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Moral Mode Switching: From Punishment to Public Health

Stephen Koppel

The Graduate Center, City University of New York

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Moral Mode Switching: From Punishment to Public Health

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Department of Criminal Justice

A dissertation submitted to the Graduate Faculty in Criminal Justice in partial fulfillment
of the requirements for the degree of Doctor in Philosophy.

The City University of New York
2018

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Moral Mode Switching: From Punishment to Public Health

by

Stephen Koppel

This manuscript has been read and accepted by the Graduate Faculty of Criminal Justice in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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ABSTRACT

A public health response to drug offenses has potential to improve both public safety and public health. However, the public's desire for retribution represents a possible hindrance to reform. Relying on dual-process theory of moral decision-making, this dissertation examines agreement among laypeople about the relative blame deserved for various crime types, and probes several possible predictors of support—the need for cognition (“NFC”), intergroup bias, and free-will doubt—for retributive as well as consequentialist responses to crime. Findings from several web-based experiments show: (a) in comparison to core crimes (eg., murder) substantially less agreement about the relative blame deserved for noncore crimes (eg., drug offenses); (b) high NFC is associated with greater support for consequentialist responses to crime; and (c) free-will doubt is associated with less support for retribution, with blame mediating the relationship. Overall, it suggests high variability in decisions about noncore crimes, and possible ways to facilitate a switch in support from punishment to public health.

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“Civilization is built upon the renunciation of instinct.”
–Sigmund Freud, *Civilization and Its Discontents*

CHAPTER 1: INTRODUCTION

The United States has a punishment problem. From 1972 to 2007, the rate of incarceration rose 4-fold from 161 of every 100,000 residents in prison and jail to a peak of 767 of every 100,000—a rate historically and internationally unrivaled (Travis, Western, & Redburn, 2014). The “war on drugs,” which led to an unprecedented rate of drug-related convictions, has played an outsized role (Travis, et al., 2014; Thompson, 2010). By 1997, drug-related offenders comprised one-fifth of all state prison inmates and nearly two-thirds of all federal inmates (Mumola & Karberg, 2006), and since then the proportions have remained stable (Carson, 2015). This increase reflected a change of purpose in punishment policy: away from rehabilitating offenders and towards satisfying the public’s urge for retribution. As a report by the National Academy of Sciences concluded, the public’s desire for retribution was one of the main if not the only “impulses” behind the codification of harsh policies and consequent rise in incarceration rates. (Travis et al., 2014).

Efforts are now underway to shift the emphasis of criminal-justice policy away from punishment towards rehabilitation (Fondacaro, Koppel, O'Toole, & Crain, 2015). For non-violent drug offenses, this has involved an attempt to recast such behavior as a problem of public health. From this perspective, drug-seeking behavior is not the product of bad choices but instead changes in the brain (Chandler, Fletcher, & Volkow, 2009). For drug policy, several implications follow from this understanding of non-violent drug crime. First, retributive punishment based on moral blame is not justified;

after all, a person cannot be regarded as morally responsible for actions outside his or her control. Second, punishment alone is unlikely to be effective; as the value of a drug's reward grows, drug addicts become insensitive to its deterrent effects (Volkow, Baler, & Goldstein, 2011). Finally, the opportunity costs of a retributive approach to drug abuse are high. Although an estimated one-half of all prisoners meet the criteria for drug abuse or dependence (Karberg & James, 2005; Mumola & Karberg, 2006), only one-fifth of prisoners receive empirically supported drug treatment (Karberg, et al., 2005; Mumola et al., 2006). By point of contrast, in Portugal where drug use is decriminalized and such treatment is readily available, the rate of drug mortality is one-fiftieth that of the U.S.—achieving the same rate in the U.S. would save 1 life every 10 minutes (Kristof, 2017).

The public health approach to drug policy, which argues against punishment in favor of treatment, has promise to reduce incarceration and expand access to rehabilitative alternatives. However, its success depends on the public's willingness to resist the urge for retribution against drug use. As proponents of a public health approach to drug policy point out, this may be the biggest hurdle to reform: the perception of drug abuse as a moral failing that deserves punishment (Volkow & Li, 2004). Yet as science advances our understanding of addiction, these views are apt to be questioned. Nora Volkow, the Director of the National Institute of Addiction, sees the problem this way: "As we understand the neurobiological substrates that underlie voluntary actions, how will society define the boundaries of personal responsibility in those individuals who have impairments in these brain circuits?" (Volkow et al., 2004). From the perspective of the psychology of punishment, this inquiry raises several

empirically testable questions: (1) What drives judgments about punishment? (2) Are such judgments about drug crime different? (3) Are there individual differences that account for attitudes toward punishment? (4) What other factors might affect them?

Dual-process theory of moral decision-making provides a framework for examining such questions. The idea for dual-process theory grew out of an attempt to solve an ethical puzzle known as the trolley problem which runs as follows. Imagine a trolley is careening toward five people standing on a track, and you are a bystander with the options to: (1) flip a switch that turns the trolley away from the track and onto another with just one person on it, killing one to save five (the switch scenario); (2) push a person off a footbridge onto the track, accomplishing the same (the footbridge scenario). Asked what they would do, a majority of people indicate support for flipping the switch, but not pushing the person off the footbridge, that is, people tend to be consequentialists (5 lives > 1 life) in the switch scenario, and deontologists (“thou shall not kill”) in the footbridge scenario (Greene et al., 2001; Cushman, Young & Hauser, 2006). What’s going on?

Dual-process theory suggests the answer lies in the structure of the brain. According to the theory, the tension between consequentialism and deontology which the trolley problem lays bare reflects a similar tension between two competing and distinct cognitive systems: automatic and manual mode (Greene, J. D., 2014). Joshua Greene, dual-process theory’s leading proponent, analogizes this design structure to that of a digital camera. Such cameras come with two complementary picture-taking modes, automatic and manual. For most situations, the camera’s *automatic* mode settings (eg., portrait, landscape, sunset) work well; however, others call for the use of a

manual mode, enabling a user to tailor its settings to a particular circumstance. This dual-track design allows for both efficient and flexible decision-making. So it is with moral judgments, according to dual-process process theory, which argues that such decisions arise from both automatic, emotional responses (automatic mode) and controlled, conscious reasoning (manual mode).

Some may shrug off the claim that moral judgments proceed along dual psychological tracks as uninteresting, since the dominant view in cognitive science is that the mind is comprised of two distinct systems of thought, system 1 (automatic), and system 2 (controlled) (Evans, J. S. B., 2003); after all, moral judgments are also outputs of the mind. But dual-process theory goes beyond this claim to predict that the two cognitive systems tend toward two distinct kinds of moral judgments. Specifically, it posits that reasoning in automatic mode favors deontological judgments, whereas reasoning in the more controlled manual mode favors consequentialist judgments (Greene, J. D., 2014). In the brain's court Kant and Bentham argue their cases—and winning may well turn on the mode of moral reasoning a person happens to be in.

Empirical studies consistent with dual-process theory suggest several answers to the questions posed above. Research shows that (1) moral judgments about how to respond to wrongdoing are rooted in shared instincts that favor retributive punishment (Robinson & Kurzban, 2006; Carlsmith, Darley, & Robinson, 2002; Aharoni & Fridlund, 2012); (2) that people who rely less on controlled cognition tend to be more retributive (Sargent, M. J., 2004); (3) that emotional responses to out-groups play a role in support for retributive policies (Cunningham et al., 2004; Hetey & Eberhardt, 2014); and (4) that damping folk intuitions about free-will decreases support for retributive punishment

(Atiq, 2013; Haynes, Rojas, & Viney, 2003; Shariff et al., 2014). Viewed together, these findings suggest several automatic default settings that fuel harsh punishment: (1) low ‘need for cognition,’ (2) out-group bias, and (3) folk intuitions about free-will. Conversely, they suggest several potential switches from automatic to manual mode, that is, from deontological judgments that favor backward-oriented punishment to consequentialist judgments that favor forward-oriented rehabilitation—such as a public health approach to drug policy.

For the purpose of understanding punishment of drug crime, though, these findings should be viewed cautiously, since previous research has focused almost exclusively on *core* wrongdoing: physical aggression, unconsented-to takings, and deception or deceit in exchanges (Robinson & Kurzban, 2006). According to Robinson and Kurzban, two leading researchers of the psychology of punishment, such wrongs may be so central to effective group cooperation that our responses to them are deeply intuitive and widely shared. But for non-core crimes—those falling outside the core such as drug use—our intuitions may be less ingrained, and hence more susceptible to influence by these various factors (Robinson, Kurzban, & Jones, 2007). Do the factors above also affect judgments about non-core drug crimes? What is their impact relative to core crime?

The present dissertation addresses these questions through a series of studies. Study (1) examines lay attitudes about punishment of “core” and “non-core” crime; study (2) the relationship between the need for cognition and judgments about how to respond to crime; study (3) the relationship between perceived racial disparities and

judgments about how to respond to crime; and study (4) the relationship between belief in free-will doubt and judgments about how to respond to crime.

CHAPTER 2: LITERATURE REVIEW

2.1 Retributive Approach to Drug Policy

What has been the criminal justice system's response to the problem of drug abuse?

Since the principal function of criminal justice is to dispense punishment, it is no surprise that punishment has been favored over public health. Starting in the 1980s, at both the national and state level, drug policy makers waged a muscular "war" on drugs with the aim of redressing the problem through imprisonment. The shift in crime policy during this time was dramatic, ushering in "some of the most extensive changes" in criminal justice policy since the due process revolution of the 1960s." (Jensen, & Gerber, 1996).

Predictably, the prosecution of the war on drugs resulted in a sharp increase in drug-related convictions (Jensen, Gerber, & Mosher, 2004; Travis, Western & Redburn, 2014; Thompson, 2010). By 1997, the proportion of drug-related offenders reached one-fifth of all state prison inmates and nearly two-thirds of all federal inmates (Mumola & Karberg, 2006), and since then has remained roughly the same (Carson, 2015). Moreover, the impact has been skewed: while the prevalence of drug use is only slightly higher among blacks than among whites for some illicit drugs, and slightly lower for other illicit drugs, the rate of arrest for drug-related offenses has been 3 to 4 times higher among blacks (Travis, Western, & Redburn, 2014). In the late 1980s alone, the rate of arrest for drug-related offenses was 6 times higher among blacks (Blumstein & Wallman, 2006).

It's worth noting, however, that the extent to which the war on drugs has contributed to growth in incarceration is debatable. John Pfaff, a leading opponent of

this view, finds that drug offenses have not directly contributed much to prison growth, chiefly because convicted drug offenders are often not incarcerated (Pfaff, 2012). Yet even Pfaff concedes that the war on drugs may have played an important role, albeit indirectly. For example, he contends that many people incarcerated for property or violent crimes might have received probation had they not been previously arrested on a drug crime charge (Pfaff, 2012).

2.2 Public Health Approach to Drug Policy

The public health approach to drug policy aims to address the broad individual, environmental, and societal factors that influence drug abuse. This approach is partly based on a burgeoning understanding of the neuroscience of addiction. According to a recent Surgeon General report on alcohol, drug, and health, among the chief reasons for adopting a public health orientation to drug policy is the clear evidence demonstrating that: “substance use has complex biological and social determinants, and substance use disorders are medical conditions involving disruption of key brain circuits.” (Mental, H. S. A. U., & Office of the Surgeon General, US, 2016).

Broadly speaking, a group of four brain functions have been shown to underlie addiction: (1) reward, (2) motivation, (3) memory, and (4) control (Volkow, Fowler, & Wang, 2003). Research suggests that this group works like a government that, under normal circumstances, cooperates, learns, and changes together, and has various built-in checks and balances to optimize functioning. Each part plays a distinct role. *Reward* is involved in assigning values to positive and negative stimuli. *Motivation* is involved in incentive motivation. *Memory* is involved in general learning via association and conditioning. Located in the prefrontal cortex, *control* works like the brain’s judge,

resolving disputes among the various members. For individuals with drug addiction, the balance among the group is lost. As a result, the increased weight of a drug in the areas of reward, motivation/drive, and memory, prove too powerful for the prefrontal cortex to inhibit. This sets a viscous cycle into motion, with drug use leading to higher drug value and less inhibitory control, which begets more drug use, higher drug value, and less inhibitory control. And so on.

This neuroanatomical understanding of addiction is supported by research on the neurochemistry of the addicted brain. Studies of the neurochemistry of addiction focus on the brain's dopamine system, for drugs of abuse are posited to exert most of their influence via dopamine reinforcement (Volkow, et al., 2003). The reinforcing effects of drugs via the dopamine system is potent, even more so than natural reinforcers like sex and food (Volkow, et al., 2003). Imaging studies have revealed that acute and chronic drug consumption have different effects on proteins involved in dopamine synaptic transmission: in the short run, drug administration increases dopamine transmission; in the long run, drug administration decreases dopamine transmission (Volkow et al., 2007). Fmri studies of the effects of various drugs, including cocaine, methamphetamine, alcohol, and heroin, show a marked reduction in dopamine 2 receptors. This is the result of a process known as receptor down-regulation, whereby a surfeit of transmitter molecules floods a receptor, and in response the number of receptors decreases. This process is one of the explanations of drug tolerance: as the number of receptors decreases, the post-synaptic neuron becomes desensitized, thereby increasing the amount of a drug needed to achieve the same effect. Further support comes from animal studies showing that an *increase* in dopamine 2 receptors in

the nucleus accumbens has the opposite effect—a significant reduction in drug consumption (Davis, Akera, & Brody, 1979).

Consistent with this understanding, a growing number of substance abuse treatments have proved successful in the criminal justice setting. Cognitive behavioral therapy (“CBT”) is a form of talk therapy premised on the idea that patterns of thought play an important role in mental disease, such as substance use disorders, and that such patterns can be interrupted by adopting various coping strategies (Beck, 2011). Studies of CBT in criminal justice populations have shown it to be effective in both reducing recidivism (Landenberger & Lipsey, 2005) and substance abuse (Magill & Ray, 2009). Therapeutic community (“TC”) is an amalgam of treatment approaches distinguished mainly by (1) its understanding of substance abuse as having a broad range of biological, psychological, and sociological determinants, and (2) administration at the community level through one’s social environment, peers and staff members (De Leon, 1994). Research on TCs shows moderate effects in criminal justice populations, with an average 13% reduction in recidivism relative to a comparison group (Pearson & Lipton, 1999). Finally, medically-assisted treatment (“MAT”) involves the use of medication as a substitute for opiate-based drug addiction. Several such FDA-approved treatments exist, including methadone, a full agonist of the μ opiate receptor; buprenorphine, a partial agonist of the μ opiate receptor; and naltrexone, an antagonist of the μ opiate receptor. In a systematic meta-analysis of MATs, researchers found varying support: heroin maintenance was found to reduce crime significantly more than methadone maintenance; methadone maintenance was found to reduce crime more than treatments without substitution medication; Buprenorphine was

found to reduce crime more than placebo; and Naltrexone was found to reduce crime more than behavioral therapy and counseling (Egli et al., 2009).

Moreover, as problem-solving drug courts have proliferated—more than 2,500 now operate throughout all 50 states—access to such evidence-based treatment has improved. Premised on the idea of therapeutic jurisprudence, which argues for increasing the role of treatment in the law, such courts aim to reduce substance abuse and recidivism by diverting drug offenders away from incarceration and into treatment. Although punishment remains a possibility, its use in this context is tempered by an understanding of substance abuse as a disease in which relapse is likely. Research on drug courts shows mixed success with estimates ranging from no effect on recidivism (Rossman et al., 2011) to a 15% reduction (Gottfredson, Najaka, & Kearley, 2003; Wilson, Mitchell, & MacKenzie, 2006).

While the expansion of drug courts marks a positive shift away from punishment towards public health, several limitations should be noted. First, the proportion of overall drug offenders diverted into a drug court remains low, with estimates suggesting just 1 out of every 30 drug offenders is admitted into one (Alliance, D.P., 2011). Second, access to certain types of evidence-based treatment is limited. For example, in a recent nationwide study of drug courts, it was found that although 98% reported opioid-addicted defendants, only about one-half made MAT available (Matusow et al., 2013). Finally, despite their focus on delivering treatment, principles of retributive justice still figure prominently. For instance, prosecutors often exclude certain categories of offenders whose crimes are deemed too “serious” to “deserve” eligibility

for diversion and treatment (Goldkamp, 2003)—a decision based not on the likelihood of success in treatment but on a retrospective judgment of conduct.

As we have seen, evidence in support of the public health approach to drug policy, which views addiction as a medical problem rooted in brain-based changes, has potential to change perceptions about the right response to drug crimes, from a moral transgression deserving of retributive punishment to a public health problem in need of amelioration. Still, one might argue that support for harsh drug crime penalties reflect our deep intuitions about punishment, intuitions unlikely to be swayed by science. However, the fact that non-violent drug crime is not considered “core” wrongdoing suggests that support for retribution against such crime may be less rigid than expected.

2.3 Empirical Desert

How do we make judgments about the appropriate punishment for wrongdoing? A commonsense response to this question is apt to point to (1) a process of careful and deliberate reasoning, influenced by (2) the unique attributes of a decision-maker. Yet research suggests that these factors play less of a role than one might expect.

According to empirical desert theory, lay decisions about punishment for wrongdoing are rooted not in a process of deliberate reason but rather in snap intuitions shared widely across societies and demographic backgrounds (Robinson & Kurzban, 2006).

Support for empirical desert theory comes mainly in the form of studies showing agreement among laypeople about the relative blame deserved for various criminal offenses; for example, a murderer deserves more punishment than a thief. Rather than focusing on attitudes about the amount of punishment deserved for a crime—which can vary appreciably based on a community’s tolerance for harsh punishment—the theory

assumes that such comparative assessments are the best indication of a universal sense of justice, a moral grammar as it were. For example, Robinson and Kurzban conducted a study of 64 participants who were given twenty-four short scenarios depicting “John” engaged in a criminal offense (Robinson & Kurzban, 2006). Participants were asked to rank-order the offenses based on the amount of punishment John deserves. Scenarios involved offenses such as theft by taking, theft by fraud, property destruction, assault, burglary, robbery, kidnapping, rape, negligent homicide, manslaughter, murder and torture. Kendall’s W coefficient of concordance was used to statistically analyze the results (Kendall’s W coefficients range from 0 to 1, with 0 indicating no concordance and 1 indicating perfect concordance). Described as an “astounding level of agreement,” Robinson and Kurzban found a Kendall’s W of .95 ($p=.001$). In a web-based follow up of the study, 246 participants were asked to perform a similar task, this time using a mouse to drag and order each scenario based on punishment deserved. Again, participants showed a high level of concordance; a Kendall’s W of .88 ($p=.001$). These findings have been confirmed by studies using other empirical methods, including tasks where participants were required to assign offense scenarios to one of a set of predetermined categories; studies where participants were asked to assign numerical values to a number of offense scenarios based on crime seriousness; and studies showing that laypeople tend to justify punishment based on retributive notions (Robinson et al., 2006).

Moreover, the notion of shared intuitions of justice has support across various demographics. For example, in a study where participants were asked to assign a prison sentence according to the seriousness of an offense, researchers found that

demographic factors—gender, race, religious affiliation, and level of education—had little influence on the ordering of sentencing (Blumstein & Cohen, 1980). Cross-cultural studies have also shown similar consistency. For example, Newman conducted a study of 2,360 individuals from various cultures chosen for their apparent differences—India, Indonesia, Iran, United States, and Yugoslavia—in which the participants were asked to rate serious offenses on a twelve-point scale. Despite their cultural differences, on the question of relative criminal seriousness he found “general agreement in ranks across all countries.” (Morris, T., 1979). Finally, even children have been found to have consistent views about relative punishment (Finkel, Liss, & Moran, 1997).

What are the implications of these findings? According to Robinson and Kurzban, they argue for establishing retribution in its “empirical” formulation as the basis of criminal justice policy—as opposed to deterrence, incapacitation, or rehabilitation. Their case for apportioning punishment based on shared retributive “intuitions” rests, counterintuitively, on consequentialist grounds: (1) the need to satisfy the public’s purportedly universal retributive urges, and (2) potential crime-control effects. Relying heavily on Tom Tyler’s seminal work (Tyler, 2006), with respect to crime-control Robinson argues that adherence to empirical deserts enhances the moral credibility of the law, and thereby decreases citizens’ desire to engage in vigilantism and other forms of non-compliance. That is, when people perceive the law as being in line with their own intuitions about punishment, they are more likely to follow it. It’s important to point out, however, that this proposition—that departure from consensus views on punishment is criminogenic—has yet to be well-established; in fact, recent research raises doubts about whether this is the case (Slobogin & Brinkley-Rubinstein, 2013).

