THE CULTURAL NICHE OF SUBLIMATED CREATIVITY

BY

EMILY KIM

THESIS

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Master’s Committee:

Professor Dov Cohen, Chair
Assistant Professor Jesse Preston
ABSTRACT

The dearth of empirical research on sublimation may be demonstrating the inherent difficulty scholars in the past have experienced in capturing the process of sublimation in the lab (Baumeister, Dale, & Sommer, 1998). Given the suspected difficulty of empirically capturing the process of sublimation, it was imperative to line up powerful situational and cultural determinants that could be theorized to elicit sublimation. While the process of sublimation (if it exists) is not supposed to be specifically Protestant, based on our review of the ascetic Protestant work ethic and contrasting theologies in the Catholic and Jewish traditions, we hypothesized that sublimation as an ego-defensive process would be easier to evoke in Protestants, as compared to Catholics and Jews. In a previous study conducted in our lab, Protestants (but not Catholics or Jews) channeled forbidden lust into creative work (Kim, Zeppenfeld, & Cohen, 2013, Study 2). In the current study, we replicate and extend this finding by providing further independent experimental evidence for sublimation and demonstrating that the process of sublimation is not limited to taboo sexual desires but also extends to unacceptable aggressive desires. In the present study, Protestants who had to suppress their anger were able to channel that anger into producing more creative art, while Catholics and Jews under the same conditions did not show this effect.
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CHAPTER 1
INTRODUCTION

1.1 Weber’s Synthesis (1905/2002) of the Protestant Ethic and the Spirit of Capitalism

For Max Weber, a German sociologist, the spirit that imbued modern capitalist enterprises had its origins in the Protestant Reformation of sixteenth century Western Europe. Weber’s theories were dually informed by two big figures of early Protestant theology, Martin Luther and John Calvin. In the sections that follow, I will briefly discuss Luther and Calvin’s contributions to Protestant theology, and highlight ideas that are relevant for building Weber’s arguments about the Protestant ethic as a fuel for developing the capitalistic spirit.

Luther’s Doctrine of Vocation

*Devotion to office is devotion to love, because it is by God’s own ordering that the work of the office is always dedicated to the well-being of one’s neighbor. Care for one’s office is, in its very frame of reference on earth, participation in God’s own care for human beings.*

(Wingren, 1994, p. 9, commenting on Luther’s doctrine of vocation)

Luther believed in the idea of “calling,” which effectively transformed work from what was once considered a necessary evil into a moral imperative (Sanchez-Burks, 2002; Weber, 1905/2002). Luther preached the importance of working hard at one’s station in life. According to Luther, the differential worldly values and statuses awarded to earthly jobs did not matter because each person’s “calling” in life was directed by God, who personally desired and assigned each person to the station in which he or she was currently residing (Wingren, 1994). This idea was further developed by Calvin, who preached that the highest, most noble, and most moral achievement possible for any given individual was thus to be diligently and honestly devoted to one’s occupation on earth (Berg, Grant, & Johnson, 2010), thereby ensuring the favor and the grace of God, and carrying out one’s just duties as God’s faithful child. Everyday work,
now imbued with spiritual meaning, presented an opportunity in which Protestants could
demonstrate their faith in God through hard work in capitalistic ventures (rather than performing
sacraments at church, for instance), where hard work led to wealth through increased profit.
Protestants construed this wealth as the product of God’s grace, which meant it should not be
expended carelessly without a clear purpose. Thus, the wealth obtained from working hard at
one’s calling was carefully reinvested in more entrepreneurial opportunities, which led to even
more wealth for the faithful Protestants (Jones, 1997; Weber, 1905/2002). As Jones (1997) put it,
“piety paved the way for material success” (p. 762). Many studies have observed the Weberian
model of the Protestant work ethic leading to increased emphasis on the importance of hard work
(Greenberg, 1977, 1978; Tang, 1990; Giorgi & Marsh, 1990) and higher levels of productivity
(Merrens & Garrett, 1975; Ganster, 1981).

While there are many works supporting Weber’s thesis, it is, of course, not without
controversy. It is obvious, for instance, that the Protestant work ethic is not a necessary
condition for productivity and hard work – one does not have to be Protestant to be productive in
one’s work. In fact, strong work ethics can be found in places where there are relatively few
Protestants (Harrison & Huntington, 2000; Sowell, 1981, 1997), and these studies show that
there is no significant occupational status difference between Protestants and Catholics, contrary
More importantly, the causal claim of the Weber’s argument (i.e., Weber’s claim that the ascetic
Protestant ideology played a causal role in the development of capitalism in northern Europe) has
been the topic of a longstanding contention among historians, economists, and sociologists.
Some have argued, for instance, that capitalism had already been a growing force even before the
Protestant Reformation, and that it would have taken over as the economic downward force in
northern Europe with or without the role played by ascetic Protestants (e.g., Tawney, 1926). However, while the flickering embers of capitalism may have been steadily growing in Northern Europe, it seems plausible to argue that the teachings of the Reformed Church (the quasi-religious status accorded to work and the theology of limited atonement) allowed them to develop into an a large-scale fire of capitalist movements in Germany and Northern Europe. While Weber’s theory is not without criticisms, it does seem to have captured an important social and economic phenomenon that could be traced back to the beginning of the Protestant Reformation.

Along with the newly formed and religiously imbued idea of a “calling” which transformed everyday work into a moral imperative, the Reformation pushed forward a radically new way in which the religious adherents found solace in the Christian belief: The Church was no longer an institution capable of dispensing grace and no longer a distributor of divine goodness and favor; instead, a lone individual was solely responsible for performing acts worthy of repentance and demonstrative of gratitude of the highest form (Jones, 1997). Performing sacraments was no longer an objective signature of one’s salvation; before God, there stood an isolated individual who had a concrete means of demonstrating his or her salvation through conscientiously working hard at one’s calling, one’s station on earth as spiritually dictated by God.

Elect or Reprobate? – The Origin of the Ascetic Productivity

*Idle hands are the devil’s workshop.*
– English proverb

This individualistic orientation toward faith and spiritually revamped meaning of work set forth by Luther was a fertile ground across which John Calvin was able to spread his ideas of ascetic Protestantism and the doctrine of predestination. Weber (1905/2002) argued that the
Protestant work ethic reached its purest form in the second wave of the Reformation, during which Calvin spread his ascetic Protestant theology (Calvinism). This theology later diffused throughout other ascetic Protestant denominations, including Methodist and Baptist sects. Calvin’s theology had several distinct doctrines on salvation and the grace of God that set it apart from mainstream Lutheran belief, in how it psychologically induced its adherents to work, and work hard. There are two Calvinist beliefs that are particularly relevant for the current discourse: 1) belief in total depravity – the human inability to will oneself to any spiritual good, as a consequence of the fall of man – and 2) belief in predestination – God’s eternal decree granting either everlasting life (salvation) or everlasting damnation through no merits of one’s own (the doctrines of unconditional election and irresistible grace). In Weber’s words, these two tenets of Calvinism, set in the background of the individualistic Protestant theology, generated “a feeling of tremendous inner loneliness” (p. 73, emphasis in the original) in each individual – a feeling that the entire responsibility of one’s salvation rested in oneself, that the path to salvation was inherently individualistic. There was no one and nothing that could help the individual in this quest to salvation – not the preacher, sacraments, the Church, and not even God, since Christ himself had died for the elect alone (per beliefs of predestination).

During the Reformation, when concerns relating to one’s salvation were among the chief and salient issues of the people, not knowing for certain whether or not one was saved and was part of the elect created certain feelings of anxiety. Since being a part of the elect could not be verified (ever), people were taught to exhibit behaviors as though they had been “elected” and strive for the subjective certainty of their election (Weber, 1905/2002); they were taught to dismiss any doubts because doubts were conceptualized as a temptation from the devil and lack of assurance as a result of insufficient faith and inadequate working of grace. Along with
developing the *subjective* certainty of one’s election, working hard at one’s calling was one of the only ways in which individuals could achieve some level of *objective* clarity about one’s election. People were pastorally counseled to tirelessly work at their callings in life, whatever it might have been, as one of the best means of obtaining a certain level of self-assurance that one had been called and included as part of the elect who would be given eternal salvation (Weber, 1905/2002). Tireless devotion to one’s calling was also promoted as one of the best possible ways of ridding oneself of religious doubt and assuring one’s state of grace (Weber, 1905/2002). This Protestant religious sentiment regarding ascetic productivity is well reflected in the following directive issued at the Methodist Conference of 1766: “We must never forget the first rule, ‘Be diligent. Never be unemployed for a moment. Never be triflingly employed. Never while away time; neither spend any more time at any place than is strictly necessary’” (as quoted in Myles, 1812, p. 118).

To summarize Weber’s synthesis of the Protestant work ethic, the following four tenets can be drawn:

1) Transformation of religion during the Protestant Reformation into an individualized experience and solitary spiritual path;

2) Belief in total depravity (humanity’s inability to desire any spiritual good without the grace of God) as an inherent consequence of the fall of man;

3) Sanctification of work as a religious calling (*beruf*) and station (*stand*) in life;

4) Belief in salvation limited to the predestined elect which led to the inevitable anxiety associated with the lack of certainty pertaining to one’s own status of salvation.

These four tenets were combined together to form a potent psychological cocktail in driving people forward to alleviate the anxieties associated with the uncertain status of their salvation.
Other branches of ascetic Protestantism (including Methodist and Baptist sects) developed from these Calvinist roots. Even as the hardline doctrines of predestination faded away, generalized anxieties about one’s salvation remained and the psychic need to be assured of one’s salvation combined with the sanctification of work in the idea of calling (beruf) continued to propel people forward, as feelings of depravity were harnessed into productive ends in glorifying God through tireless labor in spiritual callings.

