

FACTOR	CODE	Mean	Std. Dev.	N	95 percent Conf. Interval	
Exp_cond	1	1.138	1.206	28	.671	1.606
Exp_cond	2	1.280	1.509	26	.671	1.889
Exp_cond	3	.843	1.127	28	.406	1.280
Exp_cond	4	1.189	.853	25	.837	1.541
For entire sample		1.107	1.193	107	.879	1.336