Despite these findings, some commentators argue that evidence of “shared intuitions” of justice should be viewed skeptically for several reasons. First, Kolber makes the case that empirical desert theory relies on “cherry-picked” intuitions (Kolber, 2009). Specifically, he argues that research supporting empirical desert theory is limited in that it focuses on a single level of abstraction: intuitions elicited via short vignettes containing few facts about a crime. At this level, laypeople’s intuitions may well be driven by retributive urges. However, when asked in even more abstract terms about the goals of criminal-justice punishment, laypeople tend to include aims like deterrence and incapacitation (Carlsmith, 2008). Second, Slobogin points out that empirical desert research is focused primarily on “core” crimes, and posits that crimes outside the core may vary significantly (Slobogin, & Brinkley-Rubinstein, 2013). Indeed, Robinson’s own research suggests this is so, finding “considerably less agreement” in rank-ordering of crimes such as marijuana and cocaine use and dealing, prostitution, underage drinking, and abortion (Robinson et al., 2006). Slobogin encourages more research on this score, and suggests that, if there is no general agreement on such controversial criminal law topics, then empirical desert may not be of much use to policy makers (Slobogin, C., 2010). Finally, Slobogin raises the possibility that dispositions guided by goals other than satisfying the public’s urge for punishment may, nevertheless, satisfy empirical desert’s aims (Slobogin, C., 2010). For example, he suggests that intensive multi-systemic therapy—which has been shown to significantly reduce recidivism of violent juveniles (Henggeler, 1999)—may have enough “punitive bite” to achieve both the aims of rehabilitation *and* empirical desert. This notion that rehabilitative programs can satisfy retributive urges is supported by experimental

research. Harlow, Darley and Robinson, for instance, found that participants in a study of community perceptions of punishment equated three years of an intensive supervision program with a year in prison in terms of punishment units (Harlow, Darley, & Robinson, 1995).

As we have seen, consistent with dual-process theory, people the world over tend to have similar retributive urges in response to “core” crimes, that is, our automatic and intuitive responses to “core” crimes tend to favor backward-oriented retributive punishment. According to some, such general agreement argues for predicating criminal justice policy on deontological judgments about wrongdoing, and cautions us against consequentialist reforms that fail to satisfy the public’s need for payback. However persuasive this argument may be with regard to “core” crime, this reasoning is less persuasive for non-“core” crime, for evidence of agreement on such crime remains inconclusive. Research showing significant variation for judgments about such crime would undercut the case for empirical deserts in this context. Moreover, such findings would raise the question of what accounts for differences in lay judgments about punishment for this type of crime. Are there individual differences that explain the variance? We turn to this question next.

2.4 Need for Cognition

Which individuals are most likely to support retributive punishment in response to crime? Research suggests that individual differences in the ‘need for cognition’ (“NFC”) may partly explain support for retributive punishment. The NFC is understood as “the tendency to engage in and enjoy effortful cognitive activity (Petty, Cacioppo, & Kao, 1984).” People with high NFC enjoy and are more inclined to engage in activities

requiring effortful thought. These individuals naturally tend to seek, acquire, think about, and reflect back on information to make decisions. Individuals with low NFC, in contrast, tend to rely on others (eg., celebrities and experts) and cognitive heuristics (Cacioppo et al., 1996). It is not that such people are incapable of effortful thought; these “cognitive misers” are just less likely to engage in it (Cacioppo et al., 1996).

Suspecting a link between NFC and support for punishment, Sargent hypothesized that individuals with low NFC would express greater support for punitive punishment; or, as he put it, “less thought, more punishment.” (Sargent, 2004) As expected, he found that, after controlling for gender and political ideology, need for cognition and punitiveness were negatively related. Moreover, he found that the relationship between NFC and support for punishment was mediated by attributional complexity (Fletcher et al., 1986); that is, low NFC individuals show greater support for punitive punishment because they tend to generate simplistic attributions of blame, whereas high NFC individuals show less support for punishment because they tend to generate complex attributions of blame.

Consistent with dual-process theory, these findings show that individuals who rely less on controlled cognition tend to be more retributive in response to crime. Further, the findings indicate that causal attributions mediate the relationship between NFC and support for punishment, suggesting that blame plays an important role. Yet whether these findings hold for various crime types remains unknown. What’s more, the relationship between the need for cognition and support for consequentialist responses to crime has yet to be explored. Do high need for cognition individuals show

greater support for rehabilitation? If so, is this because of the way high need for cognition individuals attribute blame?

2.5 Intergroup Bias

Social psychologists have shown that blacks are perceived as posing a greater criminal threat than members of other racial groups. (Correll et al., 2002; Eberhard et al., 2004; Chiricos, McEntire, & Gertz, 2001). Moreover, researchers have found differences in the level of perceived threat among blacks; specifically, blacks with more stereotypically black features are more likely to be seen as criminal (Eberhardt et al., 2004). The perceived blackness of a defendant has also been shown to influence judgments of punishment; the more stereotypically black a defendant is perceived to be, the more likely that person is to be sentenced to death.

Such research shows how bias in psychological processes can lead to racial disparate judgments. Using a novel method, Hetey and Eberhardt have also begun to probe the opposite causal pathway: whether racial disparities themselves can cause biased judgments (Hetey & Eberhardt, 2014). In one study, they tested whether extreme racial disparities in the prison population would influence California residents' decision to support an initiative reducing the severity of three-strikes laws. On an iPad, 62 white participants were shown a 40-second video in which 80 color photographs of black and white offenders flashed across the screen. The video was meant to convey information about the racial makeup of the state prison. The ratio of black-to-white inmates was manipulated to portray racial disparities as more or less extreme: in the less black condition, 25% of the photographs were of black inmates; in the more black condition, 45% of the photographs were of black inmates. The percentages

approximate the overall percentage of blacks in California state prison and the percentage of blacks incarcerated under California three-strikes laws, respectively. Participants were then given information about the existing three-strikes law and a proposed reform bill, and were asked to rate the current law's punitiveness on a Likert scale from 1 (not punitive enough) to 7 (too punitive). Finally, they were asked to sign a petition to be forwarded to the state attorney general supporting the reform bill. As predicted, the degree of racial disparity depicted in the prison population affected support for the reform bill: 52% in the less black condition signed the petition compared to just 27% in the more black condition.

One possible explanation is inter-group bias. According to inter-group bias theory, members of an in-group tend to favor members of the same, and derogate members of out-groups (Brewer, 1999; Hewstone, Rubin, & Willis, 2002). Seen this way, the findings above could be understood as white in-group derogation of a black out-group perceived to pose a threat to public safety. By the same token, one as yet unexamined possibility is white in-group bias in favor of white populations—in the form of support for consequentialist criminal-justice reform. In fact, some contend that such white in-group favoritism accounts for the current movement towards rehabilitation rather than retributive punishment in response to the ongoing opiate abuse epidemic (Yankah, 2016). Carl Hart, a leading drug addiction researcher, points out that this would fit with a historical pattern of “cognitive flexibility” regarding drug policy: harsh penalties for some (blacks) and sympathetic treatment for others (whites) (Hart, 2017). Demographic research shows that whites now comprise 90% of new opiate users, up from 50% in the 1960s (Cicero, Ellis, Surratt, & Kurtz, 2014). Moreover, research

shows that the consequences of this shift have been especially devastating for middle-age white Americans. For example, Case and Deaton have uncovered rising mortality rates for this demographic group—a trend running in the opposite direction of every other age group, racial and ethnic group, as well as counterparts in other rich countries (Case & Deaton, 2015).

According to dual-process theory, prejudicial responses to racial out-groups represent a default setting acquired through cultural learning; that is, out-group bias is an automatic response that tends toward deontological judgments (Greene, J. D., 2014). As such, a broader interpretation of the findings above is that racism leads to automatic responses, thereby fueling support for retributive punishment. But does this process work in the opposite direction? Would prompting people to view drug crime as an in-group problem influence support for consequentialist drug policies? Such findings would suggest that inter-group bias can work like a switch, from automatic judgments that favor punishment to manual judgments that favor rehabilitation. Are there other factors capable of moving judgments from automatic to manual mode? Research suggests that folk intuitions about free will may represent another such moral mode switch.

2.6 Free Will

Folk intuitions concerning free-will give us the strong sense that humans, unlike computers, have conscious control over their actions (Nahmias et al., 2005). But the more science teaches us about the inner workings of the natural world, the less plausible these intuitions about free-will become—after all, if everything in our mechanical universe can be fully explained by prior events, then humans are either a

glaring exception to the rule, or just another collection of atoms buffeted about by physical forces. In theory, doubts about free-will should affect judgments of criminal wrongdoing, since such judgments are premised on an assumption of free-will—to *freely* choose to commit crime.

Several lines of research suggest a link between folk free-will and judgments of criminal responsibility. First, researchers found that participants whose free-will beliefs were experimentally diminished were less likely to hold *themselves* responsible for bad behavior; specifically, participants exposed to an anti-free-will manipulation were less likely to help others, more likely to lie, cheat, steal, and act aggressively than participants in a control group (Baumeister, Masicampo, & DeWall, 2009; Vohs & Schooler, 2008).

Second, researchers found a relationship between beliefs in free-will and support for punitive punishment. Krueger et al., for example, found that strong free-will beliefs were associated with support for more punitive punishment (Krueger et al., 2014). However, this positive association was found only for transgressions that were not particularly emotionally arousing. That is, for emotionally charged transgressions, such as *core* crimes, free-will beliefs were not associated with support for punishment, whereas for less arousing crimes, such as *non-core* crimes, free-will beliefs were associated with support for harsh punishment.

Finally, in the most direct study of the relationship between free-will and support for retributive punishment, Shariff et al., tested whether diminishing free-will beliefs would lead people to see others' as less responsible for their bad behavior, and thereby reduce support for punishment (Shariff et al., 2014). In a study of 240 Americans

conducted via Amazon's Mechanical Turk, they examined whether free-will beliefs were positively associated with support for retributive punishment. Participants completed the seven-item Free Will subscale of the Free Will and Determinism Plus scale. To measure attitudes about retribution, participants read descriptions of retributivism and consequentialism as justifications for punishment and then indicated how important retributivism and consequentialism should be in determining criminal punishment. Participants also completed questions about education, religiosity, political ideology, and demographics. As hypothesized, stronger beliefs in free-will predicted greater support for retributive punishment, but did not predict support for consequentialist punishment. In a second study of 46 students, participants were randomly assigned to read (1) a passage from Crick's Astonishing Hypothesis that argues against the notion of free-will, or (2) a neutral free-will condition unrelated to the same, a task which had been previously validated (Vohs et al., 2008). Participants then read a vignette about a person who beat a man to death. Assigned the role of jurors, participants were asked to recommend a prison sentence that the offender should serve following a 2-year, nearly 100% effective rehabilitation program. The fact that the offender had been rehabilitated was included in order to isolate participants' desire for punishment as retribution. They found that participants in the anti-free-will group recommended roughly half the length of imprisonment (~5 years) compared to the control (~10 years).

Consistent with dual-process theory, these findings suggest that damping folk intuitions about free-will diminishes support for retributive punishment. In this way, perceptions of free-will may represent yet another switch capable of moving moral

judgments from automatic to manual mode—from support for backward-looking punishment to support for forward-looking rehabilitation.

CHAPTER 3: HYPOTHESES

Dual-process theory predicts that the two cognitive systems underlying moral decision-making—automatic and manual mode—tend toward two distinct kinds of judgments; namely, that automatic mode favors deontological judgments and manual mode favors consequentialist judgments (Greene, J. D., 2014). Although punishment can be employed towards either deontological or consequentialist ends, retributive punishment, which has been ascendant over the last three decades in the form of “positive” retribution, is wholly deontological, meaning that it is justified based on its intrinsic character as a deserved response to crime, not its consequentialist effects (Duff, 2008). As we have seen, research shows that there is considerable agreement among laypeople that the correct response to “core” wrongdoing (eg., murder, rape, or robbery) is retributive punishment. Such widespread agreement in favor of retribution suggests that these judgments result from an intuitive, automatic response—or, put in terms of dual-process theory, from reasoning in automatic mode. Moreover, consistent with dual-process theory, research shows that individual differences and situational factors can promote intuitive reasoning in automatic mode—low “need for cognition,” racial bias, folk free-will beliefs—and thereby increase support for retributive punishment. The current dissertation extends this line of research in two important ways: (1) it includes an examination of various crime types; (2) explores the relationship between the previously mentioned factors and support for consequentialist responses to crime. In all, four hypotheses are tested:

H1: There is dissensus among laypeople about the deserved punishment for non-“core” drug crimes, and that it is greater than dissensus for “core” crime.

H2: The 'need for cognition' (1) negatively relates to support for retributive punishment of drug crime; (2) positively relates to support for a rehabilitative approach to drug crime; (3) blame mediates these relationships.

H3: Participants exposed to a high white representation of criminal offenders show (1) less support for retributive punishment of drug crime; (2) more support for a rehabilitative approach to drug crime; (3) blame mediates these relationships.

H4: : Participants exposed to an "anti-free-will" manipulation show (1) less support for retributive punishment of drug crime; (2) more support for a rehabilitative approach to drug crime; (3) perceived blame mediates these relationship.

CHAPTER 4: DATA AND METHODS

4.1 Sample

For the four above-stated studies, participants who are age-qualified jurors were randomly drawn from the Mechanical Turk worker pool. Research suggests that this population is as representative of the U.S. population as traditional subject pools, with gender, race, age and education all matching the population more than college undergraduate samples and internet samples (Paolacci, G., Chandler, J., & Ipeirotis, P. G., 2010; Buhrmester, M., Kwang, T., & Gosling, S. D., 2011). However, it also shows that Mechanical Turk workers skew younger, more educated, underemployed, less religious, and more liberal than the general population (Shapiro, D. N., Chandler, J., & Mueller, P. A., 2013). Experimental instruments were created and administered via Qualtrics, with survey questions randomly ordered for each participant. Data was analyzed using SPSS. Missing data was removed through listwise deletion.

4.2 Procedures & Materials

Study 1: In Study 1 participants were randomly presented two tasks: (1) a series of 12 randomly ordered vignettes in which a person commits a “core” crime; (2) a series of 12 randomly ordered vignettes in which a person commits a non-“core” drug crime; (see: Appendix A).

Study 2: In Study 2, participants were asked to complete the 18-item short ‘need for cognition’ scale, whose reliability and validity is well-documented (Sadowski, 1993; Tolentino, Curry, & Leak, 1990) (see: Appendix B). They then read 6 short vignettes from three different categories of crime (2 drug crimes, 2 crimes against property, 2 violent crimes against persons), varying in degree across the non-“core” to “core” crime

spectrum (see: Appendix C). After each, they completed a 5-item retribution measure (see: Appendix D), and a 2-item consequentialist measure (see: Appendix E). To measure perceptions of offender blame, participants were asked to rate the degree to which an offender deserves blame (How much personal blame does the offender in this scenario deserve for his or her actions? From 1=Not all deserving of personal blame to 7=Completely Deserving of Blame (endpoints labeled)) (Shariff et al., 2014). For the retribution, consequentialist, and blame measures, participants' scores were averaged from scores on the two scenarios in the same crime category in order to create a single composite measure for drug crime, property crime, and violent crime.

Study 3: In study 3, participants were randomly assigned to one of two groups: (1) in the experimental group participants watched a 40-s video in which 80 color photographs of male faces (10% Black and 90% White) flashed across the screen; (2) in the control group participants watched a 40-s video in which 80 color photographs of male faces (50% Black and 50%, White) flashed across the screen. Drawn from real mug shots, the images were shown as a representation of criminal offenders in a specific jurisdiction. (Notice that these racial compositions reflect the previously mentioned demographic shift in new opiate drug users from 1960 to present.) As a manipulation check, participants estimated the racial composition of offenders. Participants then completed the retribution, rehabilitation, and blame measures.

Study 4: In study 4, participants were randomly assigned to one of two groups: (1) in the experimental group participants were exposed to an argument against the notion of free-will (see: Appendix F); (2) in the control group participants were exposed to a passage unrelated to free-will (see: Appendix G). Participants completed the Free Will

and Determinism (FAD) subscale on free-will beliefs (See: Appendix H). The sign of participants' scores on the FAD scale was reversed so that a strongly positive score indicating free-will belief was treated as a strongly negative score indicating free-will doubt. Finally, participants completed the previously mentioned retribution, rehabilitation, and blame measures.

4.3 Control Variables

Based on prior research, the regression models include well-documented predictors of lay attitudes about how to respond to crime: (female = 1, male = 0); ethnicity (Black=1, White=0; Hispanic=1, White=0; Asian=1, White=0), age (in years); education (from 1=less than high school to 7=graduate/professional degree); political orientation (from 1=Very Liberal to 7=Very Conservative); religiosity (What is your level of religiosity? (from 1=Not Very Religious to 10=Very Religious); victimization (Have you or a close family member ever been the victim of a serious crime? (yes=1, no=0) (Applegate, Cullen, & Fisher, 2002; Payne et al., 2004; Rossi, Berk, & Campbell, 1997).

CHAPTER 5: RESULTS

5.1 Study 1: Empirical Desert

Drawn from the Mechanical Turk worker pool, this study included 255 participants who successfully completed the tasks. Fifty-five percent of the participants were male ($n=137$) and 45% percent were female ($n=113$). Seventy-five percent of participants identified as White ($n=189$), 10% as Black ($n=25$), 8% percent as Asian ($n=21$), and 6% percent as Hispanic ($n=15$). Ages ranged from 19 to 70, with a mean age of 35.8 ($SD=11.3$); thirty-seven percent were in their 20s ($n=94$), 31% were in their 30s ($n=78$), 16% in their 40s ($n=40$), and 11% in their 50s ($n=27$). Forty percent of participants completed a bachelor's degree ($n=100$), 31% high school ($n=78$), and 21% an associate's degree ($n=52$). On a single-item measure of political orientation, 49% of participants indicated moderate ($n=123$), 34% percent liberal ($n=84$), and 18% conservative ($n=44$). On a single-item measure of religiosity, 58% indicated not very religious ($n=145$), 20% moderately religious ($n=57$), and 23% very religious ($n=49$). Twenty-one ($n=52$) percent reported having been the victim of a crime.

Table 5.1
Demographics of Study 1 Sample

Characteristic	Total Sample	
Gender	<i>n</i>	255
	% Male	54.6
	% Female	45
	% Other	0.4
Ethnicity	<i>n</i>	255
	% White	75.3
	% Black	10
	% Asian	8.4
	% Hispanic	6
	% Other	0.4
Age	<i>n</i>	255
	% < 20	1.2
	% 20-29	37.5
	% 30 -39	31.1
	% 40-49	15.9
	% 50-59	10.8
	% > 59	3.6
Education	<i>n</i>	255
	% Less than High School	0.4
	% High School	31.1
	% Associate Degree	20.7
	% Bachelor Degree	39.8
	% Graduate Degree	8
Political Orientation	<i>n</i>	255
	% Liberal	33.5
	% Moderate	49
	% Conservative	17.5
Religiosity	<i>n</i>	255
	% Not Very Religious	57.8
	% Moderately Religious	19.5
	% Very Religious	22.7
Victim of Crime	<i>n</i>	255
	% Yes	20.7
	% No	72.9
	% Unsure	6.4

As shown in tables 5.2 and 5.3, with regard to core crimes, participants broadly agreed in their relative judgments about how much punishment a person deserves, with a Kendall's W coefficient of concordance (a scale ranging from 0 to 1) of .65 ($p < .000$);

however, about non-core crimes, disagreement was marked, with a Kendall's W coefficient of concordance of .33 ($p<.000$).