1.2 Emphasis of Guilt in Judaism and Catholicism

*I’m an Irish Catholic and I have a long iceberg of guilt.*
– Edna O’Brien (novelist, playwright, and poet)

In contrast to the Protestant religious tradition, the Jewish and Catholic traditions appear to lack many of the critical components of the arguments established for the Protestant work ethic thus far. While Protestants are theorized to harness and channel their anxieties associated with their uncertain state of salvation into productive work in their callings (see critiques and supporting evidence in, for example, Giorgi & Marsh, 1990; Jones, 1997; McClelland, 1961; Novak, 1993; Weber, 1905/2002), the theology of the sanctification of work is generally lacking in Jewish and Catholic theologies (Weber, 1905/2002). The Protestant idea of a calling was first proposed by Luther during the Reformation and remains, to this day, as one of the few beliefs shared across many Protestant denominations.

While the ascetic Protestants – spiritual leaders and laypeople alike – found spiritual meaning and relief in industriousness within their chosen stations in life, be it inside or outside of the Church, by channeling the feelings associated with depravity into productive ends, ascetic Catholics could perform sacraments, such as partaking in the Eucharist or Communion and performing Reconciliation or Penance, and following rigorous regimes within the Church, temples, and monasteries. Therefore, the main difference between ascetic Protestants and ascetic
Catholics lies in the background in which such ascetic lives are conducted: while ascetic Catholics stayed within the four walls of the monastery, with such lives being reserved for the truly devout, separated from worldly affairs, Protestants took their ascetic approach to living outside of the Church, making it a discipline to be followed in the secular world rather than in an isolated religious community (Jones, 1997). As Weber (1905/2002) wrote, “the aim was thus to train the monk…to be a worker in the service of the kingdom of God, and also…to ensure the salvation of his soul” (p. 81).

The belief in total depravity is not found in the catechism of the Catholic Church nor in any Jewish teachings. Catholicism teaches that even though Adam’s original sin has deprived his descendants of humanity’s original holiness and justice, human nature has not been totally corrupted. Rather, the nature of humans is conceptualized as having been “wounded” in that it is “subject to ignorance, suffering, and the dominion of death; and inclined to sin – an inclination to evil that is called ‘concupiscence’” (405, Catechism of the Catholic Church). Characterizing human nature as wounded is affectively different from describing it as totally depraved/corrupted. The Catechism of the Catholic Church also explicitly disagrees with the Protestant reformers’ teaching that Adam’s original sin has radically and completely perverted man and voided his free will, and that his inclination to do evil (concupiscence) is unconquerable. On free will, the Westminster Confession of Faith of 1647 (the Reformed Confession of Faith) says the following:

Man, by his fall into a state of sin, hath wholly lost all ability of will to any spiritual good accompanying salvation; so as a natural man, being altogether averse from that good, and dead in sin, is not able, by his own strength, to convert himself, or to prepare himself thereto. (Chapter 9, Clause 3)
Thus, the Catholic Church condemned the Protestant reformers’ teaching that the free will of man is lost and extinguished through original sin. Similar perspectives on human nature are shared in Jewish teachings. Perhaps the Jewish perspective on human nature is best illustrated by the famous story of Jonah in the Hebrew Bible. The story of Jonah is that of a human repeatedly falling short of God’s expectation of him (Jonah attempts to flee God’s directive and repeatedly becomes angry at God), and yet ultimately he repents and becomes better. In the biblical story, Jonah becomes one of the most influential of all prophets of his time, effectively converting the entire population of Nineveh. The story of Jonah has struck a chord with many Jews – it came to represent one of the central messages of Yom Kippur, in which God works with one’s propensity to disobey, commit sin, and even actively run away from God, eventually transforming one into devout follower of God. (Jonah have been one of the most popular Biblical names for Jewish males for many decades.)

Perhaps due to this less severe view of human nature (e.g. Greeley, 2000), both Catholic and Jewish traditions seem to implicitly acknowledge the cyclical nature of guilt and repentance: guilt leading to the desire and necessity to repent and the act of repentance ultimately leading to reconciliation. This process is embodied in the Catholic sacrament of Reconciliation and Jewish tradition of Yom Kippur. The Latin word sacramentum means “a sign of the sacred.” In other words, sacraments are outward and visible signs of God’s divine grace. As long as one is engaged in sacraments, one does not need to be anxious or worried about the status of one’s salvation, for performing sacraments in themselves are outward and visible signs of God’s grace working within the individual. There is no need for Catholics or Jews to work hard at their worldly occupations to obtain subjective certainty of their salvation – all that is required of them
is to engage in sacraments, behave morally, and when that fails, partake in institutions of forgiveness within the church or synagogue.

Guilt is a highly elaborated emotion in Jewish and Catholic cultural traditions. Actions that call into question one’s moral fitness are confessed, dwelled on, suffered for, repented, and, ideally, forgiven either by the person one has wronged or by God. Both Judaism and Catholicism have formal institutions and rituals that allow a person to atone for and repent one’s sins, as a part of catechisms and sacraments. From the Catholic and Jewish perspectives, God’s reconciling work does not happen in an instant; rather, it is a long, potentially painful journey that must first start with a heavy dose of guilt and remorse (A. Cohen, Malka, Rozin & Cherfas, 2006; Weber, 1910). This is known as the process of conversion in the Catholic tradition of the sacrament of Penance. Before one is able to confess and celebrate in reconciliation with God, one must engage oneself in the process of conversion: recognizing one’s transgressions, feeling remorseful about them, and finally resolving to change one’s ways as a consequence (DeGidio, 1983).

Similarly, within Jewish traditions, perhaps the best illustration of the formal institutions of guilt and repentance are embodied in the period from Rosh Hashana to Yom Kippur. From Hebrew, Yom Kippur is directly translated as a “day to atone” or a “day of atonement.” During this period, adherents of the Jewish faith prioritize making amends and seeking forgiveness from those they have wronged. As in the Catholic traditions of Penance and Reconciliation, the period from Rosh Hashana to Yom Kippur is a time for self-critical reflection. Jewish teachings on reconciliation are also unique in that they require adherents to repair the relationship committed against another person, before such sins are forgiven by God – Yom Kippur is said to atone only for the sins committed against God; for an individual to be forgiven of his or her transgressions
against another person, Yom Kippur does not atone until he or she appeases the injured party (Halbertal, 2011).

Thus, in response to moral failings and the resulting sense of depravity, Catholics and Jews are given formal institutions and rituals in which they can repent, confess, and atone for their sins and reconcile with others and with God, thus moving past their moral failings, similar to how the prodigal son returns to his father in the well-known Biblical parable. The process of conversion –experiencing the unpleasant sense of guilt and realizing that things are not right the way they are (“coming to one’s senses”) – is a necessary first step in repairing the relationship with God (and, if possible, the person one has wronged) through the Sacrament of Reconciliation (see also Walinga, Corveleyn, & van Saane, 2005 on Catholic guilt as oriented toward repair). Catholicism and Judaism’s greater emphases on communal practices (as opposed to the individualistic orientation toward faith seen in Protestantism) and on behavior and deeds (as opposed to beliefs), (Albertsen, O’Connor, & Berry, 2006; A. Cohen & Rozin, 2001; A. Cohen et al., 2005; Greeley, 1997; Sanchez-Burks, 2002) fit very well into the discussion of the role of guilt in promoting reparative actions after committing interpersonal breaches.

In summary of the comparison between Protestants vs. Catholics and Jews, the key distinction lies in the different cultural logics – the ways in which they choose (in liminal consciousness, a topic which will be discussed later) to perceive and psychologically deal with their transgressive desires and feelings of depravity. The main argument here is that while the cultural logic of Protestants will motivate them to harness and channel their feelings of depravity into productive work (per sanctification through work as in ascetic Protestantism), the cultural logic of Catholics and Jews will motivate them to dwell on the feelings of guilt first and then
atone and repent for these transgressions through reconciliation and penance rather than through production in the secular world.

1.3 Sublimation

Definitions of Sublimation

*A certain kind of modification of the aim and a change of object, in which our social valuation is taken into account, is described by us as sublimation.*

– Sigmund Freud

The year 1905 was a pivotal year in the history of thinking about defensive processes: Not only was Weber, a German sociologist, writing about the link between ascetic Protestantism and the emergence of the spirit of modern capitalism, but also Freud, a Austrian neurologist and psychiatrist, was beginning to conceptualize and write about the process of sublimation as a transformation of the instinctual drive, later reconceptualized as a defensive function of the ego.

While there is no single definition of sublimation, sublimation is generally conceptualized as a process that involves harnessing and redirecting unacceptable drives (which are either repressed or made consciously aware) toward an acceptable aim, usually involving some form of socially desirable or individually productive ends (Freud, 1905/2000; Freud, 1933; Gemes, 2009). In Freud’s later, more abstract formulization, sublimation was conceptualized as a protective ego function that served to channel the libidinal or aggressive energy into creative and productive ends such as artistic creation, humor, or devotion to one’s work. While there are other types of defense mechanisms that similarly redirect unacceptable impulses away from the actual target of those impulses (such as in reaction formation and acting out), sublimation is unique in that it not only redirects, but also unifies the competing drives and allows the ego to express a unified self, and also resulting in an elevated, socially desirable outcome.

Theoretical Derivations of Sublimation
There are several ways in which the psychological process of sublimation can be theoretically derived or approached. All describe a similar process, though they use slightly different explanatory metaphors.

Psychodynamic approach

In the traditional psychodynamic approach, sublimation fits nicely into the psychoanalytic depth metaphor: unacceptable sexual or aggressive drives are consciously suppressed or subconsciously repressed into the depth of the unconscious, and in the psychologically healthy and ideal case, are harnessed and redirected into acceptable and often laudable activities that are of a praiseworthy nature.