Table 5.2
Summary Data from Core Crime Ordinal Ranking Task

<i>n</i>	Scenario	Modal Rank	Median Rank	Mean Rank	Standard Deviation
251	(larceny - buffet line)	1	1	1.99	2.19
251	(larceny - clock radio)	2	2	3.09	2.36
251	(larceny - television)	3	3	3.91	2.12
251	(slap)	4	4	4.42	2.11
251	(head-butt)	5	5	5.35	1.65
251	(knock down and kick)	7	6	6.39	1.62
251	(robbery - gold necklace)	7	6	6.02	1.99
251	(robbery with weapon - wallet)	8	8	7.25	1.89
251	(negligent homicide of toddler)	9	9	9.25	2.09
251	(homicide with letter-opener)	10	10	9.46	2.02
251	(premeditated homicide)	11	11	10.15	1.96
251	(arson-murder)	12	12	10.72	2.5

Kendall's $W=.65$, $p<.000$

Table 5.3
Summary Data from Noncore Drug Crime Ordinal Ranking Task

<i>n</i>	Scenario	Modal Rank	Median Rank	Mean Rank	Standard Deviation
249	(possession marijuana - 1/2 gram)	1	1	3.24	3.62
249	(possession ecstasy - 4 grams)	3	4	4.54	2.69
249	(possession cocaine - 6 lines)	4	5	5.23	2.7
249	(possession crack-cocaine - 1/20th ounce)	4	4	4.75	2.53
249	(possession heroin - 1/10 ounce)	5	5	5.43	2.19
249	(driving under influence of alcohol)	6	6	6.16	3.15
249	(sale marijuana - 10 ounces)	7	6	5.49	2.64
249	(sale cocaine - 500 grams)	8	8	7.76	2.06
249	(sale heroin - 3 ounces)	9	9	8.09	2.55
249	(manufacturing methamphetamines)	10	9	8.48	2.92
249	(import cocaine - 5 kilograms)	11	10	9.13	3.08
249	(import heroin - 1 kilogram)	12	11	9.71	3.47

Kendall's $W=.33$, $p<.000$

5.2 Study 2: Need for Cognition

Drawn from the Mechanical Turk worker pool, this study included 248 participants who successfully completed the tasks. Fifty-five percent of the participants were male ($n=136$) and 44% percent were female ($n=109$). Seventy-three percent of participants identified as White ($n=181$), 10% percent as Asian ($n=24$), 9% as Black ($n=21$), and 6% percent as Hispanic ($n=15$). Ages ranged from 18 to 70, with a mean age of 37 ($SD=12.5$); thirty-four percent of participants were in their 20s ($n=44$), 32% were in their

30s ($n=78$), 14% in their 40s ($n=34$), and 11% in their 50s ($n=28$). Forty-two percent of participants completed a bachelor's degree ($n=104$), 27% high school ($n=67$), and 17% an associate's degree ($n=42$). On a single-item measure of political orientation, 46% of participants indicated moderate ($n=113$), 41% percent liberal ($n=101$), and 13% conservative ($n=33$). On a single-item measure of religiosity, 61% indicated not very religious ($n=151$), 16% moderately religious ($n=39$), and 23% very religious ($n=58$). Twenty percent ($n=50$) reported having been the victim of a crime.

Table 5.4
Demographics of Study 2 Sample

Characteristic		Total Sample	
Gender	<i>n</i>	245	
	% Male		54.8
	% Female		44.0
	% Other		0
Ethnicity	<i>N</i>	248	
	% White		73
	% Black		8.5
	% Asian		9.7
	% Hispanic		6.0
	% Other		2.8
Age	<i>n</i>	248	
	% < 20		1.2
	% 20-29		33.9
	% 30 -39		31.5
	% 40-49		13.7
	% 50-59		11.3
	% > 59		7.7
Education	<i>n</i>	248	
	% Less than High School		.4
	% High School		27
	% Associate Degree		16.9
	% Bachelor Degree		41.9
	% Graduate Degree		13.7
Political Orientation	<i>n</i>	247	
	% Liberal		40.7
	% Moderate		45.6
	% Conservative		13.3
Religiosity	<i>n</i>	248	
	% Not Very Religious		60.9
	% Moderately Religious		15.7
	% Very Religious		23.4
Victim of Crime	<i>n</i>	248	
	% Yes		20.2
	% No		75
	% Unsure		4.8

The NFC, an 18-item scale, showed strong internal consistency, with a Cronbach's alpha coefficient of .95. The Retribution Scale, a 5-item scale, was administered after each of the six crime scenarios. It showed moderate internal consistency for each scenario, with Cronbach's alpha coefficients of greater than .7. The Consequentialist Scale, a 2-item scale, was also administered after each of the six

crime vignettes. It showed moderate internal consistency for some crime scenarios, but for others fell below acceptable levels. Since Cronbach alpha values are sensitive to the number of items in a scale, this is not surprising. For such scales, inter-item correlations (optimally between .2 and .4) are suggested as an alternative indicator of consistency (Briggs & Cheek, 1986), which are shown below in Table 5.5. However, these values also suggest problematic levels of internal consistency on the Utilitarian Scale.

Table 5.5
Reliability of Scales

Scale	Number of Items	Cronbach α	Pearson inter-item correlation
Need for Cognition	18	.946	
Retribution	5		
		.758	
		.771	
		.756	
		.773	
		.769	
		.786	
Consequentialist	2		
		.767	.62
		.647	.48
		.635	.47
		.629	.47
		.579	.42
		.525	.36

A one-way repeated measures ANOVA was conducted to compare participants' scores on both the Retribution Scale and the Consequentialist Scale in response to crime vignettes spanning the severity spectrum, from drug crime, to property crime, to violent crime. The means and standard deviations are presented below in Tables 5.6 and 5.7. As expected, participants' mean scores on the Retribution Scale increased and dispersion decreased across the crime severity spectrum, with crime severity having a significant effect on support for retribution [Wilks' Lambda=.42, $F(2, 246)=44.2$, $p<.000$, multivariate partial eta squared=.27.] However, while crime severity also had a significant effect on the Consequentialist Scale scores [Wilks' Lambda=.74, $F(2,$

246)=173.2, $p<.000$, multivariate partial eta squared=.59.], the data indicated no clear pattern in relation to the crime severity spectrum.

Table 5.6
Descriptive Statistics for Retribution Scales

Retribution Scale	N	Min	Max	Mean	Standard Deviation
Drug Crime	248	1	7	4.9	1.19
Property Crime	248	2.5	7	5.6	1.06
Violent Crime	248	2.5	7	6.2	0.95

Table 5.7
Descriptive Statistics for Consequentialist Scales

Consequentialist Scale	N	Min	Max	Mean	Standard Deviation
Drug Crime	248	1	7	5.2	1.4
Property Crime	248	1	7	5.5	1.3
Violent Crime	248	1	7	4.7	1.6

Drug Crime (Retribution Scale)

Standard multiple regression was used to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + e,$$

where Y = support for retribution against drug crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = need for cognition (sum of 18-item scale with scores ranging from -72 to 72); x_{11} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with blame left out and then with blame included.

Table 5.8 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, blame was the most strongly correlated with support for retribution against drug crime (.53), followed by religiosity (.26), political ideology (.21) and age (.20). There were no concerning bivariate correlations among

the variables indicating collinearity (Tabachnick, Fidell & Osterlind, 2001). This was confirmed by an inspection of collinearity statistics, displayed in Table 5.9, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.8
Pearson Product-Moment: Drug Crime Retribution

	1	2	3	4	5	6	7	8	9	10	11	12
1: Drug Crime (retribution)	—											
2: Age	0.20***	—										
3: Education	0.07	0.12*	—									
4: Political Ideology	0.21***	0.01	-0.04	—								
5: Religiosity	0.26***	0.16**	-0.03	0.42***	—							
6: Black	0.09	-0.06	-0.07	0.00	0.25***	—						
7: Hispanic	0.04	-0.04	0.04	-0.10*	0.01	-0.08	—					
8: Asian	0.05	-0.19***	0.10*	-0.01	-0.09	-0.10*	-0.08	—				
9: Female	0.09	0.20***	0.01	-0.07	0.20***	0.02	-0.09	-0.13*	—			
10: Victimized	0.04	0.15*	-0.05	0.14*	0.16**	0.03	0.00	-0.03	0.03	—		
11: NFC	-0.06	0.04	0.04	-0.08	-0.06	-0.05	0.05	-0.13*	-0.06	0.09	—	
12: Blame	0.53***	0.23***	0.02	0.19***	0.27***	0.09	0.05	0.01	0.06	0.01	-0.06	—

*<.05, **<.01, ***<.001

Table 5.9
Collinearity Statistics

Collinearity Statistics		
Variable	Tolerance	VIF
Age	0.82	1.23
Education	0.95	1.05
Political Ideology	0.74	1.35
Religiosity	0.66	1.51
Black	0.88	1.14
Hispanic	0.94	1.07
Asian	0.89	1.12
Female	0.88	1.14
Victimized	0.93	1.07
NFC	0.95	1.05
Blame	0.86	1.17

Table 5.10 summarizes the regression analysis results for both model 1 (all predictors except blame) and model 2 (full model). Model 1 significantly predicted support for retribution against drug crime, $R^2=.15$, $R^2_{adj}=.11$, $F(10, 246)=4.0$, $p<.001$. Overall, it accounted for 15% of the variance in support for retribution. Two variables were statistically significant, political ideology and age, with least-squares estimates as follows

$$\hat{Y} = 3.28 + .02 (\text{Age}) + .12 (\text{Political Ideology})$$

Model 2 also significantly predicted support for retribution against drug crime, $R^2=.32$, $R^2_{adj}=.29$, $F(11, 245)=4.0$, $p<.001$. This model accounted for 32% of the

variance in support for retribution against drug crime, a markedly larger proportion than model 1. Notably, after controlling for the effects of both political ideology and age, blame was the only significant predictor, yielding the following least-squares estimate:

$$\hat{Y} = 2.29 + .31 (\text{Blame})$$

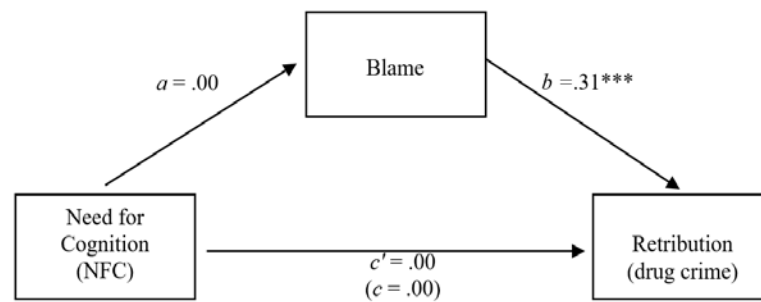
Table 5.10
Hierarchical Regression: Drug Crime Retribution

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Age	0.02***	0.01	0.21	0.01	0.01	0.09
Education	0.04	0.07	0.04	0.05	0.06	0.05
Political Ideology	0.12**	0.05	0.18	0.07*	0.04	0.11
Religiosity	0.05	0.03	0.14	0.02	0.02	0.06
Black	0.38	0.27	0.09	0.24	0.24	0.06
Hispanic	0.41	0.31	0.08	0.22	0.28	0.04
Asian	0.45	0.25	0.11	0.30	0.23	0.08
Female	0.12	0.15	0.05	0.13	0.14	0.05
Victimized	-0.12	0.18	-0.04	-0.01	0.17	0.00
NFC	0.00	0.00	-0.02	0.00	0.00	-0.01
Blame				0.31***	0.04	0.46
<i>R</i> ²			0.15			0.32
<i>Adjusted R</i> ²			0.11			0.29
<i>F</i>			3.97***			9.91***

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

Bootstrapping was also used to empirically test blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for the covariates in the full regression model (age, education, political ideology, religiosity, ethnicity, gender, victimized), showed that blame does not indirectly influence the relationship between the NFC and support for retribution against drug crime, since the 95% bias-corrected confidence interval includes zero, $ab = .00$ (95% CI [-0.01, .00]) (Hayes, 2013). Hence the null hypothesis cannot be rejected.

Figure 5.1
Indirect Effect of NFC on Drug Crime Retribution via Blame



$ab = .00$, 95% CI [-.01, .00]
 $* < .05$, $** < .01$, $*** < .001$, $n = 246$.

Property Crime (Retribution Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + e,$$

where Y = support for retribution against property crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = need for cognition (sum of 18-item scale with scores ranging from -72 to 72); x_{11} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with blame left out and then with blame included.

Table 5.11 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, blame was the most strongly correlated with support for retribution against property crime (.57), followed by age (.21), Asian

(.11) and political ideology (.10). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.12, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.11
Pearson product-moment: Property Crime Retribution

	1	2	3	4	5	6	7	8	9	10	11	12
1. Property Crime (retribution)	—											
2. Age	0.21***	—										
3. Education	0.03	0.14*	—									
4. Political Ideology	0.10*	0.02	-0.05	—								
5. Religiosity	0.10	0.17**	-0.04	0.42***	—							
6. Black	0.05	-0.06	-0.07	0.00	0.25***	—						
7. Hispanic	0.00	-0.06	0.07	-0.09*	0.02	-0.08	—					
8. Asian	0.11*	-0.19***	0.10*	-0.01	-0.09	-0.10	-0.08	—				
9. Female	0.06	0.21***	0.00	-0.08	0.19***	0.02	-0.08	-0.13*	—			
10. Victimized	0.10	0.15*	-0.05	0.13*	0.16**	0.03	0.01	-0.03	0.03	—		
11. NFC	0.06	0.04	0.04	-0.08	-0.05	-0.05	0.04	-0.13*	-0.06	0.09	—	
12: Blame	0.57***	0.26***	-0.09	-.082	0.028	0.00	0.08	0.05	0.10*	0.06	0.09	—

*<.05, **<.01, ***<.001

Table 5.12
Collinearity Statistics

Collinearity Statistics		
Variable	Tolerance	VIF
Age	0.82	1.23
Education	0.95	1.05
Political Ideology	0.74	1.35
Religiosity	0.66	1.51
Black	0.88	1.14
Hispanic	0.94	1.07
Asian	0.89	1.12
Female	0.88	1.14
Victimized	0.93	1.07
NFC	0.95	1.05
Blame	0.86	1.17

Table 5.13 summarizes the regression analysis results. Model 1 significantly predicted support for retribution against property crime, $R^2=.10$, $R^2_{adj}=.07$, $F(10, 246)=2.7$, $p<.003$. Overall, it accounted for a modest 10% of the variation in support for retribution against property crime. Two variables were statistically significant, Asian and age, with least-squares estimates as follows:

$$\hat{Y} = 4.5 + .67 (\text{Asian}) + .02 (\text{Age})$$

Model 2 also significantly predicted support for retribution against property crime, $R^2=.37$, $R^2_{adj}=.34$, $F(11, 244)=12.5$, $p<.01$. This model accounted for 37% of the variance in support for retribution against property crime, a markedly larger proportion than model 1. Two variables were statistically significant, political ideology and blame, with least-squares estimates as follows:

$$\hat{Y} = .73 + .63 (\text{Blame}) + .08 (\text{Political Ideology})$$

Notably, the addition of blame washed out the effects of both age and ethnicity. It also revealed a slight suppression effect of political ideology: once perceptions of blame were controlled for, conservative views were shown to be positively related to support for retribution.

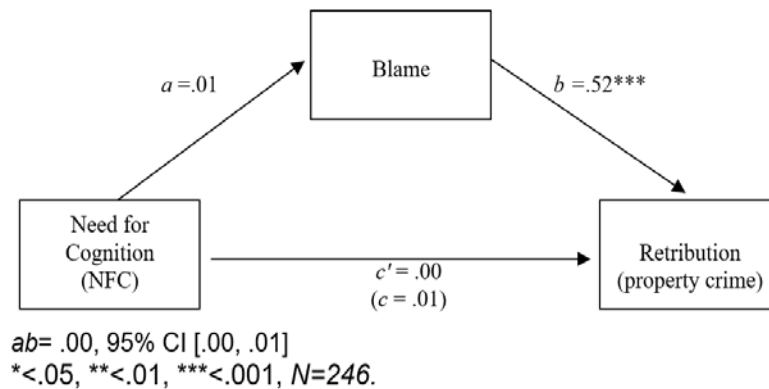
Table 5.13
Hierarchical Regression: Property Crime Retribution

Variable	Model 1			Model 2		
	B	SE	β	B	SE	β
Age	0.02***	0.01	0.25	0.01	0.01	0.06
Education	-0.02	0.06	-0.02	0.08	0.06	0.08
Political Ideology	0.07	0.04	0.12	0.08**	0.04	0.13
Religiosity	-0.00	0.02	-0.01	0.02	0.02	0.05
Black	0.35	0.25	0.09	0.21	0.21	0.06
Hispanic	0.22	0.28	0.05	-0.14	0.24	-0.03
Asian	0.67**	0.23	0.19	0.34	0.20	0.10
Female	0.09	0.14	0.04	-0.01	0.12	0.00
Victimized	0.10	0.17	0.04	0.08	0.14	0.03
NFC	0.01	0.00	0.09	0.00	0.00	0.03
Blame				0.63***	0.06	0.57
R^2			0.10			0.37
Adjusted R^2			0.07			0.34
F			2.73**			12.51***

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

Bootstrapping was also used to empirically test blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for covariates included in the model, showed that blame does not indirectly influence the relationship between the NFC and support for retribution against property crime, since the 95% bias-corrected confidence interval includes zero, $ab=.00$ (95% CI [.00, .01]) (Hayes, 2013).

Figure 5.2
Indirect Effect of NFC on Property Crime Retribution via Blame



Violent Crime (Retribution Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + e,$$

where Y = support for retribution against violent crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = need for cognition (sum of 18-item scale with scores ranging from -72 to 72); x_{11} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with blame left out and then with blame included.

Table 5.14 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, blame was the most strongly correlated with support for retribution against violent crime (.68), followed by age (.22), religiosity (.13), victimized (.13), female (.13), and Asian (.10). There were no concerning

bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.15, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.14
Pearson Product-Moment: Violent Crime Retribution

	1	2	3	4	5	6	7	8	9	10	11	12
1: Violent crime (retribution)	—											
2: Age	.22***	—										
3: Education	-.02	.11*	—									
4: Political Ideology	.01	.02	-.05	—								
5: Religiosity	.13*	.17**	-.04	.43***	—							
6: Black	.04	-.06	-.07	-.01	.25***	—						
7: Hispanic	.04	-.04	.04	-.10*	.01	-.08	—					
8: Asian	.10*	-.19***	.11*	-.01	-.09	-.10	-.08	—				
9: Female	.13*	.19***	.01	-.08	.19***	.02	-.09	-.13*	—			
10: Victimized	.13*	.14	-.04	.13*	.16**	.03	.00	-.03	.03	—		
11: NFC	.00	.05	.03	-.08	-.05	-.05	.04	-.13*	-.06	.08	—	
12: Blame	.68***	.24***	.03	.19***	.28***	-.03	.03	.07	.14*	.12*	.14*	—

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

Table 5.15
Collinearity Statistics

Collinearity Statistics		
Variable	Tolerance	VIF
Age	0.82	1.22
Education	0.95	1.05
Political Ideology	0.74	1.34
Religiosity	0.67	1.49
Black	0.88	1.14
Hispanic	0.94	1.06
Asian	0.87	1.15
Female	0.87	1.15
Victimized	0.94	1.07
NFC	0.93	1.07
Blame	0.87	1.15

Table 5.16 summarizes the regression analysis results. Model 1 significantly predicted support for retribution against violent crime, $R^2 = .11$, $R^2_{adj} = .07$, $F(10, 246) = 2.9$, $p < .002$. Overall, it accounted for 11% of the variance in support for retribution. Two variables were statistically significant: age and Asian. Least-squares yields the following estimates of these coefficients:

$$\hat{Y} = 5.5 + .02 (\text{Age}) + .59 (\text{Asian})$$

Model 2 also significantly predicted support for retribution against violent crime, $R^2 = .50$, $R^2_{adj} = .47$, $F(11, 246) = 20.9$, $p < .01$. This model accounted for 50% of the

variance in support for retribution against violent crime, a markedly larger proportion than model 1. Two variables were statistically significant, religiosity and blame, with least-squares estimates as follows:

$$\hat{Y} = 1.14 + .71 (\text{Blame}) + .03 (\text{Religiosity})$$

Notably, the addition of blame mediated the effects of both age and Asian. It also revealed a suppression effect of political ideology: once perceptions of blame were controlled for, religiosity was shown to be positively related to support for retribution.