Thus, within the framework of the psychoanalytic depth metaphor, the process of sublimation may be captured in the redirected channeling of the unacceptable “drive,” which finds its way out in a seemingly unrelated, and often socially laudable, activity. Because of the many writings by Freud that emphasized the social value of the activity resulting from sublimation, the mainstream view among those who practiced psychoanalysis was that sublimation was an ideal objective of any successful therapy. Among psychoanalysts, spontaneous, or even therapy-induced sublimation was often seen as a necessary condition for full psychological health, as harboring unacceptable feelings and desires is common in psychologically healthy individuals, and these feelings and desires may need to be either dealt with or redirected (Gemes, 2009; Vaillant, 1971, 1993; Vaillant, Bond, & Vaillant, 1986; Vaillant & Vaillant, 1990).

Neo-behavioristic approach

Sublimation can be conceptualized as a special variant of displacement (displacement is defined as substitution, rechanneling, or transfer of troublesome and unacceptable affect and
desires with or onto a new object or drive) in which the new object or drive is not merely less troublesome and less anxiety provoking, but is also praised and valued positively (e.g., creativity or altruism). As displacement is a defensive psychological process that can be effectively conceptualized under a neo-behavioristic learning account, the process of sublimation (conceptualized as a special variant of displacement) can also be conceived of with a neo-behavioristic account.

Here, using neo-behavioristic terms, displacement occurs when the conditioned response (e.g., hitting your sister) to the conditioned stimulus (e.g., your sister has destroyed your science project) creates unbearable distress (e.g., the thought of hitting your little sister is detestable and you cannot stand to have such a thought or desire), the conditioned response gets inhibited. In place of the inhibited conditioned response, the thought or desire will be re-directed into a safer, less distressful and anxiety-provoking response (e.g., hitting your punching bag). When the dominant and conditioned response creates unbearable distress and anxiety and is thus prevented from occurring, the response that is the “next best thing” in responding to the stimulus will occur (Dollard & Miller, 1950, as conceptualized in Erdelyi, 1985).

The neo-behavioristic account of displacement and sublimation may be captured in Dollard and Miller’s (1950) conflict model. The model attempts to explain the region in which displacement and sublimation occur, in terms of the generalization functions (generalizable to stimulus, responses, or drives) of approach and avoidance tendencies and the response strength created by the competition between these two tendencies. In this model, an approach response tendency, which increases in strength as it gets closer to the goal, is opposed by an avoidance response tendency, which also increases in strength as it approaches the goal, but at a steeper slope. Within Dollard and Miller’s (1950) conflict model, displacement and sublimation should
occur at the point of maximal net strength of the resultant tendency (the difference between approach and avoidance tendencies).

**Information-processing approach (with the emphasis on computer analog)**

*Unconsciousness is a regular and inevitable phase in the processes constituting our mental activity; every mental act begins as an unconscious one, and it may either remain so or go on developing into consciousness.*

– Sigmund Freud (1915/1963, p. 53)

Dollard and Miller’s (1950) conflict model can also be updated to a computer-based information processing model (Erdelyi, 1985). In order to articulate the process of defense (including sublimation) using the information processing approach, it is helpful to review the research on preconscious processing, as the information processing approach relies heavily on this psychological phenomenon.

Preconscious processing theories involve the idea that before any kind of information (perceptual or conceptual) reaches consciousness, some kind of “pre-conscious” processing inevitably takes place before the processing continues onto the threshold of consciousness (Dijksterhuis, 2010). For example, following the analogy by Dijksterhuis (2010), when we “see” an object, we are not automatically aware of its conceptual category. Using a more concrete example, in becoming perceptually aware of a window, we first see panels of glass, a frame, and a sill; only after a certain amount of preconscious construction is done, are we consciously aware that it is a window.

As the “New Look” approach to perception (Allport, 1954; Bruner, 1957; Erdelyi, 1974) became more established, so did empirical demonstrations of preconscious processing. To review some of the notable works here, literature on perceptual defense, selective attention, and inattentional blindness can be discussed briefly. Research findings on perceptual defense suggest that the threshold for conscious perception is higher for objects/ideas/emotions that are
threatening or are considered “taboo” under normative social standards (Dijksterhuis, 2010). Further evidence on selective attention (Broadbent, 1958; Moray, 1959; Treisman, 1960) and inattentional blindness and change (Simon & Chabris, 1999) provided further evidence for preconscious processing, and empirically demonstrated that although we may perceive a lot of information, a notable amount does not reach the level of conscious awareness.

Motivational determinants of conscious perception thresholds come into play in constructing the generalized informational processing model of defense or repression (according to some, “defense” and “repression” are considered synonymous in Freud’s writings, see Erdelyi, 1985, p. 218), including sublimation. Using a flowchart that features various points in which an individual’s perceptual thresholds are tested, Erdelyi (1985) illustrates the information processing approach to repression and defense. The flowchart describes a cognitive model that contains internal and external “filters” or “decision nodes”: At various points in this model (conceptualized as “filters” or “decision nodes”), a presented piece of stimuli is prevented from further processing, if the amount of anxiety and emotional threat created is greater than that “bearable” to the perceiver at that given stage (the “current criterion of unbearability”), and the stimuli will cease to be processed (Erdelyi, 1985, pp 240-241).

The stimuli that is inhibited from this process that does not reach the threshold of conscious awareness nevertheless continues to exist as a disconnected idea, often unconsciously (Freud, 1892-1893, as cited in Erdelyi, 1985). The information that is screened and filtered out...

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1 Freud described the idea that was synonymously described under “defense” or “repression” as something that was intentionally barred from conscious awareness in general: “The distressing antithetic idea, which seems to be inhibited, is removed from association with the intention and continues to exist as a disconnected idea, often unconsciously, to the patient himself” (Freud, 1892-1893, p.122, as cited in Erdelyi, 1985, p. 218). Erdelyi (1985) argues that in Freud’s earliest writings, “repression referred to the (apparently) simple notion that some distressing wish, idea, or memory was forced out or kept out of consciousness” (p. 219).
may present itself as a source of anxiety that is likely to manifest itself in a variety of different kinds of defense mechanisms, including sublimation. As Vaillant (1992, 1993) noted, a host of defense mechanisms can be loosely rank-ordered in terms of their “maturity” or adaptiveness – these range from highly immature, maladaptive defenses such as delusional projection and psychotic denial to highly mature, adaptive defenses such as altruism, sublimation, and humor. It is the degree of preexisting mental health and cultural adaptiveness and appropriateness that would determine the specific form of defense in which the disconnected idea, the source of anxiety, gets resolved.

**Incubation and ego-depletion leading to creativity**

As the “New Look” approach to perception (Allport, 1954; Bruner, 1957; Erdelyi, 1974) suggests, a lot of what is perceived gets filtered out due to failing to meet the threshold of consciousness. As both the neo-behavioristic and the information-processing approaches to sublimation would predict, the most troublesome and emotionally-threatening stimuli are more likely to remain in the unconscious, as these models predict that processing of the most troublesome and emotionally-threatening stimuli would be aborted at the earliest stages of processing. In other words, these models suggest that people will be relatively successful at shoving down troublesome affect and cognition out of the consciousness, to the extent that the troublesome affect and cognition are highly emotionally threatening (the raw materials for sublimation).

It is interesting to ponder what would happen to the threatening emotions, thoughts, and impulses that are shoved down out of consciousness and into the unconscious. Would they undergo any transformation while they are being worked on in the unconscious? Both laypeople and scholars of the unconscious alike have noted that when problems are harbored in the
unconscious, creative solutions tend to arise. We are familiar with the historical anecdotes of creativity and scientific discovery known as “eureka moments” – while taking a period of recess from countless hours of laboring on a seemingly unsolvable problem, the answer to the problem suddenly appears:

One of the most famous poems ever written, *Kubla Kahn: Or, a vision in a dream* by Samuel Taylor Coleridge, was revealed to the author in a dream. Albert Einstein did, often suddenly and unexpectedly, simply “see” solutions to scientific problems. Henri Poincare’s detailed introspective account of his most important mathematical discovery is justifiably famous. He filed to solve a mathematical problem and went to the countryside with the goal to relax and not to think about it for a few days. Completely unexpectedly, the solution to the problem came like a flash at the exact moment he boarded a train.

(Dikjsterhuis, 2010, p. 229).

Dikjsterhuis (2010) writes that creativity is typically the result of a three-step process: first, conscious processing of a problem; second, incubation (unconscious processing) of the problem; and third, conscious verbalization or communication of the creative solution to the problem. During periods of unconscious thoughts, people wield greater associative power and divergence in their thinking (Bowers, Regehr, Balthazard, & Parker, 1990; Dijksterhuis & Nordgren, 2006). Concrete and discrete ideas that were labored over consciously become more abstract and loosely-associated, which seems to promote creative solutions to existing problems (Dijksterhuis, 2004b; Ellenbogen, Hu, Payne, Titone, & Walker, 2007). When dangerous and emotionally threatening feelings and thoughts are shoved down out of consciousness, there is a possibility that they could also reap the benefit of incubation in rendering creativity – it is possible that
difficult emotions, thoughts, and impulses may get “worked out” in the unconscious, leading to a
eureka moment of their own – the resolution in creativity and productivity (sublimation).

Although people spontaneously engage in this process of filtering out emotionally
threatening stimuli, they are also often faced with the task of consciously suppressing unwanted
thoughts, emotions, or impulses. Conscious suppression often turns out to be difficult, even when
the topic of suppression is as personally meaningless as thoughts about a white bear (Wegner et
al., 1987). It is extremely effortful, heavily drawing on limited cognitive resources – suppression
of unwanted thoughts and emotions become harder when people are under a mental load such as
stress, time pressure, or distraction (Galinsky & Moskowitz, 2007; Macrae & Bodenhausen,
2000; Newman, Duff, & Baumeister, 1997; Wegner & Erber, 1992; Wegner, Erber, & Zanakos,
1993).

The inherent difficulty associated with suppressing unwanted thoughts and emotions can
be connected to ego-depletion accounts of self-control (Baumeister, Bratslavsky, Muraven, &
Tice, 1998; Baumeister & Tierney, 2012; Muraven & Baumeister, 2000; Muraven & Tice, 1998).
As performing suppression of any kind is very difficult and ego-depleting, after suppressing
emotionally-threatening stimuli, people will get physically drained and exhausted, much akin to
people in the ego-depleted state: they became less inhibited and more reactive and emotional. To
the extent that insight and creativity require some disinhibition and heightened emotionality
(Averill & Thomas-Knowles, 1991; Eysenck, 1995; Fuchs, Kumar, & Porter, 2007; Martindale,
1999; Martindale & Dailey, 1996), ego-depletion may explain the increased possibility that
creative, productive work might result from the active suppression of emotionally-threatening
stimuli. When suppression is successful, incubation effects may take place along with the effect
of disinhibition and heightened emotionality from ego-depletion. We might thus expect that these combined forces will ultimately tip over and result in a certain level of creative expression.

**Empirical Demonstration of Sublimation**

While multiple theoretic accounts for the process of sublimation can be discussed, the problem for empirical psychologists does not lie in its theoretical plausibility, but in empirically demonstrating that the phenomenon exists. The existence of sublimation is generally accepted in psychiatric circles, as some psychiatrists have claimed support for its existence as a healthy defense or coping mechanism (Andrews et al., 1993; Domino, Short, Evans, & Romano, 2002; Vaillant, 1993; Vaillant, Bond, & Vaillant, 1986; Vaillant & Vaillant, 1990).

Although there is clinical support for the existence of sublimation, empirical data produced in the laboratory has been generally lacking. As Baumeister, Dale, & Sommer (1998) have pointed out, there has not yet been any “even moderately convincing” experimental demonstration that sublimation occurs (p. 1104), unlike phenomena such as rationalization (Festinger & Carlsmith, 1957), projection (Cohen & Gunz, 2002; Newman, Duff & Baumeister, 1997), compensation (Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003), reaction formation (Adams, Wright, Lohr, 1996; Weinstein, Ryan, De Haan, Przybylski, Legate, & Ryan, 2012), and repression (Anderson & Green, 2001; Caldwell & Newman, 2005; Newman, Caldwell, Chamberlin, & Griffin, 2005; Newman & McKinney, 2002; Weinberger, 1990; cf. Holmes, 1990; see also Winer & Newman, 2011). This “provides a sobering contrast with some other defense mechanisms” for which there is evidence, and it represents “an inviting opportunity for some researcher to provide positive evidence of sublimation” (pp. 1106-1107).

**1.4 Present Study**
The dearth of empirical research on sublimation may be demonstrating the inherent difficulty scholars in the past have experienced in capturing the process of sublimation in the lab. Given the suspected difficulty (but only suspected, since the publishability of negative or null findings are very low) of capturing the process of sublimation, it was imperative to line up powerful situational and cultural determinants that could be theorized to elicit sublimation. While the process of sublimation (if it exists) is not supposed to be specifically Protestant, based on our review of: a) the ascetic Protestant work ethic stemming from anxiety about the status of one’s salvation and general sense of depravity, b) the religious sanctification of worldly work accepted in many divergent Protestant churches, and c) the temporarily debilitating effects of guilt in non-Protestant religious traditions (such as Judaism and Catholicism) stemming from emphases on experiencing guilt as a valued emotion to elicit reparative actions, we hypothesized that sublimation as an ego-defensive process would be easier to evoke in Protestants, as compared to Catholics and Jews.

The design of the current study was informed by two previous studies that were conducted in our lab using the above logic of targeting Protestants and contrasting them with Catholics and Jews. One of them was a non-experimental study using real-life data from the Terman study of gifted children in California, first interviewed in the 1920s and subsequently followed as their lives progressed during the decades that followed. The analysis of this data showed that Protestant men and women who had “major problems or marked difficulties” related to sexual taboos and anxieties about depravity showed greater creative achievements in their adult lives, compared to their Catholic and Jewish counterparts (Kim, Zeppenfeld, & Cohen, 2013, Study 1). The other was an experimental study in which male Protestants who were induced to feel unacceptable sexual desires toward a woman they were imagining as their sister
produced more creative sculptures and poetry, compared to their Catholic and Jewish counterparts (Kim, Zeppenfeld, & Cohen, 2013, Study 2).

Conflicts related to sexual desires may not be the only source of sublimation. As Freud hypothesized, angry and destructive emotions may be sublimated into something positive as well. The current study provide an empirical examination of the process of sublimation of angry and destructive emotions, nested in the hypothesis that Protestants, as compared to Catholics and Jews, may be more likely to sublimate suppressed aggressive drives (aggressive thoughts and urges) into creative and productive work. In the following study, we asked Protestant, Catholic, and Jewish participants to actively suppress their angry and aggressive feelings, and we expected Protestant participants to channel and sublimate their anger into creative output in the form of cartoon captioning, collage, and sculpture.
CHAPTER 2

METHOD

2.1 Participants & Overall Procedure

Participants were 42 Protestant (26 women) and 54 Catholic and Jewish (36 women) undergraduates from the University of Illinois. The majority of the Catholics were at least part Irish American for reasons noted below.

Upon entering the lab, participants signed the consent form and were told that the experiment will assess their “thinking, perception, and attention skills,” and they will be doing a number of tasks that involve these skills. Specifically, participants were told that they will be doing tasks that will measure their ability to focus their attention on something, their ability to focus their attention away from something, their ability to use visual imagery, and their vocabulary and word recognition skills.

As a first set of tasks, participants were instructed to carry out three “imagery and writing” tasks that involved bringing to their mind an object or an incident and writing as much as they can about the object or the incident in a given amount of time. The first one of the three imagery and writing tasks served as a practice task (in which all participants were instructed to create a mental image of a horse and write as much as they could about the horse, while making an appropriate hand motion with their non-writing hand – “pretend that you are petting the horse” – to facilitate the mental visualization of the horse). The second imagery and writing task involved our anger manipulation, in which participants were randomly assigned to recall either an angry emotional event or an emotionally neutral event (Section 2.2). Finally, the third imagery and writing task was used to facilitate our suppression manipulation (Section 2.3), as a transitional task between the suppression instruction and a series of dependent measures that
followed – participants did a short Lexical Decision Task (Section 2.4), followed by three Creativity Tasks (Section 2.5) and self-report questionnaires as a part of their exit measures (Section 2.6).

2.2 Anger Manipulation

After carrying out the first imagery and writing task involving a mental image of a horse, participants were randomly assigned to one of the two conditions below:

1) Anger condition – Recalling and writing about an incident in which the participant felt aggressive anger at someone (e.g., a family member, significant other, close friend, even a stranger)²;

2) No anger condition – Recalling and writing about an incident in which the participant was engaging in an emotionally neutral and mundane task (e.g., driving, doing laundry, and grocery shopping).

Participants who were assigned to the high anger condition were asked to recall, visualize, and write about an incident in which they felt aggressive anger at someone, to the point of wanting to hurt that person. We expected that experiencing a high level of aggressive anger towards someone should elicit some intrapsychic conflict for the participant because such anger is usually

² In the anger manipulation, Participants were either told to remember an incident where they were angry at someone close to them (e.g., a significant other or family) or at a stranger (e.g., acquaintance or someone on the street). According to both participant self-report and independent judges’ rating of the anger narratives (Section 2.6), both types of stories (anger at someone close or anger at a stranger) elicited the same amount of anger (all $p > .37$ for self-reported anger and independent judges’ rating of anger from the written narratives). In addition, in predicting creativity ratings, there were no effect for type of anger story ($p = .74$), no interaction with religious group ($p = .58$) or with instructions to suppress the anger ($p = .50$), and no three-way interaction of Type of anger story × Religious group × Instructions to suppress anger ($p = .76$). Thus we collapsed across the two anger conditions.
construed as being socially unacceptable. Thus, participants were verbally given the following instructions:

Our second task involves imagery and writing about an emotional event. What I want you to do is get as crystal clear in your mind a time when someone did something to make you very, very angry, to the extent that you wanted to physically hurt them (even if you didn’t carry this thought out). You may think of any time you became really, really, angry. Visualize in your mind the incident, visualize how you wanted to hurt the person, and feel your anger. I will give you 2 minutes to do this. Then I will give you 2 minutes to write as much as you can about the event. To help your visual imagery, I want you to use your hand to help you visualize. So as you think and write, I want you to make a fist with your non-writing hand.

Participants who were assigned to the no anger condition were asked to recall, visualize, and write about an incident in which they were engaging in an emotionally neutral and mundane task. They were verbally given the following instructions:

Our second task involves imagery and writing about an event that is emotionally neutral. What I want you to do is get as crystal clear in your mind a time when you were doing something that was emotionally neutral (for example, cleaning the house, or riding in a car, or running some errand). You may think of any time as long as there is no strong emotion associated with it. Visualize in your mind the event. I will give you 2 minutes to do this. Then I will give you 2 minutes to write as much as you can about the event. To help you visual imagery, I want you to use your hand to visualize. So as you think and write, I want you to take your non-writing hand and position it as if you were doing that emotionally neutral activity.
2.3 Suppression Manipulation

After the second imagery and writing task (targeting either an aggressively angry or emotionally neutral incident), the experimenter explained that the participant would now begin the “focusing away procedure,” in which they would “focus away” or suppress either the incident they wrote about in the second imagery and writing task or a horse. Thus, all participants needed to suppress something – either an anger incident or an emotionally neutral topic. There were two ways in which participants were instructed to suppress:

1) In the suppress-anger condition, participants were instructed to suppress thinking about the anger incident for the rest of the experiment or for just five minutes;

2) In the suppress-control condition, participants were instructed to suppress thinking about a neutral topic for the rest of the experiment.