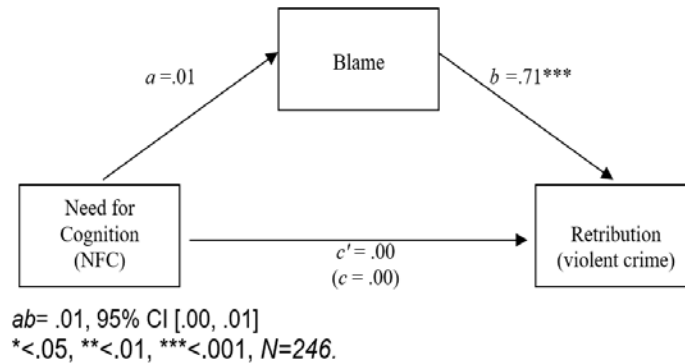
Table 5.16
Hierarchical Regression: Violent Crime Retribution

Variable	Model 1			Model 2		
	B	SE	β	B	SE	β
Age	0.02***	0.01	0.22	0.00	0.00	0.06
Education	-0.05	0.06	-0.06	0.00	0.04	0.00
Political Ideology	-0.01	0.04	-0.02	0.01	0.03	0.02
Religiosity	0.02	0.02	0.07	0.03*	0.02	0.11
Black	0.19	0.22	0.06	0.15	0.16	0.05
Hispanic	0.28	0.25	0.07	0.13	0.19	0.03
Asian	0.59**	0.20	0.19	0.25	0.16	0.08
Female	0.18	0.12	0.10	0.02	0.09	0.01
Victimized	0.21	0.15	0.09	0.08	0.11	0.03
NFC	0.00	0.00	0.02	0.00	0.00	-0.08
Blame				0.71***	0.05	0.67
R^2			0.11			0.50
Adjusted R^2			0.07			0.47
F			2.84**			20.93***

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

Bootstrapping was also used to empirically examine blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for covariates included in the model, showed that blame does not indirectly influences the relationship between the NFC and support for retribution against violent crime, since the 95% bias-corrected confidence interval includes zero, $ab=.01$ (95% CI [.00, .01]) (Hayes, 2013).

Figure 5.3
Indirect Effect of NFC on Violent Crime Retribution via Blame



Drug Crime (Consequentialist Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + e,$$

where Y = support for a consequentialist response to drug crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = need for cognition (sum of 18-item scale with scores ranging from -72 to 72); x_{11} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.17 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, blame was the most strongly correlated with support for a consequentialist response to drug crime (.18), followed by the NFC

(.16), and age (.14). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.18, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.17
Pearson Product-Moment: Drug Crime Consequentialist

	1	2	3	4	5	6	7	8	9	10	11	12
1: Drug Crime (consequentialist)	—											
2: Age	0.14*	—										
3: Education	-0.01	0.13*	—									
4: Political Ideology	-0.03	0.01	-0.04	—								
5: Religiosity	0.04	0.16**	-0.03	0.42***	—							
6: Black	0.02	-0.06	-0.07	0.00	0.25***	—						
7: Hispanic	0.09	-0.04	0.04	-0.10*	0.01	-0.08	—					
8: Asian	-0.13*	-0.19***	0.10*	-0.01	-0.09	-0.10	-0.08	—				
9: Female	0.06	0.20***	0.01	-0.07	0.20***	0.02	-0.09	-0.13*	—			
10: Victimized	0.09	0.15*	-0.05	0.14*	0.16*	0.03	0.00	-0.03	0.03	—		
11: NFC	0.16*	0.04	0.04	-0.08	-0.06	-0.05	0.05	-0.13*	-0.06	0.09	—	
12: Blame	0.18**	0.24***	0.02	0.20***	0.27***	0.09	0.05	0.01	0.06	0.01	-0.06	—

*<.05, **<.01, ***<.001

Table 5.18
Collinearity Statistics

Collinearity Statistics		
Variable	Tolerance	VIF
Age	0.82	1.23
Education	0.95	1.05
Political Ideology	0.74	1.35
Religiosity	0.66	1.51
Black	0.88	1.14
Hispanic	0.94	1.07
Asian	0.89	1.12
Female	0.88	1.14
Victimized	0.93	1.07
NFC	0.95	1.05
Blame	0.86	1.17

Table 5.19 summarizes the regression analysis results. Model 1 did not significantly predict support for a consequentialist response to drug crime, $R^2=.06$, $R^2_{adj}=.02$, $F(10, 246)=1.5$, $p<.155$. However, a single variable was statistically significant: the NFC. On the other hand, model 2 was statistically significant, $R^2=.09$, $R^2_{adj}=.05$, $F(11, 245)=2.19$, $p<.05$, although it accounted for only a modest 9% of the variation. Two variables were statistically significant, blame and the NFC, with least-squares estimates as follows:

$$\hat{Y} = 1.15 + .15 (\text{Blame}) + .01 (\text{NFC})$$

Notably, the effect of the NFC found in model 1 was not diminished after adjusting for blame.

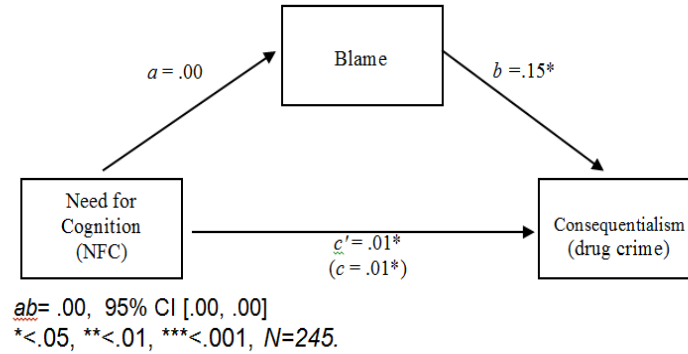
Table 5.19
Hierarchical Regression: Drug Crime Consequentialist

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Age	0.01	0.01	0.09	0.01	0.01	0.07
Education	-0.01	0.09	-0.01	-0.03	0.09	-0.02
Political Ideology	-0.02	0.06	-0.02	-0.03	0.06	-0.04
Religiosity	0.00	0.03	-0.01	-0.01	0.03	-0.03
Black	0.17	0.35	0.03	0.08	0.34	0.02
Hispanic	0.55	0.39	0.09	0.45	0.39	0.07
Asian	-0.37	0.33	-0.08	-0.43	0.32	-0.09
Female	0.15	0.20	0.05	0.11	0.19	0.04
Victimized	0.25	0.24	0.07	0.26	0.23	0.07
NFC	0.01*	0.01	0.13	0.01*	0.01	0.14
Blame				0.15**	0.06	0.19
<i>R</i> ²			0.06			0.09
<i>Adjusted R</i> ²			0.02			0.05
<i>F</i>			1.46			2.19*

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

Bootstrapping was also used to empirically test blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for covariates included in the model, showed that blame does not indirectly influence the relationship between the NFC and support for a consequentialist response to drug crime, since the 95% bias-corrected confidence interval includes zero, $ab = -.00$ (95% CI [00, .00]) (Hayes, 2013).

Figure 5.4
Indirect Effect of NFC on Drug Crime Consequentialism via Blame



Property Crime (Consequentialist Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + e,$$

where Y = support for a consequentialist response to property crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = need for cognition (sum of 18-item scale with scores ranging from -72 to 72); x_{11} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.20 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, blame was the most strongly correlated with support for a consequentialist response to property crime (.24), followed closely by

the NFC (.23), Asian (-.17), political ideology (-.16), and victimized (.15). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.21, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.20
Pearson Product-Moment: Property Crime Consequentialist

	1	2	3	4	5	6	7	8	9	10	11	12
1: Property Crime (consequentialist)	—											
2: Age	0.07	—										
3: Education	-0.03	0.14*	—									
4: Political Ideology	-0.16**	0.02	-0.05	—								
5: Religiosity	-0.02	0.17**	-0.04	0.42***	—							
6: Black	0.04	-0.06	-0.07	-0.01	0.25***	—						
7: Hispanic	0.06	-0.06	0.07	-0.09	0.02	-0.08	—					
8: Asian	-0.17**	-0.19***	0.10	-0.01	-0.09	-0.10	-0.08	—				
9: Female	0.08	0.21***	0.00	-0.08	0.20***	0.02	-0.08	-0.13*	—			
10: Victimized	0.15**	0.15*	-0.05	0.13*	0.16*	0.03	0.01	-0.03	0.03	—		
11: NFC	0.23***	0.04	0.04	-0.08	-0.05	-0.05	0.04	-0.13*	-0.06	0.09	—	
12: Blame	0.24***	0.26***	-0.08	-0.08	-0.04	0.00	0.08	0.05	0.10	0.06	0.09	—

*<.05, **<.01, ***<.001

Table 5.21
Collinearity Statistics

Collinearity Statistics		
Variable	Tolerance	VIF
Age	0.77	1.30
Education	0.92	1.09
Political Ideology	0.76	1.32
Religiosity	0.67	1.49
Black	0.88	1.14
Hispanic	0.92	1.08
Asian	0.87	1.15
Female	0.87	1.15
Victimized	0.94	1.07
NFC	0.94	1.06
Blame	0.86	1.17

Table 5.22 summarizes the regression analysis results. Model 1 significantly predicted support for a consequentialist response to property crime, $R^2=.13$, $R^2_{adj}=.09$, $F(10, 246)=3.4$, $p<.000$. Overall, it accounted for 13% of the variation. Three variables were statistically significant. The NFC contributed the most, followed by political ideology and victimized. Least-squares yields the following estimates:

$$\hat{Y} = 5.8 + .01 (\text{Need for Cognition}) - .12 (\text{Political Ideology}) + .47 (\text{Victimized}) - .12 (\text{Asian})$$

Model 2 was also statistically significant, $R^2=.16$, $R^2_{adj}=.13$, $F(11, 244)=4.2$, $p<.01$. This model accounted for 16% of the variance in support for a consequentialist response to property crime, only slightly larger than model 1. Four variables were statistically significant. Blameworthiness contributed the most, followed the NFC, Asian, and political ideology. Least-squares yields the following estimates:

$$\hat{Y} = 4.0 + .29 (\text{Blame}) + .01 (\text{NFC}) - .67 (\text{Asian}) - .11 (\text{Political Ideology}) + .47 (\text{Victimized})$$

Notably, the addition of blame did not mediate the effect of the NFC, political ideology, or victimized; however, it did reveal a slight suppression effect of Asian.

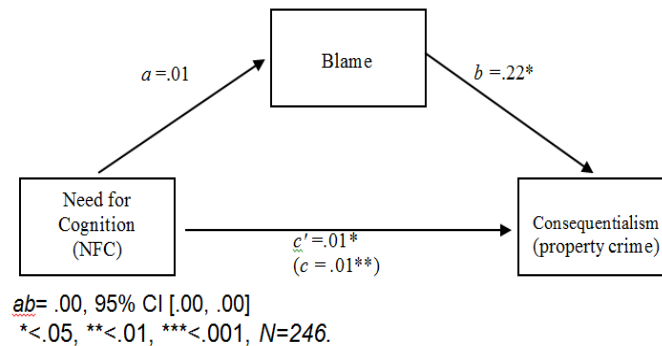
Table 5.22
Hierarchical Regression: Property Crime Consequentialist

Variable	Model 1			Model 2		
	B	SE	β	B	SE	β
Age	0.00	0.01	0.00	-0.01	0.01	-0.06
Education	-0.02	0.08	-0.02	0.01	0.08	0.01
Political Ideology	-0.12*	0.05	-0.17	-0.11*	0.05	-0.16
Religiosity	0.00	0.03	0.00	0.01	0.03	0.03
Black	0.13	0.29	0.03	0.05	0.28	0.01
Hispanic	0.28	0.33	0.05	0.05	0.33	0.01
Asian	-0.53*	0.27	-0.12	-0.67*	0.27	-0.16
Female	0.17	0.16	0.07	0.10	0.16	0.04
Victimized	0.47*	0.20	0.15	0.43*	0.19	0.14
NFC	0.01**	0.00	0.19	0.01*	0.00	0.17
Blame				0.29**	0.09	0.22
R^2			0.13			0.16
Adjusted R^2			0.09			0.13
F			3.38***			4.16***

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

Bootstrapping was also used to empirically test blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for covariates included in the model, showed that blame does not indirectly influences the relationship between the NFC and support for a consequentialist response to property crime, since the 95% bias-corrected confidence interval includes zero, $ab=.00$ (95% CI [.00, .00]) (Hayes, 2013).

Figure 5.5
Indirect Effect of NFC on Property Crime Consequentialism via Blame



Violent Crime (Consequentialist Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + e,$$

where Y = support for a consequentialist response to violent crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = need for cognition (sum of 18-item scale with scores ranging from -72 to 72); x_{11} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.23 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, the NFC was the most strongly correlated with support for a consequentialist response to violent crime (.17), followed

closely by political ideology (-.16) and victimized (.11). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.24, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.23
Pearson-Product Moment: Violent Crime Consequentialist

	1	2	3	4	5	6	7	8	9	10	11	12
1: Violent Crime (consequentialist)	—											
2: Age	-0.10	—										
3: Education	0.03	0.11*	—									
4: Political Ideology	-0.16**	0.02	-0.05	—								
5: Religiosity	0.06	0.17**	-0.04	0.43***	—							
6: Black	0.08	-0.06	-0.07	-0.01	0.25***	—						
7: Hispanic	0.09	-0.04	0.04	-0.10*	0.01	-0.08	—					
8: Asian	-0.05	-0.19***	0.11*	-0.01	-0.09	-0.10	-0.08	—				
9: Female	0.08	0.19***	0.01	-0.08	0.19***	0.02	-0.09	-0.13*	—			
10: Victimized	0.11*	0.14***	-0.04	0.13*	0.16*	0.03	0.00	-0.03	0.03	—		
11: NFC	0.17**	0.05	0.03	-0.08	-0.05	-0.05	0.04	-0.13*	-0.06	0.08	—	
12: Blame	0.09	0.24***	-0.03	-0.10	-0.02	-0.03	0.03	0.07	0.14*	0.12*	0.14*	—

*<.05, **<.01, ***<.001

Table 5.24
Collinearity Statistics

Variable	Collinearity Statistics	
	Tolerance	VIF
Age	0.82	1.22
Education	0.95	1.05
Political Ideology	0.74	1.34
Religiosity	0.67	1.49
Black	0.88	1.14
Hispanic	0.94	1.06
Asian	0.87	1.15
Female	0.87	1.15
Victimized	0.94	1.07
NFC	0.93	1.07
Blame	0.87	1.15

Table 5.25 displays the regression analysis results. Model 1 significantly predicted support for a consequentialist response to violent crime, $R^2=.11$, $R^2_{adj}=.08$, $F(10, 246)=3.0$, $p<.001$. Overall, it accounted for 11% of the variation. Four variables were statistically significant. Political Ideology contributed the most, followed by the NFC, age and victimized. Least-squares yields the following estimates:

$$\hat{Y} = 5.3 - .19 (\text{Political Ideology}) + .02 (\text{Need for Cognition}) - .02 (\text{Age}) + .49 (\text{Victimized})$$

Model 2 was also statistically significant, $R^2=.12$, $R^2_{adj}=.08$, $F(11, 246)=2.9$, $p<.01$. This model accounted for 12% of the variance in support for a consequentialist response to property crime, only slightly more than model 1. Three variables were statistically significant: political ideology contributed the most, followed age and the NFC. Least-squares yields the following estimates:

$$\hat{Y} = 4.48 - .19 (\text{Political Ideology}) - .02 (\text{Age}) + .01 (\text{NFC})$$

Notably, the addition of blame had little impact on the NFC, age and political ideology, while it completely mediated the effects of victimization.

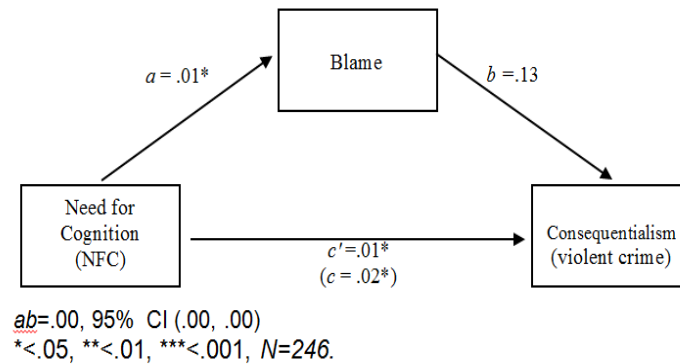
Table 5.25
Hierarchical Regression: Violent Crime Consequentialist

Variable	Model 1			Model 2		
	B	SE	β	B	SE	β
Age	-0.02*	0.01	-0.16	-0.02*	0.01	-0.18
Education	0.07	0.10	0.05	0.08	0.10	0.05
Political Ideology	-0.19**	0.07	-0.21	-0.19*	0.07	-0.20
Religiosity	0.07	0.04	0.14	0.07	0.04	0.14
Black	0.25	0.38	0.04	0.25	0.38	0.04
Hispanic	0.36	0.42	0.05	0.34	0.42	0.05
Asian	-0.16	0.35	-0.03	-0.23	0.36	-0.04
Female	0.22	0.21	0.07	0.19	0.21	0.06
Victimized	0.49*	0.25	0.12	0.47	0.26	0.12
NFC	0.02*	0.01	0.16	0.01*	0.01	0.15
Blame				0.13	0.12	0.07
R^2			0.11			0.12
Adjusted R^2			0.08			0.08
F			3.04**			2.87**

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

Bootstrapping was also used to empirically test blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after controlling for covariates included in the model, showed that blame does not indirectly influence the relationship between the NFC and support for a consequentialist response to violent crime, since the 95% bias-corrected confidence interval includes zero, $ab=.00$ (95% CI [.00, .00]) (Hayes, 2013).

Figure 5.6
Indirect Effect of NFC on Violent Crime Consequentialism via Blame



5.3 Study 3: Intergroup Bias

Drawn from the Mechanical Turk worker pool, this study included 258 participants who successfully completed the tasks. Fifty-eight percent of the participants were male ($n=149$) and 42% percent were female ($n=108$). Seventy-four percent of participants identified as White ($n=191$), 9% percent as Black ($n=24$), 8% as Asian ($n=20$), and 7% percent as Hispanic ($n=19$). Ages ranged from 19 to 77, with a mean age of 36.4 ($SD=12.6$); thirty-six percent of participants were in their 20s ($n=93$), 33% were in their 30s ($n=85$), 12% in their 40s ($n=32$), and 9% in their 50s ($n=24$). Thirty-seven percent of participants completed a bachelor's degree ($n=95$), 28% high school ($n=72$), and 24% an associate's degree ($n=61$). On a single-item measure of political orientation, 42% of participants indicated moderate ($n=108$), 39% percent liberal ($n=101$), and 19% conservative ($n=49$). On a single-item measure of religiosity, 61% indicated not very religious ($n=157$), 16% moderately religious ($n=40$), and 24% very religious ($n=61$). Twenty-two percent ($n=56$) reported having been the victim of a crime.

Table 5.26
Demographics of Study 3 Sample

Characteristic		Total Sample
Gender	<i>n</i>	257
	% Male	58
	% Female	42
	%Other	0
Ethnicity	<i>n</i>	258
	% White	74
	% Black	9.3
	% Asian	7.8
	% Hispanic	7.4
	% Other	1.6
Age	<i>n</i>	253
	% < 20	.8
	% 20-29	36
	% 30 -39	32.9
	% 40-49	12.4
	% 50-59	9.3
	% > 59	6.6
Education	<i>n</i>	256
	% Less than High School	0
	% High School	27.9
	% Associate Degree	23.6
	% Bachelor Degree	36.8
	% Graduate Degree	10.9
Political Orientation	<i>n</i>	258
	% Liberal	39.1
	% Moderate	41.9
	% Conservative	19
Religiosity	<i>n</i>	258
	% Not Very Religious	60.9
	% Moderately Religious	15.5
	% Very Religious	23.6
Victim of Crime	<i>n</i>	258
	% Yes	21.7
	% No	74.8
	% Unsure	3.5

The Retribution Scale, a 5-item scale, was administered after each of the six crime scenarios. It showed moderate internal consistency for each scenario, with Cronbach's alpha coefficients of greater than .7. The Consequentialist Scale, a 2-item scale, was also administered after each of the six crime vignettes. It showed moderate internal consistency for some crime scenarios, but for others fell below acceptable

levels. Since Cronbach alpha values are sensitive to the number of items in a scale, this is not surprising. For such scales, inter-item correlations (optimally between .2 and .4) are suggested as an alternative indicator of consistency (Briggs & Cheek, 1986), which are shown below in Table 5.27. However, these values also suggest problematic levels of internal consistency on the Consequentialist Scale.