By introducing the suppression manipulation, we wanted play out the ironic or “rebound effects” of suppression, which would increase the volume and frequency at which the participants felt their aggressive anger during the experiment (due to the anger manipulation).

3 In the suppression manipulation, participants were instructed to either suppress thinking about the incident they wrote about for the rest of the study or suppress it for five minutes and were told they were free to think or not think about what they had been suppressing. Because of the cognitive load of performing the tasks, there was an uncertainty in terms of which of these two suppression instructions would bring out the highest level of “rebound effects” of suppression (Wegner & Zanako, 1994; Wegner, 2009), maximizing the likelihood that the recalled anger memory would keep “pinging” the participant. However, in predicting the creativity ratings, there were no main effects or interactions for a variable representing suppression type (all ps > .63, all Fs < .24); participants who were instructed to suppress the recalled incident for the whole experimental period or for five minutes had similar results. Thus the two suppression conditions were collapsed in subsequent analyses.

4 For participants who suppressed something innocuous, whether they suppressed the horse or the emotionally neutral incident did not significantly predict different creativity ratings for Protestants vs. Catholics and Jews (effect of suppressing horse vs. neutral incident, F(1,55) = .61, p = .44; interaction of Religious group by Horse vs. neutral incident, F(1,55) = .004, p = .95).
Wegner and colleagues (Wegner & Zanako, 1994; Wegner, 2009) proposed the ironic process theory in which the same monitoring processes we engage in to keep us on the lookout for the target of our suppression (be it a thought, action, or emotion that we are trying to avoid) will ironically increase the chances of thinking about the very thing we are trying to suppress – especially when we are under a high cognitive load.

In our experiment, we increased the cognitive load of the participants who were instructed to suppress the emotional incident by giving them a series of creativity tasks that demanded their full attention (see section 2.5 on the full descriptions on the creativity tasks). Presuming that the cognitive load for the participants who are engaged in the creativity tasks is quite high, we expected that the ironic effects of suppression will increase the amount and extent to which the unwanted emotion (aggressive anger) will be felt by the participants.

2.4 Lexical Decision Task: Hurting vs. Reparative Words

After the participants completed the three sets of imagery and writing tasks, all of them did a lexical decision task which measured how quickly they classified stimuli as words or non-words. Participants were visually presented with a string of letters that formed words or non-words and were instructed to press one of the two keys on the keyboard to indicate whether the presented string of words was a word or non-word.

The critical words in the lexical decision task were 10 words describing aggressive, hurting actions or 10 words describing reparative actions. Whether a participant saw words describing hurting actions or words describing reparative actions as target words was a between-subjects variable. The 10 hurting words were: “fight,” “choke,” “hit,” “strike,” “hostile,” “hate,” “smash,” “beat,” “rage,” and “kick;” the 10 reparative words were: “love,” “hug,” “bond,” “friendly,” “harmony,” “warmth,” “kind,” “gentle,” “peace,” and “soothe.” The 10 target words
were embedded within a number of neutral words and non-words. Of these 10 target words, 7 were preceded by non-word homophones such as “iiwant,” “iyem,” and “goingtoo” – for example, the participant saw 2 consecutive stimuli of non-word homophone and a target word as in “goingtoo” and then “fight.”

Predictions were based on how the previous group of participants with the three religious backgrounds performed on a similar lexical decision task (see Kim, Zeppenfeld, & Cohen, 2013, Study 2). In this previous lexical decision task, target words used were either related to damnation and depravity (“dirty,” “guilt,” “suffer,” “forbid,” “prison,” “condemn,” and “reject”) or purity (“clean,” “pure,” “good,” “soul,” “virtue,” “noble,” “reward,” “worthy,” “approval,” and “prayer”). In this previous lab study, Jewish and Catholic participants showed quicker reaction times to damnation and depravity words, indicating feelings of guilt. If Jewish and Catholic participants in our current study also felt guilty, we should expect this guilt to motivate interpersonal reparative and reconciling action tendencies – leading Jewish and Catholic participants to be quicker to respond to reparative target words such as “love,” “hug,” “bond,” and so on.

Predictions for Protestant participants were less clear than the ones we made for Catholic and Jewish participants. The Protestant participants in the previous study showed quicker responses to purity target words and slower response to damnation and depravity target words. Based on these results, we might expect that Protestants in the current study might also show quicker responses to reconciling action words than hurting action words. On the other hand, the previous Protestant participants’ attention toward purity and away from damnation and depravity words could imply that such higher order goals are being invoked precisely to fight against strong, negative, and immediate temptations, as suggested by theories related to counteractive
self-control (Fishbach & Shah, 2006; Fishbach, Zhang, & Trope, 2010; Myrseth, Fishbach, & Trope, 2009; Trope & Fishbach, 2000), construal-level theory (Fujita & Han, 2009), and repressive information processing (Caldwell & Newman, 2005; Calvo & Eysenck, 2000; Derakshan, Eysenck, & Myers, 2009; Newman & McKinney, 2002). If this is a more accurate representation of the underlying process behind Protestants’ attention toward purity words and away from depravity words, we would expect Protestant participants in the current study’s suppressed anger condition to show quicker responses to hurting action words (reflecting more immediate hurting urges and temptations).

2.5 Creativity Tasks

Cartoon Captioning Task

There were three creativity tasks that we administered as our main dependent variable: Cartoon Captioning Task, Collage Task, and Clay Sculpture Task. Before going into the detailed description of the nature of the cartoon captioning task and how the captions were rated, The overall logic of the creativity assessment we used in this study needs some discussion here. For all creativity ratings done in this experiment (for cartoon captions, collages, and clay sculptures), judges were blind to experimental conditions, participant details, and each other’s ratings. Our creativity assessment technique followed Amabile’s (1983) Consensual Assessment Technique (CAT), which she defines as the following:

A product or response is creative to the extent that appropriate observers independently agree it is creative. Appropriate observers are those familiar with the domain in which the product was created or the response articulated. Thus, creativity can be regarded as the quality of products or responses judged to be creative by appropriate observers, and it can also be regarded as the process by which something so judged is produced. (p. 1001).
Along with the definition, Amabile also notes two important assumptions that CAT rests on: 1) obtaining reliable judgments of the creativity of products is possible, given an appropriate group of judges, and 2) the consensual definition of the technique assumes that creativity can be measured on a continuous dimension.

We closely followed Amabile’s (1983) requirements for the CAT procedure as well: 1) we recruited three separate groups of expert judges who had extensive experience with each of the three creativity domain we tested (cartoon caption humor, collage, and sculpture); 2) judges made their assessments independently; 3) judges were explicitly instructed to make a one-time, one-setting, relative assessments within the given pool of products, rather than rating them against some absolute standards of aesthetic quality; 4) each judge was given a different random order of the products in which they viewed and judged on a number of different domains.

In the Cartoon Captioning Task, participants were tasked with providing captions to five cartoons in need of captions (Figures 1a, 1b, 1c, 1d, and 1e). Among these five cartoons, two of them had explicit violent content (Figures 1a and Figure 1b) and three of them did not, though they contained some potential for conflict and mayhem (Figures 1c, 1d, 1e). With these five cartoons, participants were given 6 minutes to provide the funniest captions they could think of for each of the five cartoons, and were told that they could provide more than one caption per cartoon or skip any one of the five cartoons if they wished to.

Six independent judges (four psychology graduate students, one law school student, and one psychology faculty) later rated these captions on their funniness, creativity, wit, execution, and overall quality (each on a scale from 1 to 5). The judges for this task were all personally known to us, and they were recruited based on our understanding that they had a good sense of humor. In cases where participants provided more than one caption per picture, the highest
scoring caption was used in computing the participant’s score on the Cartoon Captioning Task, a score that averaged across all five cartoons.

As a secondary analysis, six independent raters (five additional independent judges and one of the six judges who rated the creative quality of the captions above) rated the content of the captions on the amount of anger, acerbity/acridness (cutting use of wit), nice vs. cruel construal of the world (on a continuous scale with “nice” and “cruel” as endpoints), aggression that is played up and elaborated (for cartoons with explicit violent content), aggression that is treated matter-of-factly (for cartoons with explicit violent content, reverse-scored), possibility of mayhem and violence played up and elaborated (for cartoons with potential for conflict and mayhem but without explicit violence), and implied conflict (for cartoons with potential for conflict and mayhem but without explicit violence). Again, the six content raters were blind to experimental conditions, participant details, and each other’s ratings.

Part of the motivation behind administering a task that involved production of humor had to do with our intention of finding a creativity task in which Jewish and Catholic participants (rather than Protestant participants) might sublimate their anger. Historically, comedy and satire are areas in which Jews and Catholics (particularly Irish Catholics) have excelled. To the extent that suffering and suppressed anger and frustration are channeled into humor as socially acceptable means to express these emotions, it is possible that Jewish and Catholic participants might show enhanced creativity on the Cartoon Captioning Task in the suppressed anger condition, similar to the way we would expect Protestants in the suppressed anger condition to show enhanced creativity (in the other two creativity tasks involving the production of collages and sculptures). If however suppressed anger is not a driving force behind Jewish and Catholic
humor, we would again expect the Protestant participants to excel in this task along with the other two creativity tasks.

**Collage Task**

The second creativity task involved producing a collage. Participants were given a standard set of 19 black and white photographic images and three patterns and were given 6 minutes to make a collage and title their work (see Figure 2 for examples). Of the 19 photographic images, five images had clear anger content (such as a large shadow of a statue holding a knife shaped in a striking down pose).

Six expert judges (six graduate art students whose work had been featured in shows) were recruited to judge the artistic content of the collages. All collages were rated on their creativity, novelty of the idea, effort evident, aesthetic quality, ability to command and keep attention, and overall evaluation as a work of art (each on a scale from 1 to 5).

As a secondary analysis, three additional independent judges rated the collages on how much the collages revealed the following emotions: anger/aggression, calmness/peace, positivity, negativity, conflict, and suffering. Again, the three emotional content raters were blind to experimental conditions, participant details, and each other’s ratings.

**Clay Sculpture Task**

The final creativity task that participants carried out was making a clay sculpture. For this task, participants were given a ball of clay and received 6 minutes to create a sculpture and title their work (see Figure 3 for examples). The same six expert judges who rated the collages above and one additional judge (a psychology faculty member who has had extensive coursework in producing sculptures) rated the sculptures on the same six dimensions (creativity, novelty of the idea, effort evident, aesthetic quality, ability to command and keep attention, and overall
evaluation as a work of art), with an additional dimension of technical goodness, which was considered to be uniquely applicable to rating of sculptures.

As a secondary analysis, three additional independent judges (same judges who rated the emotional content of the collages) coded for how much the sculptures revealed the following emotions: anger/aggression, calmness/peace, positivity, negativity, conflict, and suffering. Again, the three emotional content raters were blind to experimental conditions, participant details, and each other’s ratings.

**Main and Secondary Dependent Variables**

Thus the main dependent measure combined: 5 ratings of the quality of the cartoon captions, 6 ratings of the quality of the collage, and 7 ratings of the quality of the sculpture – these ratings were weighted so that all three creativity tasks contributed equally to the total combined creativity index. The alpha for the combined creativity index with the 18 creativity ratings was .92.

There was also a secondary dependent variable that quantified the level of anger revealed across the three creativity tasks (cartoon captions, collages, and sculptures). Ratings of anger content of the collages looked at: (a) an objective count of the number of violent/aggressive pictures used in the collage (predetermined) and (b) a subjective rating of the overall anger/aggression and conflict shown in the collage. Ratings of anger content of the sculptures included subjective ratings of the amount of anger/aggression and amount of conflict shown in the art. The scores on 5 anger ratings for the cartoon captions, 3 anger ratings for the collages, and 2 anger ratings for the sculptures were combined and weighed so that all three creativity tasks contributed equally to the total anger content score. The alpha for the scale with the 10 anger ratings was .72.
2.6 Self-Report Questionnaires and Anger-Narrative Coding

After participants had completed all three creativity tasks, they were given a short questionnaire on the anger incident they recalled earlier (see Section 2.2). They were asked to recall (for the second time) the anger incident they wrote about earlier in the experiment, and answered questions about how they felt at the time of the incident: how angry they felt, how much they wanted to hurt the other person (both questions on a scale from 1 to 5), and whether they thought about carrying out specific acts of vengeance: (a) hurting the other’s feelings, (b) humiliating or hurting the other’s reputation, (c) physically hurting the other person, (d) killing the other person, and (e) punishing the person in some other way. Participants were asked to select all that applied to how they felt at the time of the incident, and their responses on this question were scored from zero to five, depending on the number of revenge acts considered. All three measures were standardized and averaged to create an index of hostile feelings felt at the time of the incident. Changing the reference point, participants were then asked how much they wanted to hurt the other person when they were actually writing about the incident a little earlier in the study, and how much they felt like hurting the other person “right now” (as they were filling out the current self-report questionnaire). Both of these questions were set on a scale from 1 to 5.

In addition to the self-reported indices of hostile feelings felt at the time of the incident and at the time of writing about the incident, we recruited two independent judges (both graduate students in clinical psychology) to rate the amount of hostile feelings revealed in the participants’ writings (see Section 2.2). The two judges rated and coded each anger narrative on several questions, including: (a) how “objectively” bad was the provocation, (b) how angry the participants subjectively seemed, (c) how hurt the person subjectively seemed to feel, (d) if the
anger displayed by the person seemed justified, (e) if the participant’s emotions seemed matched to the event described by the participant, (f) the judges’ clinical assessment of the participants’ emotional state at the time of the event occurring, and (g) the judges’ clinical assessment of the participants’ emotional state at the time of writing about the incident.

All the questions listed above were on scales from 1 to 5, with the exception of (e), a question on emotional congruence. For this question, a scale from -5 to 5 was used in which -5 corresponded to the participant seeming much less angry than the objective severity of the incident, 0 corresponded to the emotion being very matched, and 5 corresponded to the participant seeming much more angry than the objective severity of the incident justified.

Participants also filled out the 28-item Overcontrolled-Hostility Scale (O-H scale; Megargee, Cook, & Mendelsohn, 1967). Within the framework of the current study, the overcontrolled hostility was conceptualized as an individual difference variable that might also predict sublimation. The O-H scale is designed to target those who display excessive inhibition against the expression of aggression in any form, including the normal, socially approved outlets for anger. Because individuals who score high on the O-H scale deny any form of outlets for their anger and aggression, provocation and instigation to aggression may accumulate over time to the point where when it is expressed, the aggression that takes place can be of “extreme or homicidal intensity” (p. 520).

A series of empirical studies conducted by Megargee and colleagues have found the O-H had a pattern of correlates that indicated association with “rigidity, excessive control, repression of conflicts, and test-taking attitudes which emphasizes positive adjustment and reluctance to express symptoms” (Megargee, Cook, & Mendelsohn, 1967, p. 524): O-H had significant positive correlations with scales measuring inhibition of aggression and excessive self-control,
and various scales designed to measure hostility or aggressiveness (Megargee & Mendelsohn, 1962).

Participants also filled out a few items on demographics and religious status.
CHAPTER 3: RESULTS

The basic experimental design of the current study compares: 1) participants who have to recall an anger producing incident and suppress it, 2) participants who have to recall an anger producing incident but have to suppress a neutral target, and 3) participants who have to recall something neutral and suppress something neutral (see Sections 2.2 and 2.3). The hypothesis was that Protestants in the suppress-anger condition would produce the most creative work (possibly with the exception of the Cartoon Captioning Task, a creativity task in which we had competing hypotheses for Protestants vs. Catholics and Jews).

3.1 Protestants in the Suppressed Anger Condition Produce More Creative Work

As may be seen in Table 1, the most creative work was done by Protestants in the anger condition who had to suppress it (mean = 2.91). Protestants who recalled an anger provoking incident but did not have to suppress the anger (suppress-control condition) scored about the same as other Protestants who recalled an emotionally neutral incident (means = 2.61 vs. 2.63, respectively), and both groups scored significantly lower in creativity compared to the Protestants who had to suppress their anger (contrast of 2, -1, -1; t(90) = 2.07, p < .04, f = .33).

This effect did not hold among Jews and Catholics, who scored slightly and non-significantly lower in the suppressed anger vs. other conditions (contrast of 2, -1, -1; t(90) = -.96, ns.). If anything, both anger conditions (suppressed and not) tended to make Jews and Catholics perform worse than controls (though the difference was not significant, t(90) = 1.5, p = .14, f = .21). The overall contrast capturing the Religious group × Anger suppression (or not) interaction was significant, t(90) = 2.16, p < .03, f = .23.

Although we hypothesized that for Catholics and Jews, a boost in creativity in the cartoon captioning task may result from suppressing anger, results from the cartoon captioning task
followed the same general pattern: they scored slightly and non-significantly lower in the suppressed anger condition relative to other conditions.

3.2 Anger Content in the Cartoon Captions and Art

Though Protestants in the anger suppression condition did not report consciously feeling more anger and hostility at the time of writing about the incident (see Section 3.3), their anger nevertheless came out in the cartoon captions and the artwork they produced in the creativity tasks. As may be seen in Table 2, Protestants in the suppressed anger condition created captions and art with the most angry content (mean = .32, SD = .67) as compared to those in the non-suppressed anger (mean = -.29, SD = .51) and no anger conditions (mean = -.10, SD = .55). The contrast among the above three groups of Protestants was also significant ($t(90) = 2.42, p < .02, f = .26$). This effect was not seen among Catholics and Jews, so that the contrast capturing the interaction of Religious group × Suppressed anger condition vs. All other conditions was significant, $t(90) = 1.98, p = .05, f = .21$.

Furthermore, among the Protestants, it was the amount of anger that leaked out into their work that was at least partly responsible (in a bivariate regression and mediation analysis) for the creative quality of their work. In a bivariate regression analysis among Protestant participants, a dummy variable coding for the suppressed anger condition (1) vs. all else (0) was significant at $t = 2.52, b = .28, \beta = .37, p = .02$. However, when the anger content of the art was added to the model as a predictor, the effect of the anger content became significant ($t = 3.55, b = .29, \beta = .50, p = .001$), and the effect of the original dummy variable was cut in half ($t = 1.32, b = .14, \beta = .18, p = .20$) and became non-significant.

When a formal test of mediation was carried out (by utilizing the SPSS macro from Hays & Preacher, 2012), we found a significant indirect effect of experimental condition on the quality
of the art that ran through the anger content revealed in the art. The path from the suppressed anger condition to the anger in the art was significant (coefficient = .514, \( t = 2.68, p = .01 \)) and the path from the anger in the art to the quality of the art was also significant (coefficient = .29, \( t = 3.67, p = .0007 \)), with bootstrapping results of the 95 percent confidence interval for the indirect effect being .04 to .32 (that is, not including 0).

Among Protestants, even after controlling for the self-reports of anger (felt at the time of the incident, felt while writing about the incident, and felt during the exit questionnaire), the amount of anger revealed in the cartoon captions and the art was still positively associated with the creativity ratings. Among Protestants, the effect of Anger content predicting the combined creativity scores was significant, \( t(17) = 2.15, b = .23, \beta = .48, p = .046 \). This may not be surprising given that neither the self-reported anger felt at the time of the incident, nor the self-reported anger felt at the time of the exit questionnaire predicted the art quality for Protestants (both \( ts < 1.28, ps > .22 \)). However, in reporting how they felt as they were writing about the incident earlier in the experiment, Protestants who said they did not want to hurt the other person produced better art and captions, \( t(17) = -2.39, b = -.18, \beta = -.47, p = .03 \). Thus, for Protestants, the quality of work in the creativity tasks was predicted by the greater anger content revealed in the art, even as it was predicted by less anger in one of the self-report questions.