Table 5.27
Reliability of Scales

Scale	Number of Items	Cronbach α	Pearson inter-item correlation
Retribution	5		
Drug Crime (scenario 1)		.74	
Drug Crime (scenario 2)		.76	
Property Crime (scenario 1)		.77	
Property Crime (scenario 2)		.78	
Violent Crime (scenario 1)		.78	
Violent Crime (scenario 2)		.78	
Consequentialist	2		
Drug Crime (scenario 1)		.76	.61
Drug Crime (scenario 2)		.7	.53
Property Crime (scenario 1)		.75	.6
Property Crime (scenario 2)		.71	.55
Violent Crime (scenario 1)		.61	.44
Violent Crime (scenario 2)		.59	.42

A one-way repeated measures ANOVA was conducted to compare participants' scores on both the Retribution Scale and the Consequentialist Scale in response to crime vignettes spanning the severity spectrum, from drug crime, to property crime, to violent crime. The means and standard deviations are presented below in Tables 5.28 and 5.29. As expected, participants' mean scores on the Retribution Scale increased and dispersion decreased across the crime severity spectrum, with crime severity having a significant effect on support for retribution [Wilks' Lambda=.41, $F(2, 256)=183.9$, $p<.000$, multivariate partial eta squared=.59.] However, while crime severity also had a significant effect on the Consequentialist Scale scores [Wilks' Lambda=.765, $F(2, 256)=39.2$, $p<.000$, multivariate partial eta squared=.24.], the data indicated no clear pattern in relation to the crime severity spectrum.

Table 5.28
Descriptive Statistics for Retribution Scales

Retribution Scale	N	Min	Max	Mean	Standard Deviation
Drug Crime	258	1	7	5	1.2
Property Crime	248	3	7	5.8	1
Violent Crime	248	2.5	7	6.3	.9

Table 5.29
Descriptive Statistics for Consequentialist Scales

Consequentialist Scale	N	Min	Max	Mean	Standard Deviation
Drug Crime	248	1	7	5.3	1.5
Property Crime	248	1	7	5.5	1.4
Violent Crime	248	1	7	4.6	1.7

An independent-samples t-test was conducted to compare the experimental condition (90% White and 10%Black) to a control group (50%White and 50%Black). There were no statistically significant differences in scores on any measure, as shown in Table 5.30 below.

Table 5.30
t-tests Results: Retribution and Consequentialist Scales

	90% White 10% Black Prison Population (N=125)		50% White 50% Black Prison Population (N=133)		t-test	p
	M	SD	M	SD		
Retribution (drug crime)	5.09	1.06	4.92	1.33	-1.2	.23
Retribution (property crime)	5.78	1.05	5.83	1.02	-.39	.69
Retribution (violent crime)	6.27	.98	6.35	.8	-.75	.46
Consequentialist (drug crime)	5.23	1.61	5.35	1.44	-.66	.51
Consequentialist (property crime)	5.49	1.45	5.51	1.29	-.15	.88
Consequentialist (violent crime)	4.74	1.71	4.55	1.69	.86	.39

*<.05, **<.01, ***<.001

In a follow-up to this experimental study, regression analyses were conducted to examine the experimental condition's effect while statistically controlling for other well-documented predictors.

Drug Crime (Retribution Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + e,$$

where Y = support for retribution against drug crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = experimental condition relative to control); x_{11} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.31 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, blame was the most strongly correlated with support for retribution against drug crime (.59), followed by political ideology (.24), religiosity (.21), Asian (.18), victimized (.13), age (.13), and black (-.12). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.32, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.31
Pearson-Product Moment: Drug Crime Retribution

	1	2	3	4	5	6	7	8	9	10	11	12
1: Drug Crime (retribution)	—											
2: Age	0.13*	—										
3: Education	-0.05	0.19***	—									
4: Political Ideology	0.24***	0.16**	-0.04	—								
5: Religiosity	0.21***	0.17**	0.03	0.46***	—							
6: Black	-0.12*	-0.19**	-0.02	-0.03	0.14*	—						
7: Hispanic	-0.04	-0.09	0.07	-0.12*	-0.06	-0.09	—					
8: Asian	0.18**	-0.04	0.12*	-0.10*	-0.06**	-0.09	-0.08	—				
9: Female	0.08	0.09	-0.01	-0.09	0.18	0.00	0.01	-0.06	—			
10: Victimized	0.13*	-0.12*	0.04	0.01	0.03	0.00	-0.06	0.02	-0.09	—		
11: Exp Condition	0.08	0.05	0.07	-0.07	0.03	-0.07	0.04	0.03	-0.01	-0.06	—	
12: Blame	0.59***	0.14*	-0.03	0.25***	0.19**	0.05	-0.07	0.01	-0.03	0.12*	0.06	—

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

Table 5.32
Collinearity Statistics

Collinearity Statistics		
Variable	Tolerance	VIF
Age	0.83	1.20
Education	0.92	1.09
Political Ideology	0.69	1.44
Religiosity	0.70	1.44
Black	0.89	1.13
Hispanic	0.94	1.06
Asian	0.94	1.06
Female	0.91	1.10
Victimized	0.94	1.06
Exp. Condition	0.97	1.04
Blame	0.89	1.12

Table 5.33 displays the regression analysis results for both model 1 (all predictors except blame) and model 2 (full model). Model 1 significantly predicted support for retribution against drug crime, $R^2=.17$, $R^2_{adj}=.13$, $F(10, 254)=4.8$, $p<.001$. Overall, it accounted for 17% of the variation. Three variables were statistically significant: Asian had the strongest effect, followed by political ideology and victimized. Least-squares yields the following estimates of these coefficients:

$$\hat{Y} = 3.9 + 1.0 (\text{Asian}) + .13 (\text{Political Ideology}) + .42 (\text{Victimized})$$

Model 2 was also statistically significant, $R^2=.43$, $R^2_{adj}=.41$, $F(11, 252)=16.7$, $p<.001$. This model accounted for 43% of the variation, appreciably more than model 1. Four variables were statistically significant: blame had the strongest effect, followed by Asian, black, and female. Least-squares yields the following estimates:

$$\hat{Y} = 2.65 + .35 (\text{Blame}) + .87 (\text{Asian}) - .50 (\text{Black}) + .26 (\text{Female})$$

The addition of blame had several consequences: it damped the effect of Asian, mediated completely the effects of political ideology and victimized, and revealed a suppression effect of black and female.

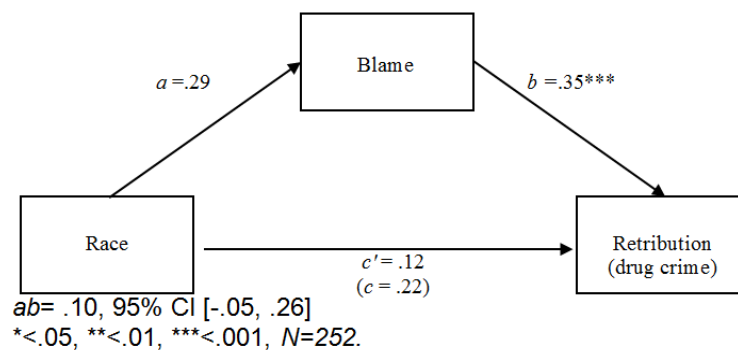
Table 5.33
Hierarchical Regression: Drug Crime Retribution

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Age	0.01	0.01	0.10	0.00	0.01	0.02
Education	-0.12	0.07	-0.10	-0.08	0.06	-0.07
Political Ideology	0.13**	0.04	0.20	0.06	0.04	0.10
Religiosity	0.03	0.03	0.10	0.03	0.02	0.07
Black	-0.31	0.25	-0.08	-0.50*	0.21	-0.12
Hispanic	0.09	0.28	0.02	0.11	0.23	0.02
Asian	1.00***	0.27	0.22	0.87***	0.23	0.19
Female	0.23	0.15	0.09	0.26*	0.12	0.11
Victimized	0.42*	0.17	0.15	0.20	0.14	0.07
Exp. Condition	0.20	0.14	0.09	0.12	0.12	0.05
Blame				0.35***	0.03	0.54
<i>R</i> ²			0.17			0.43
Adjusted <i>R</i> ²			0.13			0.41
<i>F</i>			4.85***			16.72***

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

Bootstrapping was also used to empirically test the effect of blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after controlling for covariates in the model, showed that blame does not indirectly influence the relationship between the race manipulation and support for retribution against drug crime, since the 95% bias-corrected confidence interval includes zero, $ab = .10$, 95% CI $[-.05, .26]$ (Hayes, 2013).

Figure 5.7
Indirect Effect of Race on Drug Crime Retribution via Blame



Property Crime (Retribution Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + e,$$

where Y = support for retribution against property crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = experimental condition relative to control; x_{11} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.34 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, blame was the most strongly correlated with support for retribution against drug crime (.58), followed by Asian (.19) age (.12), and victimized (.12). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.35, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.34
Pearson Product-Moment: Property Crime Retribution

	1	2	3	4	5	6	7	8	9	10	11	12
1: Property Crime (retribution)												
2: Age	0.12*											
3: Education	-0.08	0.18**										
4: Political Ideology	0.07	0.17**	-0.05									
5: Religiosity	0.07	0.17**	0.02	0.46***								
6: Black	-0.08	-0.19**	-0.02	-0.03	0.14*							
7: Hispanic	-0.05	-0.09	0.07	-0.12*	-0.06	-0.09						
8: Asian	0.19***	-0.04	0.12*	-0.11*	-0.06	-0.09	-0.08					
9: Female	0.10	0.10	-0.02	-0.09	0.18**	0.00	0.01	-0.06				
10: Victimized	0.12*	-0.11*	0.04	0.01	0.03	0.00	-0.06	0.03	-0.08			
11: Exp Condition	0.02	0.05	0.07	-0.07	0.04	-0.07	0.04	0.02	-0.01	-0.06		
12: Blame	0.58***	0.20***	0.00	-0.05	0.00	0.05	-0.08	0.05	0.14*	-0.02	0.07	
* < .05, ** < .01, *** < .001												

Table 5.35
Collinearity Statistics

Collinearity Statistics		
Variable	Tolerance	VIF
Age	0.81	1.23
Education	0.93	1.08
Political Ideology	0.71	1.41
Religiosity	0.69	1.44
Black	0.89	1.13
Hispanic	0.94	1.06
Asian	0.94	1.06
Female	0.89	1.12
Victimized	0.97	1.04
Exp. Condition	0.97	1.04
Blame	0.92	1.09

Table 5.36 displays the regression analysis results. Model 1 significantly predicted support for retribution against property crime, $R^2=.10$, $R^2_{adj}=.07$, $F(10, 254)=2.8$, $p<.003$. Overall, it accounted for 10% of the variation. Four variables were statistically significant: Asian contributed the most, followed by age, victimized, and education. Least-squares yields the following estimates of these coefficients:

$$\hat{Y} = 5.27 + .85 (\text{Asian}) + .01 (\text{Age}) + .33 (\text{Victimized}) - .14 (\text{Education})$$

Model 2 was also statistically significant, $R^2=.41$, $R^2_{adj}=.39$, $F(11, 254)=16.7$, $p<.001$. This model accounted for 41% of the variation, appreciably more than model 1. Four variables were statistically significant: blame had the strongest effect, followed by Asian, education, and female. Least-squares yields the following estimates:

$$\hat{Y} = .99 + .71 (\text{Blame}) + .70 (\text{Asian}) - .11 (\text{Education}) + .06 (\text{Female})$$

The inclusion of blame in the model slightly diminished the effects of Asian and education, washed out the effects of victimized and age, and revealed a suppression effect of gender.

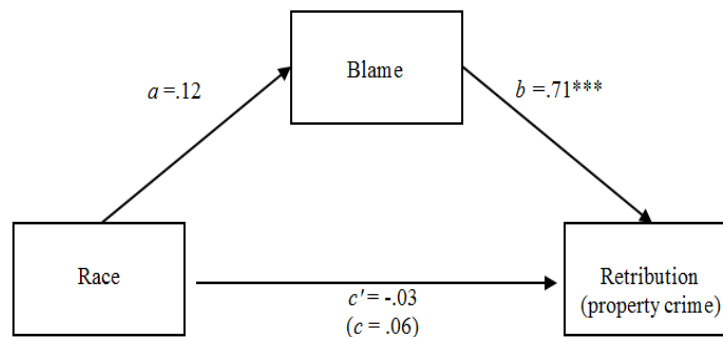
Table 5.36
Hierarchical Regression: Property Crime Retribution

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Age	0.01*	0.01	0.14	0.00	0.00	0.01
Education	-0.14*	0.07	-0.13	-0.11*	0.05	-0.11
Political Ideology	0.03	0.04	0.06	0.05	0.03	0.09
Religiosity	0.01	0.02	0.02	0.02	0.02	0.05
Black	-0.11	0.23	-0.03	-0.33	0.19	-0.09
Hispanic	0.02	0.25	0.01	0.15	0.21	0.04
Asian	0.85***	0.25	0.22	0.70***	0.20	0.18
Female	0.22	0.13	0.11	0.06*	0.11	0.03
Victimized	0.33*	0.15	0.14	0.31	0.12	0.13
Exp. Condition	0.06	0.13	0.03	-0.03	0.10	-0.01
Blame				0.71***	0.06	0.58
<i>R</i> ²			0.10			0.41
Adjusted <i>R</i> ²			0.07			0.39
<i>F</i>			2.77**			15.44***

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

Bootstrapping was also used to empirically test the effect of blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for covariates in the model, showed that blame does not indirectly influence the relationship between the race manipulation and support for retribution against property crime, since the 95% bias-corrected confidence interval includes zero, $ab = .09$, 95% CI $[-.06, .24]$ (Hayes, 2013).

Figure 5.8
Indirect Effect of Race on Property Crime Retribution via Blame



* $<.05$, ** $<.01$, *** $<.001$, $N=254$.

Violent Crime (Retribution Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + e,$$

where Y = support for retribution against violent crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = experimental condition relative to control; x_{11} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.37 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, blame was the most strongly correlated with support for retribution against drug crime (.63), followed by education, (-.18), Asian (.16), and female (.11). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.38, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.37
Pearson Product-Moment: Violent Crime Retribution

	1	2	3	4	5	6	7	8	9	10	11	12
1: Violent Crime (retribution)												
2: Age	0.08											
3: Education	-0.18**	0.19***										
4: Political Ideology	0.05	0.17**	-0.06									
5: Religiosity	0.07	0.17**	0.02	0.45***								
6: Black	-0.09	-0.18**	-0.02	-0.03	0.14*							
7: Hispanic	-0.06	-0.09	0.07	-0.12*	-0.06	-0.09						
8: Asian	0.16**	-0.04	0.12*	-0.11*	-0.06	-0.09	-0.08					
9: Female	0.11*	0.10	-0.02	-0.08	0.18**	-0.01	0.01	-0.06				
10: Victimized	0.06	-0.12*	0.04	0.01	0.03	0.00	-0.05	0.03	-0.08			
11: Exp Condition	0.05	0.05	0.06	-0.08	0.03	-0.07	0.04	0.02	-0.01	-0.06		
12: Blame	0.63***	0.15**	-0.16**	-0.07	-0.03	-0.03	-0.03	0.02	0.12*	-0.05	0.08	
* < .05, ** < .01, *** < .001												

Table 5.38
Collinearity Statistics

Collinearity Statistics		
Variable	Tolerance	VIF
Age	0.82	1.23
Education	0.89	1.13
Political Ideology	0.71	1.40
Religiosity	0.70	1.43
Black	0.90	1.12
Hispanic	0.94	1.06
Asian	0.94	1.06
Female	0.90	1.11
Victimized	0.97	1.04
Exp. Condition	0.97	1.04
Blame	0.91	1.10

Table 5.39 displays the regression analysis results. Model 1 significantly predicted support for retribution against violent crime, $R^2=.11$, $R^2_{adj}=.07$, $F(10, 254)=3.0$, $p<.001$. Overall, it accounted for 11% of the variation. Two variables were statistically significant: education contributed the most, followed by Asian. Least-squares yields the following estimates of these coefficients:

$$\hat{Y} = 6.3 - .20 (\text{Education}) + .67 (\text{Asian})$$

Model 2 was also statistically significant, $R^2=.46$, $R^2_{adj}=.44$, $F(11, 252)=18.8$, $p<.001$. This model accounted for 46% of the variation, appreciably more than model 1. Two variables were statistically significant: blame had the strongest effect, followed by Asian. Least-squares yields the following estimates:

$$\hat{Y} = 1.15 + .76 (\text{Blame}) + .56 (\text{Asian})$$

The inclusion of blame in the model diminished the effect of Asian, and completely mediated the effect of education.

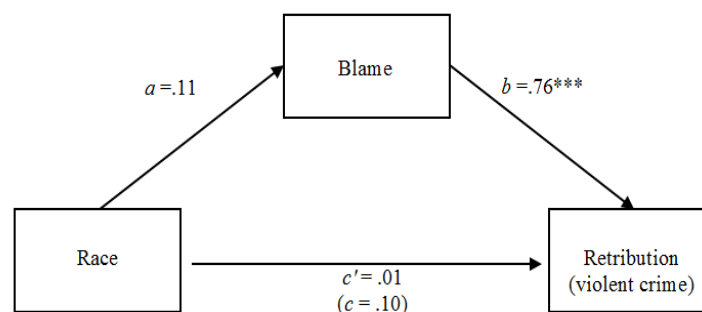
Hierarchical Regression: Violent Crime Retribution

Variable	Model 1			Model 2		
	B	SE	β	B	SE	β
Age	0.01	0.01	0.10	0.00	0.00	-0.03
Education	-0.20***	0.06	-0.23	-0.09	0.05	-0.10
Political Ideology	0.02	0.03	0.04	0.04	0.03	0.09
Religiosity	0.01	0.02	0.03	0.02	0.02	0.06
Black	-0.19	0.20	-0.06	-0.22	0.15	-0.07
Hispanic	-0.06	0.22	-0.02	-0.03	0.17	-0.01
Asian	0.67**	0.21	0.20	0.56***	0.17	0.17
Female	0.19	0.12	0.11	0.09	0.09	0.05
Victimized	0.18	0.13	0.09	0.18	0.10	0.09
Exp. Condition	0.10	0.11	0.05	0.01	0.09	0.01
Blame				0.76***	0.06	0.62
R^2			0.11			0.46
Adjusted R^2			0.07			0.44
F			3.01***			18.80***

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

Bootstrapping was also used to empirically test the effect of blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for covariates in the model, showed that blame does not indirectly influence the relationship between the race manipulation and support for retribution against violent crime, since the 95% bias-corrected confidence interval includes zero, $ab = .09$, 95% CI $[-.05, .24]$ (Hayes, 2013).

Figure 5.9
Indirect Effect of Race on Violent Crime Retribution via Blame



$ab = .09$, 95% CI $[-.05, .24]$

* $p < .05$, ** $p < .01$, *** $p < .001$, $N = 252$.