Additionally, among Protestants, the amount of anger shown in the captions and the art remained as a significant predictor of creativity ratings, even after controlling for participants’ reaction time scores in the Lexical Decision Task. In a regression predicting creativity ratings simultaneously from reaction time scores and anger content of the art, more creative art was associated both with a) more anger content in the art \( (b = .34, \beta = .57, t = 4.20, p < .001) \) and
b) relatively quick reactions to hurting vs. reparative action words (interaction of reaction time × hurting vs. reparative words $b = .11$, beta $= .28$, $t(39) = 2.09$, $p = .04$).

3.3 Self-Report of Anger

Along with the anger content that were revealed in their work, participants’ self-report of anger was another variable that was examined. In a two-way ANOVA with Religious group (Protestants vs. Catholics & Jews) × Anger suppression (anger suppress vs. suppress-control) as factors, Protestants were more likely to report greater felt anger at the time of the incident happening (averaged anger ratings: Protestants $= .21$ vs. Catholics & Jews $= -.21$; $F(1,50) = 4.87$, $p = .03$, $d = .62$), but they were less likely to report feeling hostile at the time of writing about the anger incident in the lab (averaged hostility ratings: Protestants $= 1.77$ vs. Catholics & Jews $= 2.44$; $F(1,48) = 4.11$, $p < .05$, $d = .59$). There was no difference between Protestants vs. Catholics & Jews in self-reported amount of hostility felt at the end of the study ($p = .50$).

There were no significant effects of instructions to suppress or of interaction of religious group by instructions to suppress for any of the self-reported anger variables in Section 2.6 (all $ps > .23$). Also, when two independent judges later rated the “objective” severity of the provocation by examining the written narratives, there were no main effects of religious group, instruction to suppress, or the interaction of these two terms (all $ps > .12$).

3.4 Lexical Decision Task: Hurting Words vs. Reparative Words

Although Protestants in the anger suppression condition did not report consciously feeling more anger and hostility at the time of writing about the anger incident, their anger nevertheless came out in the Lexical Decision Task with hurting vs. reparative action words. Among Protestants, the results were consistent with the notion that suppressed anger would fester and lead to faster recognition of hurting action words, relative to the non-suppressed anger
or no anger conditions. As seen in Tables 3a and 3b, Protestants in the suppressed anger condition reacted more quickly to the hurting action words (mean = 590.29 ms, SD = 91.26 ms) and more slowly to the reparative action words (mean = 710.07 ms, SD = 185.58 ms), as compared to Protestants in the other conditions. Among Protestants, the interaction contrast of Lexical Decision Task: hurting vs. reparative words × Suppressed anger condition vs. All other conditions was nearly significant ($t(39) = 1.83, p = .07, f = .29$).

On the other hand, no such pattern emerged for Catholics and Jews. Consistent with the notion that the experience of feeling anger – suppressed or not – might produce guilt and lead to motivations for reparative actions, Catholics and Jews in both anger conditions responded more quickly to reparative action words than to hurting action words (Tables 3a and 3b). Among Catholics and Jews, the interaction contrast of Lexical Decision Task × Anger conditions vs. no anger condition was significant ($t(47) = 2.07, p = .04$).

### 3.5 Overcontrolled Hostility: an Individual Difference Variable Predicting Sublimation

Results from the experimental manipulations show a pattern of suppressed anger and hostility leading to more creative work among Protestants, but not among Catholics and Jews. As an individual difference variable that might also interact with the experimental condition to predict sublimation, participants’ overcontrolled hostility was measured using a 28-item scale (O-H scale; Megargee, Cook, & Mendelson, 1967). Behaviors that are typically associated with individuals scoring high on the O-H scale include tendencies to engage in denial and social alienation, exert rigid controls over hostile/aggressive impulses and feelings, and a lack of overt anxiety that may lead to an outburst of aggression, when enough instigations have been accumulated (Greene, 1980; Megargee, Cook, & Mendelson, 1967). Looking at mean levels by
religious groups, Protestant participants did not differ in the amount of overcontrolled hostility measured in the O-H scale, relative to Catholic and Jewish participants ($p = .35$).

A regression analysis using religious group (Protestant vs. Catholic and Jewish), suppressed anger condition (vs. all else), participants’ O-H score, and all relevant interaction terms as predictor variables showed that those scoring high on the O-H scale who were in the suppressed anger condition were more likely to produce more creative work, across both religious groups. Interaction of overcontrolled hostility and suppressed anger was significant, $b = .10$, beta = .23, $t = 2.21$, $p = .03$. Predicted values in the suppressed anger condition were 2.80 and 2.59 when overcontrolled hostility was 1 SD above and 1 SD below the mean, respectively. In the other conditions collapsed together, predicted values were 2.57 and 2.74 when overcontrolled hostility was 1 SD above and 1 SD below the mean, respectively. This effect did not interact with religious group (the interaction of Suppressed anger $\times$ Overcontrolled hostility $\times$ Religious group, $p = .74$).

Beyond this, however, any measures of process were not significant. The interaction of overcontrolled hostility and suppressed anger condition (and the overcontrolled hostility measure by itself) did not predict either expression of anger in the art, denial that one felt anger at the time of writing about the incident, or differential reaction times to hurting vs. reparative words in the Lexical Decision Task (all relevant $ps$ for the main effect of overcontrolled hostility and its interaction with suppressed anger were greater than .30).

In summary, there were two groups of participants who produced the most creative work: a) Protestants who recalled and suppressed their anger in the lab, and b) those (of any religion) who had chronically high levels of overcontrolled hostility and also recalled and suppressed their anger in the lab. Whereas the subsidiary measures (anger content in the art, denial of anger and
hostility in self-report, differential reaction times to hurting vs. reparative words) helped illuminate what was happening among the Protestants participants, the secondary measures were not particularly helpful for illuminating why individuals with chronically high levels of overcontrolled hostility might produce more creative work.
CHAPTER 4: DISCUSSION

4.1 Summary

In this study we have sought to find evidence for sublimation through displaced aggression. As a part of the logic of the experiment, I first highlighted the work of Weber, who synthesized the teachings of Martin Luther and John Calvin during the Protestant Reformation. Weber put forth the theory that Protestants, as distinct from other religious cultural groups in Europe at the time, tipped forward the rising wave of capitalism in Western Europe. Weber argued that the central tenets of Protestantism (specifically, of the Reformed faith) led Protestants to harness their anxieties about depravity and channel them into productive work in their callings.

I then discussed how the Weberian conception of the Protestant work ethic and the accompanying mentality can be conceptualized as a particular variant of the Freudian process of sublimation that occurs when unique cultural conditions are met. Sublimation is a defensive process that enables the channeling of unacceptable or unwanted thoughts and emotions by channeling them into socially acceptable forms. The Freudian process of sublimation thus complemented the Protestant work-ethic process theorized by Weber.

In a previous study conducted in our lab, we found that Protestants (but not Catholics or Jews) channeled forbidden lust (in that experiment, lust towards a person participants imagined as their sister) into creative work (Study 2, Kim, Zeppenfeld, & Cohen, 2013). In the current study, we found additional evidence in the same vein – this time, we saw Protestants (but, again, not Catholics or Jews) channeling suppressed anger into creative work. Thus, we replicate and extend the findings from the previous study by providing further independent experimental evidence for sublimation and demonstrating that the process of sublimation is not limited to
taboo sexual desires but also extends to suppressed aggressive desires. Protestants who had to suppress their anger were able to channel that anger into producing more creative art, in comparison to Catholics and Jews under the same conditions. In addition to the main finding, we also found an individual difference variable that predicted sublimation: overcontrolled hostility. As an individual difference variable, those with the highest levels of overcontrolled hostility also produced creative work, regardless of their religion.

4.2 Limitations

In the current study, we used a process manipulation in which we instructed participants to suppress thoughts about an anger-provoking incident and found that Protestants were more likely to sublimate suppressed anger than Catholics and Jews were. The process manipulation is limited in that participants are artificially instructed to engage in a thought process, as opposed to having it occur naturally. We were thus unable to examine whether Protestants might be more or less likely to suppress their taboo anger naturally in the first place. Additional experiments conducted in our lab, however, suggest that Protestants are more likely than Catholics to use psychological defenses characterized by impulse/affect minimization and displacement and that among Protestants (but not among Catholics or Jews), higher usage of these defenses predicted more creative interests, activities, accomplishments, and personalities.

Another important limitation to this study lies in its simplification of the three religious traditions discussed and its selection of an exclusive and rarified population. While the distinctions made between Protestant, Catholic, and Jewish traditions are meaningful and real (A.

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5 Upon reading through the anger incident narratives produced by our participants, we realized that the kinds of anger incidents participants recalled and wrote about were not nearly strong or “unacceptable” enough to elicit spontaneous suppression of those feelings and urges. For instance, one participant wrote about the time he got extremely angry at a stranger in line at a salad bar for taking all the remaining cucumbers. We suspect that such low level, banal anger (albeit extreme) may not be suitable to produce spontaneous suppression effect that are likely to happen naturally with more illicit types of anger.
Cohen, Hall, Koenig, & Meader, 2005; A. Cohen & Rozin, 2001; A. Cohen, Siegel & Rozin, 2002), there is a danger that they may have been overstated (Uhlmann et al., 2011). “Protestant” covers groups as diverse as Pentecostals, “non-denominationals,” and Episcopalians; “Jewish” includes liberal Reform Judaism, mystical Hasidic Judaism, and other groups; and while there is only one Catholic Church, there are certainly local variations (Roof & McKinney, 1987; Sasaki & Kim, 2011) to Catholicism. Given this diversity, there may be intra-religious differences in the phenomena we have described here. We have also largely ignored other popular religions such as Islam (which constitutes the second largest religion in the world), non-religious populations, and non-European American populations within the framework of our theoretical analyses.