Drug Crime (Consequentialist Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + e,$$

where Y = support a consequentialist response to drug crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = experimental condition relative to control; x_{11} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.40 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, blame was the most strongly correlated with support for retribution against drug crime (.17), followed by political ideology, (.17), female (.15), and black (.15). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.41, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.40
Pearson Product-Moment: Drug Crime Consequentialist

	1	2	3	4	5	6	7	8	9	10	11	12
1: Drug Crime (consequentialist)	—											
2: Age	0.08	—										
3: Education	0.10	0.19**	—									
4: Political Ideology	-0.17**	0.16**	-0.04	—								
5: Religiosity	-0.03	0.17**	0.03	0.46***	—							
6: Black	0.15**	-0.19**	-0.02	-0.03	0.14*	—						
7: Hispanic	0.10	-0.09	0.07	-0.12*	-0.06	-0.09	—					
8: Asian	-0.08	-0.04	0.12*	-0.10*	-0.06	-0.09	-0.08	—				
9: Female	0.15**	0.09	-0.01	-0.09	0.18**	0.00	0.01	-0.06	—			
10: Victimized	-0.03	-0.12*	0.04	0.01	0.03	0.00	-0.06	0.02	-0.09	—		
11: Exp Condition	0.04	0.05	0.07	-0.07	0.03	-0.07	0.04	0.03	-0.01	-0.06	—	
12: Blame	0.17**	0.14*	-0.03	0.25***	0.19**	0.05	-0.07	0.01	-0.03	0.12*	0.06	—

*<.05, **<.01, ***<.001

Table 5.41
Collinearity Statistics

Collinearity Statistics		
Variable	Tolerance	VIF
Age	0.83	1.20
Education	0.92	1.09
Political Ideology	0.69	1.44
Religiosity	0.70	1.44
Black	0.89	1.13
Hispanic	0.94	1.06
Asian	0.94	1.06
Female	0.91	1.10
Victimized	0.94	1.06
Exp. Condition	0.97	1.04
Blame	0.89	1.12

Table 5.42 displays the regression analysis results. Model 1 significantly predicted support for a consequentialist response to drug crime, $R^2=.10$, $R^2_{adj}=.07$, $F(10, 254)=2.8$, $p<.003$. Overall, it accounted for 10% of the variation. Three variables were statistically significant: black contributed the most, followed by political ideology and female. Least-squares yields the following estimates of these coefficients:

$$\hat{Y} = 4.5 + .94 (\text{Black}) - .11 (\text{Political Ideology}) + .43 (\text{Female})$$

Model 2 was also statistically significant, $R^2=.15$, $R^2_{adj}=.11$, $F(11, 252)=3.83$, $p<.001$. This model accounted for 15% of the variation, slightly more than model 1. Two variables were statistically significant: blame had the strongest effect, followed by Asian. Least-squares yields the following estimates:

$$\hat{Y} = 3.83 + .19 (\text{Blame}) - .15 (\text{Political Ideology}) + .85 (\text{Black}) + .43 (\text{Female})$$

The inclusion of blame had a negligible effect on the significant predictors in model 1.

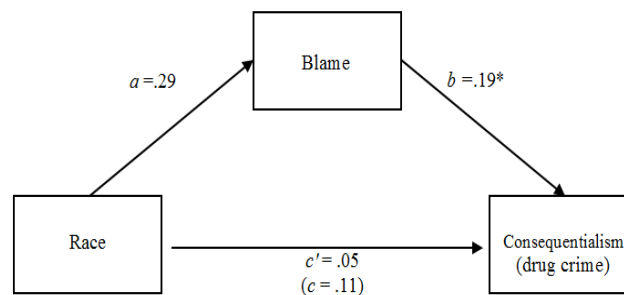
Hierarchical Regression: Drug Crime Consequentialist

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Age	0.02	0.01	0.13	0.01	0.01	0.09
Education	0.10	0.10	0.07	0.13	0.10	0.09
Political Ideology	-0.11*	0.06	-0.14	-0.15**	0.06	-0.19
Religiosity	-0.02	0.03	-0.03	-0.02	0.03	-0.05
Black	0.94**	0.34	0.18	0.85*	0.33	0.16
Hispanic	0.54	0.37	0.09	0.55	0.37	0.09
Asian	-0.41	0.36	-0.07	-0.48	0.36	-0.08
Female	0.43*	0.20	0.14	0.43*	0.19	0.14
Victimized	0.04	0.22	0.01	-0.09	0.22	-0.03
Exp. Condition	0.12	0.19	0.04	0.05	0.19	0.02
Blame				0.19***	0.05	0.23
<i>R</i> ²			0.10			0.15
Adjusted <i>R</i> ²			0.07			0.11
<i>F</i>			2.80**			3.83***

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

Bootstrapping was also used to empirically test the effect of blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after controlling for covariates in the model, showed that blame does not indirectly influences the relationship between the race manipulation and a consequentialist response to drug crime, since the 95% bias-corrected confidence interval includes zero, $ab = .05$, 95% CI $[-.02, .18]$ (Hayes, 2013).

Figure 5.10
Indirect Effect of Race on Drug Crime Consequentialism via Blame



Property Crime (Consequentialist Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + e,$$

where Y = support a consequentialist response to property crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = experimental condition; x_{11} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.43 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, blame was the most strongly correlated with support for retribution against property crime (-.34), followed by blame, (.23), female (.16), Asian (-.14), and black (.11). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.44, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.43
Pearson Product-Moment: Property Crime Consequentialist

	1	2	3	4	5	6	7	8	9	10	11	12
1: Property Crime (consequentialist)	—											
2: Age	-0.05	—										
3: Education	0.05	0.18**	—									
4: Political Ideology	-0.34***	0.17**	-0.05	—								
5: Religiosity	-0.09	0.17**	0.02	0.46***	—							
6: Black	0.11*	-0.19**	-0.02	-0.03	0.14*	—						
7: Hispanic	0.02	-0.09	0.07	-0.12*	-0.06	-0.09	—					
8: Asian	-0.14*	-0.04	0.12*	-0.11*	-0.06	-0.09	-0.08	—				
9: Female	0.16**	0.10	-0.02	-0.09	0.18**	0.00	0.01	-0.06	—			
10: Victimized	-0.02	-0.11*	0.04	0.01	0.03	0.00	-0.06	0.03	-0.08	—		
11: Exp Condition	0.01	0.05	0.07	-0.07	0.04	-0.07	0.04	0.02	-0.01	-0.06	—	
12: Blame	0.23***	0.20***	0.00	-0.05	0.00	0.05	-0.08	0.05	0.14*	-0.02	0.07	—

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

Table 5.44
Collinearity Statistics

Collinearity Statistics		
Variable	Tolerance	VIF
Age	0.81	1.23
Education	0.93	1.08
Political Ideology	0.71	1.41
Religiosity	0.69	1.44
Black	0.89	1.13
Hispanic	0.94	1.06
Asian	0.94	1.06
Female	0.89	1.12
Victimized	0.97	1.04
Exp. Condition	0.97	1.04
Blame	0.92	1.09

Table 5.45 displays the regression analysis results. Model 1 significantly predicted support for a consequentialist response to property crime, $R^2 = .17$, $R^2_{adj} = .14$, $F(10, 254) = 5.1$, $p < .001$. Overall, it accounted for 17% of the variation. Two variables were significant: political ideology contributed the most, followed by Asian. Least-squares yields the following estimates of these coefficients:

$$\hat{Y} = 6.02 - .26 (\text{Political Ideology}) - .9 (\text{Asian})$$

Model 2 was also statistically significant, $R^2 = .22$, $R^2_{adj} = .18$, $F(11, 254) = 6.07$, $p < .001$. This model accounted for 22% of the variation, a modest increase from model 1. Three variables were statistically significant: political ideology had the strongest effect, followed by blame, and Asian. Least-squares yields the following estimates:

$$\hat{Y} = 3.9 - .25 (\text{Political Ideology}) + .35 (\text{Blame}) - .98 (\text{Asian})$$

The inclusion of blame had a negligible effect on the significant predictors in model 1.

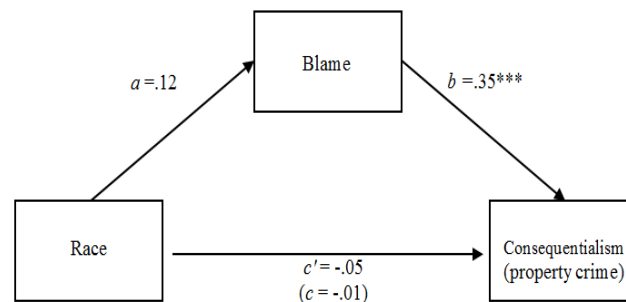
Hierarchical Regression: Property Crime Consequentialist

Variable	Model 1			Model 2		
	B	SE	β	B	SE	β
Age	0.00	0.01	-0.02	-0.01	0.01	-0.07
Education	0.09	0.08	0.06	0.10	0.08	0.07
Political Ideology	-0.26***	0.05	-0.36	-0.25***	0.05	-0.35
Religiosity	0.02	0.03	0.04	0.02	0.03	0.05
Black	0.34	0.29	0.07	0.23	0.28	0.05
Hispanic	-0.19	0.32	-0.04	-0.12	0.31	-0.02
Asian	-0.90**	0.31	-0.17	-0.98**	0.31	-0.19
Female	0.32	0.17	0.12	0.24	0.17	0.09
Victimized	-0.01	0.19	0.00	-0.03	0.18	-0.01
Exp. Condition	-0.01	0.16	0.00	-0.05	0.16	-0.02
Blame				0.35***	0.10	0.22
R^2			0.17			0.22
Adjusted R^2			0.14			0.18
F			5.08***			6.07***

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

Bootstrapping was also used to empirically test the effect of blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for covariates in the model, showed that blame does not indirectly influence the relationship between the race manipulation and a consequentialist response to property crime, since the 95% bias-corrected confidence interval includes zero, $ab = .04$, 95% CI $[-.02, .15]$ (Hayes, 2013).

Figure 5.11
Indirect Effect of Race on Property Crime Consequentialism via Blame



$ab = .04$, 95% CI $[-.02, .15]$

* $<.05$, ** $<.01$, *** $<.001$, $N=254$.

Violent Crime (Consequentialist Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + e,$$

where Y = support a consequentialist response to violent crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = experimental condition relative to control; x_{11} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.46 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, black was the most strongly correlated with support for retribution against violent crime (.16), followed by political ideology (-.13), and age (-.13). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.47, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.46
Pearson Product-Moment: Violent Crime Consequentialist

	1	2	3	4	5	6	7	8	9	10	11	12
1: Violent Crime (consequentialist)	—											
2: Age	-0.13*	—										
3: Education	0.08	0.19***	—									
4: Political Ideology	-0.13*	0.17**	-0.06	—								
5: Religiosity	0.03	0.17**	0.02	0.45***	—							
6: Black	0.16**	-0.18**	-0.02	-0.03	0.14*	—						
7: Hispanic	0.03	-0.09	0.07	-0.12*	-0.06	-0.09	—					
8: Asian	-0.03	-0.04	0.12*	-0.11*	-0.06	-0.09	-0.08	—				
9: Female	-0.01	0.10	-0.02	-0.08	0.18**	-0.01	0.01	-0.06	—			
10: Victimized	-0.02	-0.12*	0.04	0.01	0.03	0.00	-0.05	0.03	-0.08	—		
11: Exp Condition	-0.06	0.05	0.06	-0.08	0.03	-0.07	0.04	0.02	-0.01	-0.06	—	
12: Blame	0.02	0.15**	-0.16**	-0.07	-0.03	-0.03	-0.03	0.02	0.12*	-0.05	0.08	—

*<.05, **<.01, ***<.001

Table 5.47
Collinearity Statistics

Variable	Collinearity Statistics	
	Tolerance	VIF
Age	0.82	1.23
Education	0.89	1.13
Political Ideology	0.71	1.40
Religiosity	0.70	1.43
Black	0.90	1.12
Hispanic	0.94	1.06
Asian	0.94	1.06
Female	0.90	1.11
Victimized	0.97	1.04
Exp. Condition	0.97	1.04
Blame	0.91	1.10

Table 5.48 displays the regression analysis results. Model 1 was not statistically significant, $R^2=.07$, $R^2_{adj}=.03$, $F(10, 254)=1.8$, $p<.066$. Political ideology was the only statistically significant variable in the model. Nor was model 2 statistically significant, $R^2=.07$, $R^2_{adj}=.03$, $F(11, 252)=1.72$, $p<.07$. Once again, political ideology was the only statistically significant variable, and was undiminished after adjusting for blame.

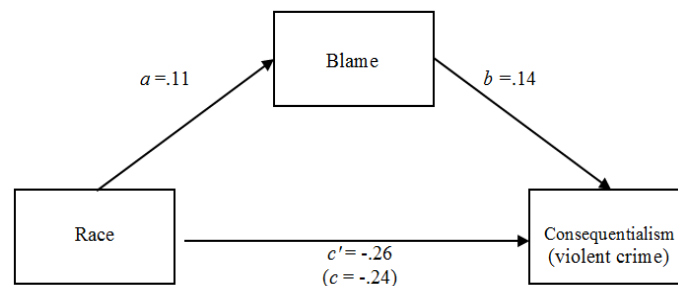
Table 5.48
Hierarchical Regression: Violent Crime Consequentialist

Variable	Model 1			Model 2		
	B	SE	β	B	SE	β
Age	-0.01	0.01	-0.11	-0.02	0.01	-0.13
Education	0.15	0.11	0.09	0.19	0.11	0.11
Political Ideology	-0.15*	0.07	-0.17	-0.14*	0.07	-0.16
Religiosity	0.06	0.04	0.11	0.06	0.04	0.11
Black	0.62	0.38	0.11	0.63	0.38	0.11
Hispanic	0.02	0.42	0.00	0.04	0.42	0.01
Asian	-0.28	0.41	-0.04	-0.29	0.41	-0.05
Female	-0.14	0.22	-0.04	-0.13	0.23	-0.04
Victimized	-0.13	0.25	-0.03	-0.15	0.25	-0.04
Exp. Condition	-0.26	0.21	-0.08	-0.26	0.22	-0.08
Blame				0.14	0.15	0.06
R^2			0.07			0.07
Adjusted R^2			0.03			0.03
F for change in R^2			1.77			1.72

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

Bootstrapping was also used to empirically test the effect of blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for covariates in the model, showed that blame does not indirectly influences the relationship between the race manipulation and a consequentialist response to violent crime, since the 95% bias-corrected confidence interval includes zero, $ab = .02$, 95% CI $[-.01, .10]$ (Hayes, 2013).

Figure 5.12
Indirect Effect of Race on Violent Crime Consequentialism via Blame



$ab = .02$, 95% CI $[-.01, .10]$

* $<.05$, ** $<.01$, *** $<.001$, $N=256$.

Study 4: Free Will Doubt

Drawn from the Mechanical Turk worker pool, this study included 245 participants who successfully completed the tasks. Forty-eight percent of the participants were female ($n=125$) and 46% percent were male ($n=118$). Seventy-one percent of participants identified as White ($n=182$), 9% percent as Black ($n=22$), 7% as Asian ($n=17$), and 7% percent as Hispanic ($n=18$). Ages ranged from 18 to 66, with a mean age of 36.5 ($SD=11.4$); thirty-three percent of participants were in their 20s ($n=85$), 30% were in their 30s ($n=78$), 15% in their 40s ($n=38$), and 12% in their 50s ($n=30$). Forty-two percent of participants completed a bachelor's degree ($n=107$), 27% high school ($n=70$), and 15% an associate's degree ($n=38$). On a single-item measure of political orientation, 44% of participants indicated moderate ($n=113$), 33% percent liberal ($n=85$), and 18% conservative ($n=47$). On a single-item measure of religiosity, 49% indicated not very religious ($n=126$), 25% very religious ($n=64$), and 21% moderately religious ($n=55$). Twenty-one percent ($n=54$) reported having been the victim of a crime.

Table 5.49
Demographics of Study 4 Sample

Characteristic		Total Sample
Gender	<i>n</i>	244
	% Male	45.7
	% Female	48.4
	%Other	.4
Ethnicity	<i>n</i>	245
	% White	70.5
	% Black	8.5
	% Asian	6.6
	% Hispanic	7.0
	% Other	2.3
Age	<i>n</i>	258
	% < 20	.8
	% 20-29	32.9
	% 30 -39	30.2
	% 40-49	14.7
	% 50-59	11.6
	% > 59	3.1
Education	<i>n</i>	244
	% Less than High School	.4
	% High School	27.1
	% Associate Degree	14.7
	% Bachelor Degree	41.5
	% Graduate Degree	10.9
Political Orientation	<i>n</i>	245
	% Liberal	34.7
	% Moderate	46.1
	% Conservative	19.2
Religiosity	<i>n</i>	245
	% Not Very Religious	48.8
	% Moderately Religious	21.3
	% Very Religious	24.8
Victim of Crime	<i>n</i>	245
	% Yes	20.9
	% No	68.6
	% Unsure	5.4

The Retribution Scale, a 5-item scale, was administered after each of the six crime scenarios. It showed moderate internal consistency for each scenario, with Cronbach's alpha coefficients of greater than .7. The Consequentialist Scale, a 2-item scale, was also administered after each of the six crime vignettes. It showed moderate

internal consistency for some crime scenarios, but for others fell below acceptable levels. Since Cronbach alpha values are sensitive to the number of items in a scale, this is not surprising. For such scales, inter-item correlations (optimally between .2 and .4) are suggested as an alternative indicator of consistency (Briggs & Cheek, 1986), which are shown below in Table 5.50. However, these values also suggest problematic levels of internal consistency on the Consequentialist Scale.

Table 5.50
Reliability of Scales

Scale		Number of Items	Cronbach α	Pearson inter-item correlation
Retribution		5		
	Drug Crime (scenario 1)		.74	
	Drug Crime (scenario 2)		.76	
	Property Crime (scenario 1)		.77	
	Property Crime (scenario 2)		.78	
	Violent Crime (scenario 1)		.78	
	Violent Crime (scenario 2)		.78	
Consequentialist		2		
	Drug Crime (scenario 1)		.76	.65
	Drug Crime (scenario 2)		.7	.5
	Property Crime (scenario 1)		.75	.46
	Property Crime (scenario 2)		.71	.54
	Violent Crime (scenario 1)		.61	.44
	Violent Crime (scenario 2)		.59	.34
FAD-Plus Subscale		7	.82	

A one-way repeated measures ANOVA was conducted to compare participants' scores on both the Retribution Scale and the Consequentialist Scale in response to crime vignettes spanning the severity spectrum, from drug crime, to property crime, to violent crime. The means and standard deviations are presented in below in Tables 5.51 and 5.52. As expected, participants' mean scores on the Retribution Scale increased and dispersion decreased across the crime severity spectrum, with crime severity having a significant effect on support for retribution [Wilks' Lambda=.45, $F(2, 243)=150.4$, $p<.000$, multivariate partial eta squared=.55.] However, while crime severity also had a significant effect on the Consequentialist Scale scores [Wilks'

Lambda=.79, $F(2, 243)=33.3$, $p<.000$, multivariate partial eta squared=.22.], the data indicated no clear pattern in relation to the crime severity spectrum.

Table 5.51
Descriptive Statistics for Retribution Scales

Retribution Scale	N	Min	Max	Mean	Standard Deviation
Drug Crime	245	1.2	7	5	1.2
Property Crime	245	1.2	7	5.7	1.09
Violent Crime	245	1.4	7	6.2	1.07

Table 5.52
Descriptive Statistics for Consequentialist Scales

Consequentialist Scale	N	Min	Max	Mean	Standard Deviation
Drug Crime	245	1	7	5.34	1.5
Property Crime	245	1	7	5.39	1.4
Violent Crime	245	1	7	4.65	1.6

An independent-samples t-test was conducted to compare the experimental condition (anti-free-will) to a control group. There were no significant differences in scores on any measure, as shown in Table 5.53 below.

Table 5.53
t-tests Results: Retribution and Consequentialist Scales

	Anti-Free-Will Condition (N=130)		Control (N=115)		t-test	p
	M	SD	M	SD		
Retribution (drug crime)	5.02	1.14	4.97	1.26	.35	0.73
Retribution (property crime)	5.73	.96	5.73	1.22	-.039	0.97
Retribution (violent crime)	6.19	0.96	6.12	1.18	.52	0.60
Consequentialist (drug crime)	5.35	1.40	5.33	1.59	.122	0.90
Consequentialist (property crime)	5.39	1.32	5.40	1.43	-.022	0.98
Consequentialist (violent crime)	4.61	1.59	4.70	1.66	-.435	0.66

*<.05, **<.01, ***<.001

In a follow-up to this experimental study, regression analyses were conducted to examine the experimental condition's effect while statistically controlling for other explanatory variables.

Drug Crime (Retribution Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + b_{12}X_{12} e,$$

where Y = support for retribution against drug crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = experimental condition in relation to control; x_{11} = free will doubt (measured on a 5-point scale); x_{12} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.54 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, blame was the most strongly correlated with support for retribution against drug crime (.56), followed by free-will doubt (-.44), political ideology (.30), religiosity (.30), age (.16), and black (.11). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.55, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.54
Pearson Product-Moment: Drug Crime Retribution

	1	2	3	4	5	6	7	8	9	10	11	12	13
1: Drug Crime (retribution)	—												
2: Age	0.16**	—											
3: Education	0.01	0.01	—										
4: Political Ideology	0.30***	-0.02	-0.17**	—									
5: Religiosity	0.30***	0.09	0.03	0.35***	—								
6: Black	0.11*	-0.04	-0.03	0.08	0.15**	—							
7: Hispanic	0.01	-0.07	-0.08	0.08	-0.03	-0.09	—						
8: Asian	-0.04	-0.12*	0.10*	-0.07	0.03	-0.09	-0.08	—					
9: Female	0.09	0.15*	0.04	-0.09	0.14*	-0.04	-0.02	0.04	—				
10: Victimized	0.00	0.01	-0.17**	0.11*	0.05	0.18**	0.05	-0.03	0.11*	—			
11: Condition	0.03	0.01	-0.05	0.09*	-0.02	0.07	0.03	-0.07	-0.03	0.05	—		
12: FWD	-0.44***	-0.01	0.08	-0.35***	-0.29***	-0.23***	-0.01	0.08	-0.07	-0.13*	-0.03	—	
13: Blame	0.56***	0.18**	0.00	0.19**	0.24***	0.18**	-0.05	-0.04	0.13*	0.06	0.11*	-0.38***	—
* < .05, ** < .01, *** < .001													

Table 5.55
Collinearity Statistics

Variable	Collinearity Statistics	
	Tolerance	VIF
Age	0.92	1.09
Education	0.92	1.08
Political Ideology	0.75	1.33
Religiosity	0.79	1.28
Black	0.88	1.14
Hispanic	0.96	1.04
Asian	0.95	1.06
Female	0.91	1.10
Victimized	0.92	1.09
FWD	0.73	1.38
Blame	0.79	1.26

Table 5.56 displays the regression analysis results for both model 1 (all predictors except blame) and model 2 (full model). Model 1 significantly predicted support for retribution against drug crime, $R^2=.27$, $R^2_{adj}=.23$, $F(11, 243)=7.7$, $p<.001$. Overall, it accounted for 27% of the variation. Four variables were statistically significant: free-will doubt contributed the most, followed by political Ideology, age, and religiosity. Least-squares yields the following estimates of these coefficients:

$$\hat{Y} = 1.71 - .53 (\text{Free Will Doubt}) + .10 (\text{Political Ideology}) + .02 (\text{Age}) + .04 (\text{Religiosity})$$

Model 2 was also statistically significant, $R^2=.41$, $R^2_{adj}=.38$, $F(12, 243)=13.24$, $p<.001$. This model accounted for 41% of the variation, an appreciable increase from model 1. Three variables were statistically significant: blame had the strongest effect, followed by free-will doubt, and political ideology. Least-squares yields the following estimates:

$$\hat{Y} = 1.28 + .30 (\text{Blame}) - .34 (\text{Free-will doubt}) + .08 (\text{Political Ideology})$$

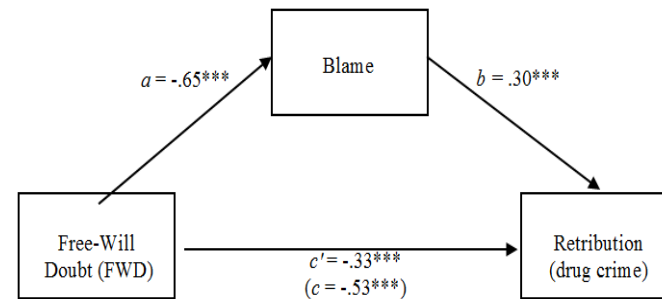
The inclusion of blame had several consequences. It completely mediated the effects of both age and religiosity, considerably diminished the effect of free-will doubt, and slightly diminished the effect of political ideology.

Hierarchical Regression: Drug Crime Retribution

Variable	Model 1			Model 2		
	B	SE	β	B	SE	β
Age	0.02*	0.01	0.14	0.01	0.01	0.08
Education	0.05	0.07	0.05	0.04	0.06	0.03
Political Ideology	0.10*	0.04	0.15	0.08*	0.04	0.13
Religiosity	0.04*	0.02	0.13	0.03	0.02	0.09
Black	0.10	0.25	0.02	-0.08	0.23	-0.02
Hispanic	0.07	0.27	0.01	0.12	0.24	0.03
Asian	0.01	0.27	0.00	0.00	0.24	0.00
Female	0.10	0.14	0.04	0.01	0.13	0.01
Victimized	-0.21	0.17	-0.07	-0.19	0.15	-0.07
Condition	0.02	0.14	0.01	-0.07	0.12	-0.03
FWD	-0.53***	0.10	-0.35	-0.34***	0.09	-0.22
Blame				0.30***	0.04	0.42
R^2			0.27			0.41
Adjusted R^2			0.23			0.38
F			7.71**			13.24***
* < .05, ** < .01, *** < .001						

Bootstrapping was also used to empirically test the effect of blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for covariates in the model, showed that blame indirectly influences the relationship between free-will belief and support for retribution against drug crime, because the 95% bias-corrected confidence interval does not include zero, $ab = -.20$ (95% CI [-.32, -.11]) (Hayes, 2013). This finding accounts for nearly half of the total effect, $P_m = .38$ ($ab / ab + c'$), elucidating the process by which free-will doubt affects support for retribution against drug crime.

Figure 5.13
Indirect Effect of FWD on Drug Crime Retribution via Blame



$ab = -.20$, 95% CI [-.32, -.11]

* < .05, ** < .01, *** < .001, $N = 243$.

Property Crime (Retribution Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + b_{12}X_{12} e,$$

where Y = support for retribution against property crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = experimental condition in relation to control; x_{11} = free will doubt (measured on a 5-point scale); x_{12} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.57 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, blame was the most strongly correlated with support for retribution against property crime (.70), followed by free-will doubt (-.50), political ideology (.16), black (.16) age (.15), religiosity (.13), and victimized (.11). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.58, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.57
Pearson Product-Moment: Property Crime Retribution

	1	2	3	4	5	6	7	8	9	10	11	12	13
1: Property Crime (retribution)	—												
2: Age	0.15**	—											
3: Education	-0.04	0.00	—										
4: Political Ideology	0.16**	-0.02	-0.17**	—									
5: Religiosity	0.13*	0.09	0.02	0.36***	—								
6: Black	0.16**	-0.04	-0.02	0.08	0.17**	—							
7: Hispanic	-0.02	-0.06	-0.07	0.08	-0.01	-0.08	—						
8: Asian	-0.01	-0.12*	0.10	-0.07	0.03	-0.09	-0.07	—					
9: Female	0.07	0.15*	0.04	-0.09	0.14*	-0.05	-0.01	0.04	—				
10: Victimized	0.11*	0.01	-0.17**	0.11*	0.06	0.16**	0.06	-0.03	0.10	—			
11: Condition	0.01	0.02	-0.04	0.09	-0.02	0.06	0.02	-0.06	-0.03	0.04	—		
12: FWD	-0.50***	-0.01	0.08	-0.36***	-0.30***	-0.21***	-0.04	0.08	-0.06	-0.11*	-0.03	—	
13: Blame	0.70***	0.24***	-0.08	0.04	0.07	0.13*	-0.05	-0.03	0.14*	0.08	0.10	-0.42***	—

* $\leq .05$, ** $\leq .01$, *** $\leq .001$

Table 5.58
Collinearity Statistics

Variable	Collinearity Statistics	
	Tolerance	VIF
Age	0.88	1.13
Education	0.92	1.09
Political Ideology	0.75	1.34
Religiosity	0.79	1.27
Black	0.89	1.13
Hispanic	0.96	1.04
Asian	0.95	1.06
Female	0.91	1.10
Victimized	0.92	1.09
FWD	0.65	1.55
Blame	0.72	1.38

Table 5.59 displays the regression analysis results. Model 1 significantly predicted support for retribution against property crime, $R^2 = .28$, $R^2_{adj} = .25$, $F(11, 243) = 8.3$, $p < .001$. Overall, it accounted for 28% of the variation. Two variables were statistically significant: free-will doubt contributed the most, followed by age. Least-squares yields the following estimates of these coefficients:

$$\hat{Y} = 2.62 - .68 (\text{Free Will Doubt}) + .02 (\text{Age})$$

Model 2 was also statistically significant, $R^2 = .55$, $R^2_{adj} = .52$, $F(12, 243) = 23.47$, $p < .001$. This model accounted for more than one-half (55%) of the variation, an appreciable increase from model 1. Two variables were statistically significant: blame

had the strongest effect, followed by free-will doubt. Least-squares yields the following estimates:

$$\hat{Y} = .22 + .64 (\text{Blame}) - .30 (\text{Free-will doubt})$$

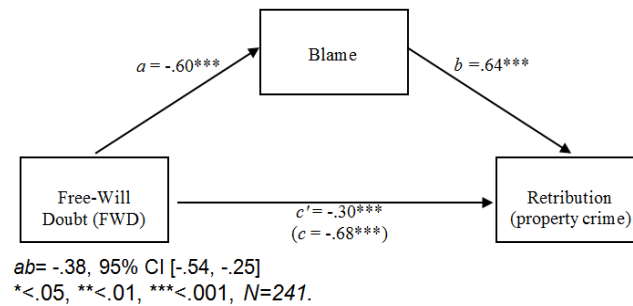
The inclusion of blame completely mediated the effect of age, and strongly attenuated the effect of free-will doubt.

Table 5.59
Hierarchical regression: Property Crime Retribution

Variable	Model 1			Model 2		
	B	SE	β	B	SE	β
Age	0.02**	0.01	0.16	0.00	0.01	0.02
Education	0.01	0.06	0.01	0.04	0.05	0.04
Political Ideology	0.00	0.04	0.01	0.04	0.03	0.07
Religiosity	-0.01	0.02	-0.04	0.00	0.02	-0.01
Black	0.21	0.22	0.06	0.14	0.18	0.04
Hispanic	-0.14	0.24	-0.03	0.00	0.20	0.00
Asian	0.23	0.24	0.05	0.13	0.20	0.03
Female	0.04	0.13	0.02	-0.06	0.10	-0.03
Victimized	0.11	0.15	0.04	0.09	0.12	0.04
Condition	-0.04	0.12	-0.02	-0.15	0.10	-0.07
FWD	-0.68***	0.09	-0.49	-0.30***	0.08	-0.22
Blame				0.64***	0.06	0.61
R^2			0.28			0.55
Adjusted R^2			0.25			0.52
F			8.30***			23.06***
* $p < .05$, ** $p < .01$, *** $p < .001$						

Bootstrapping was also used to empirically test the effect of blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for covariates in the model, showed that blame indirectly influences the relationship between free-will belief and support for retribution against property crime, since the 95% bias-corrected confidence interval does not include zero, $ab = -.38$ (95% CI [-.54, -.25]) (Hayes, 2013). This finding accounts for more than half of the total effect, $P_m = .56$ ($ab/ab + c'$).

Figure 5.14
Indirect Effect of FWD on Property Crime Retribution via Blame



Violent Crime (Retribution Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + b_{12}X_{12} e,$$

where Y = support for retribution against violent crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = experimental condition in relation to control; x_{11} = free will doubt (measured on a 5-point scale); x_{12} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.60 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, blame was the most strongly correlated with support for retribution against violent crime (.77), followed by free-will doubt (-.45), black (.16), political ideology (.14), religiosity (.13), age (.13), and victimized (.11).

There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.61, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.60
Pearson Product-Moment: Violent Crime Retribution

	1	2	3	4	5	6	7	8	9	10	11	12	13
1: Violent Crime (retribution)	—												
2: Age	0.13*	—											
3: Education	-0.08	0.01	—										
4: Political Ideology	0.14*	-0.02	-0.17**	—									
5: Religiosity	0.13*	0.09	0.03	0.35***	—								
6: Black	0.16**	-0.04	-0.03	0.08	0.15**	—							
7: Hispanic	-0.04	-0.07	-0.08	0.08	-0.03	-0.09	—						
8: Asian	0.02	-0.12*	0.11*	-0.07	0.03	-0.09	-0.08	—					
9: Female	0.08	0.15*	0.04	-0.09	0.14*	-0.04	-0.02	0.04	—				
10: Victimized	0.11*	0.01	-0.17**	0.11*	0.05	0.18**	0.05	-0.03	0.11*	—			
11: Condition	0.04	0.02	-0.05	0.09	-0.02	0.07	0.03	-0.07	-0.03	0.05	—		
12: FWD	-0.45***	-0.01	0.08	-0.35***	-0.30***	-0.23***	-0.01	0.08	-0.08	-0.13*	-0.03	—	
13: Blame	0.77***	0.18**	-0.09	0.05	0.05	0.13*	-0.04	-0.02	0.09	0.12*	0.05	-0.37***	—
*<.05, **<.01, ***<.001													

Table 5.61
Collinearity Statistics

Variable	Collinearity Statistics	
	Tolerance	VIF
Age	0.91	1.10
Education	0.92	1.09
Political Ideology	0.75	1.34
Religiosity	0.79	1.27
Black	0.89	1.12
Hispanic	0.96	1.04
Asian	0.95	1.06
Female	0.92	1.09
Victimized	0.91	1.10
FWD	0.70	1.44
Blame	0.81	1.24

Table 5.62 displays the regression analysis results. Model 1 significantly predicted support for retribution against violent crime, $R^2=.23$, $R^2_{adj}=.20$, $F(11, 243)=6.3$, $p<.001$. Overall, it accounted for 23% of the variation. Two variables were statistically significant: blame contributed the most, followed by free-will doubt. Least-squares yields the following estimates of these coefficients:

$$\hat{Y} = 3.62 - .59 (\text{Free Will Doubt}) + .01 (\text{Age})$$

Model 2 was also statistically significant, $R^2=.63$, $R^2_{adj}=.61$, $F(12, 243)=32.89$, $p<.001$. This model accounted for nearly two-thirds (63%) of the variation, a marked increase from model 1. Two variables were statistically significant: blame had the strongest effect, followed by free-will doubt. Least-squares yields the following estimates:

$$\hat{Y} = .32 + .74 (\text{Blame}) - .22 (\text{Free-will doubt})$$

The inclusion of blame completely mediated the effect of age, and strongly attenuated the effect of free-will doubt.

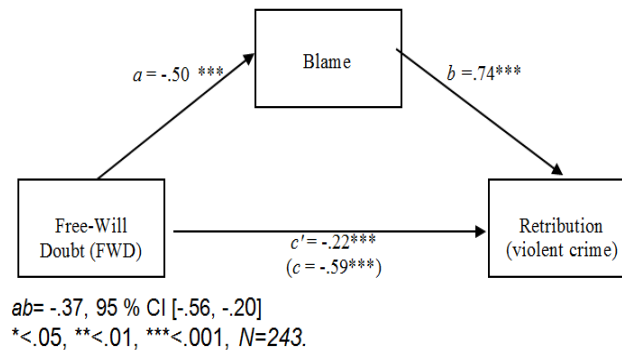
Table 5.62
Hierarchical Regression: Violent Crime Retribution

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Age	0.01*	0.01	0.13	0.00	0.00	0.01
Education	-0.05	0.06	-0.05	0.00	0.04	0.00
Political Ideology	-0.01	0.04	-0.01	0.03	0.03	0.04
Religiosity	-0.01	0.02	-0.03	0.01	0.01	0.02
Black	0.25	0.23	0.07	0.12	0.16	0.03
Hispanic	-0.14	0.25	-0.03	-0.04	0.17	-0.01
Asian	0.36	0.25	0.09	0.24	0.17	0.06
Female	0.06	0.13	0.03	0.01	0.09	0.00
Victimized	0.09	0.16	0.03	-0.03	0.11	-0.01
Condition	0.04	0.13	0.02	-0.02	0.09	-0.01
FWD	-0.59***	0.09	-0.44	-0.22***	0.07	-0.17
Blame				0.74***	0.05	0.70
R^2			0.23			0.63
Adjusted R^2			0.20			0.61
<i>F</i>			6.34***			32.89***

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

Bootstrapping was also used to empirically test the effect of blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for the covariates in the full regression model, showed that blame indirectly influences the relationship between free-will belief and support for retribution against violent crime, since the 95% bias-corrected confidence interval does not include zero, $ab= -.37$ (95 % CI [-.56, -.20]) (Hayes, 2013). This finding accounts for nearly two-thirds of the total effect, $P_m=.63$ ($ab/ab + c'$).

Figure 5.15
Indirect Effect of FWD on Violent Crime Retribution via Blame



Drug Crime (Consequentialist Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + b_{12}X_{12} + e,$$

where Y = support for a consequentialist response to drug crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = experimental condition in relation to control; x_{11} = free will doubt (measured on a 5-point scale); x_{12} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.63 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, blame was the most strongly correlated with support for a consequentialist response to drug crime (.24), followed by political

ideology (-.17), female (.14), and black (.10). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.64, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.63
Pearson Product-Moment: Drug Crime Consequentialist

	1	2	3	4	5	6	7	8	9	10	11	12	13
1: Drug Crime (consequentialist)	—												
2: Age	0.04	—											
3: Education	0.04	0.01	—										
4: Political Ideology	-0.17**	-0.02	-0.17**	—									
5: Religiosity	0.06	0.09	0.03	0.35***	—								
6: Black	0.10*	-0.04	-0.03	0.08	0.15*	—							
7: Hispanic	-0.07	-0.07	-0.08	0.08	-0.03	-0.09	—						
8: Asian	0.00	-0.12*	0.11*	-0.07	0.03	-0.09	-0.08	—					
9: Female	0.14*	0.15*	0.04	-0.09	0.14*	-0.04	-0.02	0.04	—				
10: Victimized	0.07	0.01	-0.17**	0.11*	0.05	0.18**	0.05	-0.03	0.11*	—			
11: Condition	0.01	0.02	-0.05	0.09	-0.02	0.07	0.03	-0.07	-0.03	0.05	—		
12: FWD	-0.05	-0.01	0.08	-0.35***	-0.30***	-0.23***	-0.01	0.08	-0.08	-0.13*	-0.03	—	
13: Blame	0.24***	0.18**	0.01	0.19**	0.24***	0.18**	-0.05	-0.04	0.13*	0.06	0.11*	-0.38***	—

*<.05, **<.01, ***<.001

Table 5.64
Collinearity Statistics

Variable	Collinearity Statistics	
	Tolerance	VIF
Age	0.92	1.09
Education	0.92	1.08
Political Ideology	0.75	1.33
Religiosity	0.79	1.28
Black	0.88	1.14
Hispanic	0.96	1.04
Asian	0.95	1.06
Female	0.91	1.10
Victimized	0.92	1.09
FWD	0.73	1.38
Blame	0.79	1.26

Table 5.65 displays the regression analysis results. Model 1 was not statistically significant, $R^2=.08$, $R^2_{adj}=.04$, $F(11, 243)=1.8$, $p<.055$; however, there was one statistically significant variable, political ideology. In contrast, model 2 was statistically significant, $R^2=.13$, $R^2_{adj}=.08$, $F(12, 243)=2.81$, $p<.001$. This model accounted for a modest 13% of the variation. Two variables were statistically significant: blame had the strongest effect, followed by political ideology. Least-squares yields the following estimates:

$$\hat{Y} = 4.7 + .22 (\text{Blame}) - .20 (\text{Political Ideology})$$

The inclusion of blame had a negligible effect on the only significant variable in model 1, political ideology. Also, though free-will doubt was not statistically significant, its effect was almost completely washed out after controlling for blame.

Table 5.65
Hierarchical Regression: Drug Crime Consequentialist

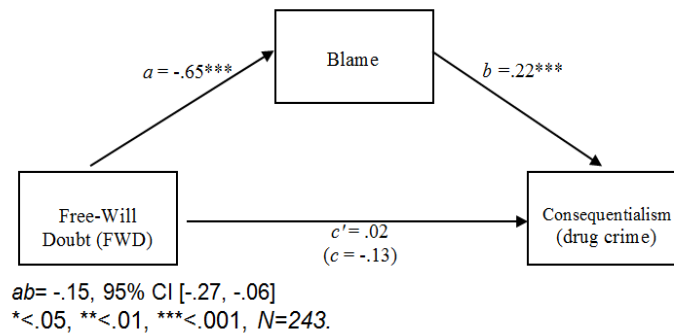
Variable	Model 1			Model 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Age	0.00	0.01	0.01	0.00	0.01	-0.03
Education	0.01	0.10	0.01	0.00	0.09	0.00
Political Ideology	-0.19**	0.06	-0.23	-0.20***	0.06	-0.24
Religiosity	0.04	0.03	0.09	0.03	0.03	0.06
Black	0.42	0.35	0.08	0.29	0.34	0.06
Hispanic	-0.27	0.38	-0.05	-0.23	0.37	-0.04
Asian	-0.07	0.38	-0.01	-0.08	0.37	-0.01
Female	0.30	0.20	0.10	0.24	0.19	0.08
Victimized	0.21	0.24	0.06	0.23	0.23	0.06
Condition	0.07	0.19	0.02	0.00	0.19	0.00
FWD	-0.13	0.13	-0.07	0.01	0.14	0.01
Blame				0.22***	0.06	0.25
<i>R</i> ²			0.08			0.13
Adjusted <i>R</i> ²			0.04			0.08
<i>F</i>			1.80			2.81***

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

Bootstrapping was also used to empirically test the effect of blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for the covariates in the full regression model, showed that blame indirectly influences the relationship between free-will belief and support for a consequentialist response to drug crime, as the 95% bias-corrected confidence interval does not include zero, $ab = -.15$ (95% CI [-.27, -.06]) (Hayes, 2013). This finding accounts for 88% of the total effect, $P_m = .88$ ($ab / (ab + c')$). Given there was no direct association between free-will doubt and support for a consequentialist response to drug crime, it bears noting that an indirect effect is nonetheless possible; the total effect of free-will doubt on support for a consequentialist response to drug crime is the sum of

myriad different paths of influence, both direct and indirect, some of which may not be accounted for by the model (Hayes, 2009).