4.3 On Liminal Consciousness and Future Directions

Whether or not sublimation is a process that belongs in the conscious or the unconscious domain does not get fully answered within the design of our current (and previous) experimental work. The archival and experimental data from the previous and current studies suggest that the process of sublimation does not lie exclusively in either the conscious or the unconscious domains (Kim, Zeppenfeld, Cohen, 2013). In the current study, we found more evidence that sublimation may largely be happening at the unconscious level of processing. While Protestants disavowed feeling hostility or anger at the time of recalling the incident, their suppressed aggressive impulses were demonstrated in the dependent measures, arguably at the unconscious level. Protestants in the suppressed anger condition were quicker to recognize hurting action words (such as “smash” or “choke”) than to recognize the reparative action words (such as “bond” or “soothe”) in the lexical decision task, demonstrating the presence of aggressive cognitions, while consciously disavowing anger. This anger was also shown in the artwork they produced later – while consciously disavowing anger, Protestants in the suppressed anger
condition created captions and art with the angriest content as compared to those in the non-suppressed anger and the no anger conditions. However, in work discussed elsewhere, there seem to be conscious elements to the act of sublimation (Kim & Cohen, 2013).

Given the ambiguity of the empirical results regarding where in the conscious-unconscious border this process lies, it is unclear to us if the process of sublimation entirely belongs to one domain or the other. The most plausible case to develop would be to argue that the process of sublimation exists in some liminal state of consciousness – where the conflicting thoughts and desires get shuttled back and forth, sometimes in plain view, sometimes in the back of our mind, and sometimes made fully salient in our consciousness (see also Erdelyi, 1985, 2001). People are often aware of the thoughts and feelings that they recognize as being unacceptable and troublesome at one level; at another level; at other times, however, they don’t recognize these thoughts and feelings at all and even deny or disavow their existence altogether.

Many of the more powerful and salient cultural phenomena (such as the Protestant work ethic) are probably motivated by strong cultural anxieties that reside in the world of liminal consciousness. Thus, the area of liminal consciousness seems like a ripe subject for research in which many more interesting cultural phenomenon could be captured and explained. While there are many consciously-held cultural beliefs that seem to constitute many of the easily observable cultural differences, much of the more “ingrained” cultural differences in the way that people think and feel may be the result of differences socialized into liminal and unconscious zones of the mind.

An important amount of research has been done to explore the anxiety reducing effects of culture (Greenberg, Solomon, Pyszczynski, & Simon, 1997; Becker, 1997; Ellison, Burdette, & Hill, 2009; Greenberg et al., 1990; Heine, Proulx, & Vohs, 2006; Inzlicht & Tullett, 2009; Proulx
& Heine, 2007, 2008; Proulx, Heine, & Vohs, 2010; Shepherd et al., 2011). However, what has not been less noted is culture as a causal agent for anxiety. At the same time as it offers a buffer and relief from anxiety, culture is often the cause of its own particular sources of anxiety.

Thus, it seems logical to argue that defense and anxiety work in a symbiotic relationship: Cultural defenses take hold and are tenacious because they offer a relief from equally tenacious and strongly-held cultural anxieties, often becoming a natural response to such anxiety. By provoking and then subduing anxiety, culture works its magic. To the extent that different cultures have different demands and offer different solutions for their cultural constituents, we might expect liminal or defensive processes to be expressed differently across cultures (see work by Chiu & Cheng, 2007; Heine, Proulx, & Vohs, 2006; Kitayama, Markus, Matsumoto, & Norasakkunit, 1997; Kitayama, Mesquita, & Karasawa, 2006; Leung, Maddux, Galinsky, & Chiu, 2008; Lun, Oishi, Coan, Akimoto, & Miao, 2010; Norenzayan, Dar-Nimrod, Hansen, & Proulx, 2009; Sasaki, Kim, & Xu, 2011; Tam, Chiu, & Lau, 2007).

One such example of a strong cultural phenomena that could be explained by the liminally conscious forces of cultural anxiety is the driving force of han in shaping Korean industriousness. Han can be roughly defined as a generalized sense of cultural angst and despair that originates from many years of invasion and oppression from Korea’s neighboring countries. Most Koreans will describe han as a feeling of anger and injustice that is felt at their gut level. Many years of Japanese occupation and the following World War II that devastated the country left the majority of its citizens poor and starving. The anger and injustice Koreans felt developed into a strong cultural angst that unified Koreans in a special kind of nationalism that existed in the subjective consciousness of each Korean – that they will not be ignored, trampled, or be forced to languish, ever again.
*Han* acts as a motivation of national development and especially economic improvement. It was the driving factor behind the “miracle on the Han-river” in the war-ravaged nation that had almost the entirety of its infrastructure burned to the ground but then became an economic powerhouse with global reach within 40 years. It was the same drive that led to Korea’s unprecedented recovery from the Asian Financial Crisis of the late 90s. Within five years of having been bailed out by the IMF, Korea resumed its role as one of the fastest growing economies in the world. Outsiders often characterized the period of the IMF bailout and the Koreans’ response to it by describing an “increase in national pride” that led to Korea’s economic recovery as a nation; but within the country it was less a matter of puffed up chests and uplifting songs, and more a matter of cultural anger and humiliation at having been bailed out by the IMF and appearing weak before the international community. It is a reflection of a nation-wide and Korean obsession that the world should respect Korea. There is a common saying in Korean: “it’s the small pepper that’s the hottest.” The generalized cultural anxiety of Koreans that they should not be slighted or trampled on was a driving force behind its unprecedented economic growth of the 20th century.

Like in the case of *han* leading to Korean economic growth, there may be many other interesting cultural phenomenon that can be traced back to an origin in a widespread cultural anxiety. While more work remains to be done, the present paper has extended what may be the first set of experimental evidence for sublimation processes (Baumeister et al., 1998; Kim, Zeppenfeld, & Cohen, 2013). Moreover, it highlights the potential promise of a cultural psychology of the liminal zone of the mind – the results of the present paper suggest that in addition to the interesting cultural phenomena that are easily expressed and reportable, there may be even more interesting cross-cultural effects underneath.
REFERENCES


TABLES AND FIGURES

Table 1

*Combined Creativity Scores on the Sculpture, Collage, and Cartoon Tasks as a Function of Religious Group and Whether Participants Had to Recall an Anger-Provoking Incident and Then Suppress It, Recall an Anger-Provoking Incident but Suppress a Neutral Target, or Not Recall an Anger-Provoking Incident and Suppress a Neutral Target*

<table>
<thead>
<tr>
<th>Group</th>
<th>Anger and suppression</th>
<th>Anger without suppression</th>
<th>No anger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protestants</td>
<td>2.91</td>
<td>2.61</td>
<td>2.63</td>
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<tr>
<td>Catholics and Jews</td>
<td>2.53</td>
<td>2.57</td>
<td>2.73</td>
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</table>

Table 2

*Ratings of the Anger and Hostility Shown in the Sculpture, Collage, and Cartoon Tasks as a Function of Religious Group and Whether Participants Had to Recall an Anger-Provoking Incident and Then Suppress It, Recall an Anger-Provoking Incident but Suppress a Neutral Target, or Not Recall an Anger-Provoking Incident and Suppress a Neutral Target*

<table>
<thead>
<tr>
<th>Group</th>
<th>Anger and suppression</th>
<th>Anger without suppression</th>
<th>No anger</th>
</tr>
</thead>
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<tr>
<td>Protestants</td>
<td>.32</td>
<td>-.29</td>
<td>-.10</td>
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<tr>
<td>Catholics and Jews</td>
<td>-.07</td>
<td>.02</td>
<td>.03</td>
</tr>
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</table>
Table 3a

*Reaction Times (in Milliseconds) to Hurting vs. Reconciling Words as a Function of Religious Group and Whether Participants Had to Recall an Anger-Provoking Incident and Then Suppress It, Recall an Anger-Provoking Incident but Suppress a Neutral Thought, or Not Recall an Anger-Provoking Incident and Suppress a Neutral Thought*

<table>
<thead>
<tr>
<th>Group</th>
<th>Hurting words</th>
<th>Reconciling words</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Anger and suppression</td>
<td>Anger without suppression</td>
</tr>
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<td>Protestants</td>
<td>590</td>
<td>778</td>
</tr>
<tr>
<td>Catholics and Jews</td>
<td>700</td>
<td>670</td>
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<tr>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>Hurting words</th>
<th>Reconciling words</th>
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<tbody>
<tr>
<td></td>
<td>Anger and suppression</td>
<td>Anger without suppression</td>
</tr>
<tr>
<td>Protestants</td>
<td>710</td>
<td>622</td>
</tr>
<tr>
<td>Catholics and Jews</td>
<td>657</td>
<td>636</td>
</tr>
</tbody>
</table>
Table 3b

Reaction Times to Reconciling Minus Hurting Words as a Function of Religious Group and Whether Participants Had to Recall an Anger-Provoking Incident and Then Suppress It, Recall a Anger-Provoking Incident but Suppress a Neutral Target, or not Recall an Anger-Provoking Incident and Suppress a Neutral Target

<table>
<thead>
<tr>
<th>Group</th>
<th>Anger and suppression</th>
<th>Anger without suppression</th>
<th>No anger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protestants</td>
<td>120</td>
<td>-156</td>
<td>-34</td>
</tr>
<tr>
<td>Catholics and Jews</td>
<td>-43</td>
<td>-34</td>
<td>172</td>
</tr>
</tbody>
</table>

Figure 1a
Figure 2a

Title: “Love and Friendship”
Figure 2b

Title: “Everything”
Figure 3a

Title: “Sushi”
Title: “Portal to the 3rd Realm”