Figure 5.16
Indirect Effect of FWD on Drug Crime Consequentialism via Blame



Property Crime (Consequentialist Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + b_{12}X_{12} + e,$$

where Y = support for a consequentialist response to property crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = experimental condition in relation to control; x_{11} = free will doubt (measured on a 5-point scale); x_{12} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.66 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, political ideology was the most strongly correlated with support for a consequentialist response to property crime (-.33), followed by blame (.21), female (.13), and victimized (.11). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.67, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.66
Pearson Product-Moment: Property Crime Consequentialist

	1	2	3	4	5	6	7	8	9	10	11	12	13
1: Property Crime (consequentialist)	—												
2: Age	0.06	—											
3: Education	-0.09	0.00	—										
4: Political Ideology	-0.33***	-0.02	-0.17**	—									
5: Religiosity	-0.05	0.09	0.02	0.36***	—								
6: Black	0.10	-0.04	-0.02	0.08	0.17**	—							
7: Hispanic	-0.09	-0.06	-0.07	0.08	-0.01	-0.08	—						
8: Asian	0.02	-0.12*	0.10	-0.07	0.03	-0.09	-0.07	—					
9: Female	0.13*	0.15*	0.04	-0.09	0.14*	-0.05	-0.01	0.04	—				
10: Victimized	0.11*	0.01	-0.17**	0.11*	0.06	0.16**	0.06	-0.03	0.10	—			
11: Condition	-0.01	0.02	-0.04	0.09	-0.02	0.06	0.02	-0.06	-0.03	0.04	—		
12: FWD	0.05	-0.01	0.08	-0.36***	-0.30***	-0.21***	-0.04	0.08	-0.06	-0.11*	-0.03	—	
13: Blame	0.21***	0.24***	-0.08	0.04	0.07	0.13*	-0.05	-0.03	0.14*	0.08	0.10	-0.42***	—
* $\leq .05$, ** $\leq .01$, *** $\leq .001$													

Table 5.67
Collinearity Statistics

Variable	Collinearity Statistics	
	Tolerance	VIF
Age	0.88	1.13
Education	0.92	1.09
Political Ideology	0.75	1.34
Religiosity	0.79	1.27
Black	0.89	1.13
Hispanic	0.96	1.04
Asian	0.95	1.06
Female	0.91	1.10
Victimized	0.92	1.09
FWD	0.65	1.55
Blame	0.72	1.38

Table 5.68 displays the regression analysis results. Model 1 was statistically significant, $R^2=.18$, $R^2_{adj}=.14$, $F(11, 43)=4.5$, $p<.001$. Overall, it accounted for 18% of the variation. Two variables were statistically significant: political ideology contributed

the most, followed by education. Least-squares yields the following estimates of these coefficients:

$$\hat{Y} = 6.47 - .28 (\text{Political Ideology}) - .019 (\text{Education})$$

Model 2 was also statistically significant, $R^2=.21$, $R^2_{\text{adj}}=.17$, $F(12, 243)=5.0$, $p<.001$. This model accounted for 21% of the variation. Three variables were statistically significant: political ideology had the strongest effect, followed by blame, and education. Least-squares yields the following estimates:

$$\hat{Y} = 5.42 - .27 (\text{Political Ideology}) + .28 (\text{Blame}) - .17 (\text{Education})$$

The inclusion of blame had a negligible effect on the two significant variables in model 1, political ideology and education.

Table 5.68
Hierarchical Regression: Property Crime Consequentialist

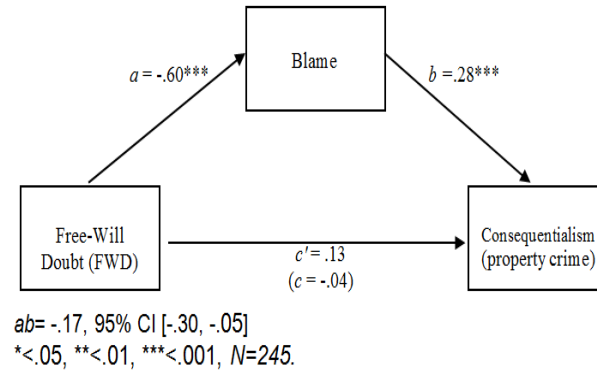
Variable	Model 1			Model 2		
	B	SE	β	B	SE	β
Age	0.00	0.01	0.04	0.00	0.01	-0.01
Education	-0.19*	0.08	-0.14	-0.17*	0.08	-0.13
Political Ideology	-0.28***	0.05	-0.38	-0.27***	0.05	-0.36
Religiosity	0.02	0.03	0.04	0.02	0.03	0.06
Black	0.50	0.30	0.10	0.45	0.31	0.09
Hispanic	-0.34	0.33	-0.06	-0.30	0.33	-0.05
Asian	0.09	0.33	0.02	0.05	0.33	0.01
Female	0.24	0.17	0.09	0.19	0.17	0.07
Victimized	0.34	0.21	0.10	0.33	0.20	0.10
Condition	0.04	0.17	0.01	-0.01	0.17	-0.01
FWD	-0.04	0.12	-0.02	0.13	0.13	0.07
Blame				0.28**	0.09	0.21
R^2			0.18			0.21
Adjusted R^2			0.14			0.17
F			4.48***			5.02***

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

Bootstrapping was also used to empirically test the effect of blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for the covariates in the full regression model, showed that blame indirectly influences the relationship between free-will belief and support for a consequentialist response to property crime, since the 95% bias-corrected confidence

interval does not include zero, $ab = -.17$ (95% CI $[-.30, -.05]$) (Hayes, 2013). This finding accounts for the entire effect, $P_m = 4.25$ ($ab/ab + c'$).

Figure 5.17
Indirect Effect of FWD on Property Crime Consequentialism via Blame



Violent Crime (Consequentialist Scale)

Standard multiple regression was conducted to test the following explanatory model:

$$Y = a_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10} + b_{11}X_{11} + b_{12}X_{12} + e,$$

where Y = support for a consequentialist response to violent crime (measured on a 7-point scale); x_1 = age (measured in years); x_2 = education (measured by degree attainment); x_3 = political ideology (measured on a 7-point scale); x_4 = religiosity (measured on a 10-point scale); x_5 = dummy variable for Black relative to White; x_6 = dummy variable for Hispanic relative to White; x_7 = dummy variable for Asian relative to White; x_8 = dummy variable for Female relative to Male; x_9 = dummy variable for Victimized relative to Never Victimized; x_{10} = experimental condition in relation to control; x_{11} = free will doubt (measured on a 5-point scale); x_{12} = blame (measured on a 7-point scale). To evaluate blame as a mediator, the model was run hierarchically, first with it left out of the model and then with it included.

Table 5.69 contains a correlation matrix of variables included in the model. Of the variables found to be statistically significant, political ideology was the most strongly correlated with support for a consequentialist response to violent crime (-.26), followed by free-will doubt (.12), and religiosity (-.10). There were no concerning bivariate correlations among the variables indicating collinearity. This was further confirmed by an inspection of collinearity statistics, displayed in Table 5.70, which shows Tolerance values above .10 and VIF values less than 10 (Myers, 1990).

Table 5.69
Pearson Product-Moment: Violent Crime Consequentialist

	1	2	3	4	5	6	7	8	9	10	11	12	13
1: Violent Crime (consequentialist)	—												
2: Age	-0.07	—											
3: Education	-0.04	0.01	—										
4: Political Ideology	-0.26***	-0.02	-0.17**	—									
5: Religiosity	-0.10*	0.09	0.03	0.35***	—								
6: Black	0.07	-0.04	-0.03	0.08	0.15**	—							
7: Hispanic	0.02	-0.07	-0.08	0.08	-0.03	-0.09	—						
8: Asian	0.08	-0.12*	0.11*	-0.07	0.03	-0.09	-0.08	—					
9: Female	0.07	0.15*	0.04	-0.09	0.14*	-0.04	-0.02	0.04	—				
10: Victimized	0.09	0.01	-0.17***	0.11*	0.05	0.18**	0.05	-0.03	0.11*	—			
11: Condition	-0.03	0.02	-0.05	0.09	-0.02	0.07	0.03	-0.07	-0.03	0.05	—		
12: FWD	0.12*	-0.01	0.08	-0.35***	-0.30***	-0.23***	-0.01	0.08	-0.08	-0.13*	-0.03	—	
13: Blame	-0.01	0.18**	-0.09	0.05	0.05	0.13*	-0.04	-0.02	0.09	0.12*	0.05	-0.37***	—

*<.05, **<.01, ***<.001

Table 5.70
Collinearity Statistics

Variable	Collinearity Statistics	
	Tolerance	VIF
Age	0.91	1.10
Education	0.92	1.09
Political Ideology	0.75	1.34
Religiosity	0.79	1.27
Black	0.89	1.12
Hispanic	0.96	1.04
Asian	0.95	1.06
Female	0.92	1.09
Victimized	0.91	1.10
FWD	0.70	1.44
Blame	0.81	1.24

Table 5.71 displays the regression analysis results. Model 1 was statistically significant, $R^2=.11$, $R^2_{adj}=.07$, $F(11, 243)=2.6$, $p<.004$. Overall, it accounted for a

modest 11% of the variation. There was only one statistically significant variable, political ideology. Least-squares yields the following estimate of this coefficient:

$$\hat{Y} = 6.5 - .23 (\text{Political Ideology})$$

Model 2 was also statistically significant, $R^2=.11$, $R^2_{adj}=.06$, $F(12, 243)=2.3$, $p<.007$. This model also accounted for 11% of the variation, with political ideology being the only statistically significant variable. Least-squares yields the following estimates:

$$\hat{Y} = 6.5 - .23 (\text{Political Ideology})$$

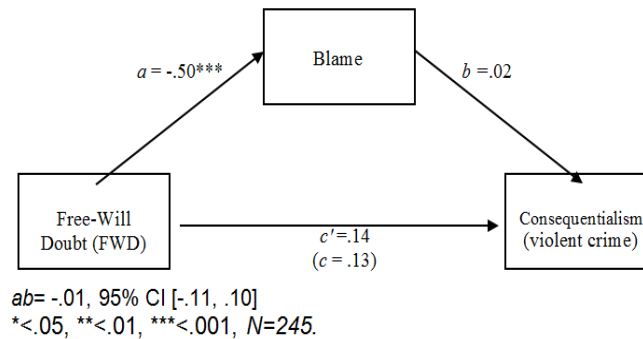
After adjusting for blame, the effect of political ideology was undiminished.

Table 5.71
Hierarchical Regression: Violent Crime Consequentialist

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE</i>	β	<i>B</i>	<i>SE</i>	β
Age	-0.01	0.01	-0.06	-0.01	0.01	-0.07
Education	-0.12	0.10	-0.08	-0.12	0.10	-0.08
Political Ideology	-0.23***	0.06	-0.26	-0.23***	0.06	-0.26
Religiosity	-0.01	0.03	-0.01	-0.01	0.03	-0.01
Black	0.52	0.37	0.09	0.52	0.37	0.09
Hispanic	0.22	0.40	0.04	0.22	0.40	0.04
Asian	0.40	0.41	0.06	0.39	0.41	0.06
Female	0.19	0.21	0.06	0.19	0.21	0.06
Victimized	0.37	0.25	0.09	0.37	0.25	0.09
Condition	-0.04	0.20	-0.01	-0.05	0.20	-0.01
FWD	0.13	0.14	0.07	0.14	0.15	0.07
Blame				0.02	0.11	0.01
R^2			0.11			0.11
Adjusted R^2			0.07			0.06
<i>F</i>			2.57**			2.35**
* $<.05$, ** $<.01$, *** $<.001$						

Bootstrapping was also used to empirically test the effect of blame as a mediator. Based on 10,000 bootstrap samples and replacements, an OLS simple mediation path analysis, after adjusting for the covariates in the full regression model, showed that blame does not indirectly influence the relationship between free-will belief and support for a consequentialist response to violent crime, since the 95% bias-corrected confidence interval includes zero, $ab= -.01$ (95% CI [-.11, .10]) (Hayes, 2013).

Figure 5.18
Indirect Effect of FWD on Violence Crime Consequentialism via Blame



5.5 Summary Tables

Table 5.72
Standardized Regression Coefficients: NFC Full Models

	Drug Crime		Property Crime		Violent Crime	
	Retribution	Consequentialist	Retribution	Consequentialist	Retribution	Consequentialist
Age	.09	.07	.06	-.06	.06	-.18*
Education	.05	-.02	.08	.01	.00	.05
Political Ideology	.11*	-.04	.13**	-.16*	.02	-.20*
Religiosity	.06	-.03	.05	.03	.11*	.14
Black	.06	.02	.06	.01	.05	.04
Hispanic	.04	.07	-.03	.01	.03	.05
Asian	.08	-.09	.10	-.16*	.08	-.04
Female	.05	.04	.00	.04	.01	.06
Victimized	.00	.07	.03	.14*	.03	.12
NFC	-.01	.14*	.03	.17*	-.08	.15*
Blame	.46***	.19***	.57***	.22**	.67***	.07
R ²	.32	.09	.37	.16	.50	.12

* < .05, ** < .01, *** < .001

Table 5.73
Standardized Regression Coefficients: Race Full Models

	Drug Crime		Property Crime		Violent Crime	
	Retribution	Consequentialist	Retribution	Consequentialist	Retribution	Consequentialist
Age	.02	.09	.01	-.07	-.03	-.13
Education	-.07	.09	-.11*	.07	-.10	.11
Political Ideology	.10	-.19**	.09	-.35***	.09	-.16**
Religiosity	.07	-.05	.05	.05	.06	.11
Black	-.12*	.16*	-.09	.05	-.07	.11
Hispanic	.02	.09	.04	-.02	-.01	.01
Asian	.19***	-.08	.18***	-.19**	.17***	-.05
Female	.11*	.14*	.03*	.09	.05	-.04
Victimized	.07	-.03	.13	-.01	.09	-.04
Exp. Condition	.05	.02	-.01	-.02	.01	-.08
Blame	.54***	.23***	.58***	.22***	.62***	.06
R ²	.43	.15	.41	.22	.46	.07

* < .05, ** < .01, *** < .001

Table 5.74
Standardized Regression Coefficients: FWD Full Models

	Drug Crime		Property Crime		Violent Crime	
	Retribution	Consequentialist	Retribution	Consequentialist	Retribution	Consequentialist
Age	.08	-.03	.02	-.01	.01	-.07
Education	.03	.00	.04	-.13*	.00	-.08
Political Ideology	.13*	-.24***	.07	-.36***	.04	-.26***
Religiosity	.09	.06	-.01	.06	.02	-.01
Black	-.02	.06	.04	.09	.03	.09
Hispanic	.03	-.04	.00	-.05	-.01	.04
Asian	.00	-.01	.03	.01	.06	.06
Female	.01	.08	-.03	.07	.00	.06
Victimized	-.07	.06	.04	.10	-.01	.09
Condition	-.03	.00	-.07	-.01	-.01	-.01
FWD	-.22***	.01	-.22***	.07	-.17***	.07
Blame	.42***	.25***	.61***	.21**	.70***	.01
R ²	0.41	0.13	0.55	0.21	0.63	0.11

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

Table 5.75
Change in R² after Including Blame in Regression Models

	Drug Crime		Property Crime		Violent Crime	
	Retribution	Consequentialist	Retribution	Consequentialist	Retribution	Consequentialist
NFC studies	.17	.03	.27	.03	.39	.01
Race studies	.26	.05	.31	.05	.35	.00
Free-will doubt studies	.14	.05	.27	.03	.40	.00

Table 5.76
Bootstrap Regression Coefficients: Mediation by Blame

	Drug Crime		Property Crime		Violent Crime	
	Retribution	Consequentialist	Retribution	Consequentialist	Retribution	Consequentialist
NFC	.00	.00	.00	.00	.01	.00
Race exp. condition	.10	.05	.09	.04	.09	.02
Free-will doubt	-.20*	-.15*	-.38*	-.17*	-.37*	-.01

* Significant at 95% CI

5.6 Summary of Results

In study 1, participants were given two rank-ordering tasks, one a series of core crimes and the other a series of non-core drug crimes. On the core crime task, participants showed moderate agreement about how to rank the relative punishment deserved, with a Kendall's coefficient of .65, falling well short of the “astounding” level found by earlier researchers (.95). This was particularly surprising since participants had to rank-order fewer crime scenarios than in the previous study (12 compared to 24); the greater the number of scenarios, the more nuance for participants to disagree over. Using the same points of comparison as Robinson and Kurzban, this is roughly the difference between the near consensus found among people ranking the comparative brightness

of a light (.96) (De Weert & van Kruysbergen, 1997), and the moderate agreement among readers of a travel magazine regarding the risk of terrorism in eight countries (.52) (Fischhoff et al., 2004).

There are several possible explanations for this divergence. First, the participants in the earlier Robinson and Kurzban study were largely homogenous: more than 90% of the participants were white, more than two-thirds were women, 94% had attained at least a college degree, and 69% were older than 50. Second, there were only 64 participants in the earlier study—a sample size considerably smaller than the present study, 255. Finally, whereas in the earlier study participants completed the task in person (ordering cards on a table), participants in the present study completed the task via computer (click-and-dragging scenarios), which may have increased its difficulty. That these factors diminish agreement is supported by Robinson and Kurzban's own follow-up study, which was conducted via computer in a larger and more diverse sample than their initial study, and also yielded a lower Kendall's W (.88). Given the discrepancies in these three findings, additional research is warranted.

On the non-core drug crime task, participants showed low agreement about relative punishment of these crimes, with a Kendall's coefficient of .33. To borrow another point of comparison, this was even less than the agreement among economist about the top 10 academic journals in their field (.40) (Axaroglou & Theoharakis, 2003). Notably, this level of agreement for nonviolent drug offenses was considerably lower than that of an earlier study of garden-variety non-core crimes (.55 in person; .51 online) (Robinson & Kurzban, 2006). Based on those findings, Robinson and Kurzban speculated that judgments about non-core crime are not the product of universal

“intuitions of justice,” but rather of “general social learning and reasoning.” The current study lends support to the latter view, particularly regarding nonviolent drug offenses. Moreover, it suggests that compared to core crimes such judgments may be less obdurate to change.

Study 2 examined the relationship between the NFC and support for both retributive and consequentialist responses to crime. After adjusting for potential confounding variables (age, ethnicity, gender, education, political ideology, religiosity, past victimization, and blame), a statistically significant relationship was found between the NFC and support for a consequentialist response to all three crime types presented. The NFC was the second strongest predictor of support for a consequentialist response to drug crime and property crime (after blame); and the third strongest predictor of support for consequentialist response to violent crime (after political ideology and age). This is consistent with dual-process theory in that participants disposed to the slower, more deliberate ‘manual’ mode of decision-making expressed greater support for consequentialism; or in Sargent’s terms—more thought, less punishment. In both the hierarchical regression model and bootstrapping mediation analysis, this effect proved not to be mediated by blame

By contrast, there was no relationship between the NFC and support for retribution against any of the three crimes presented, nor was blame a significant mediator of the relationship. This finding is at odds with Sargent’s earlier research showing an inverse relationship between the NFC and support for retribution. However, there were a couple of important differences between these two studies that may account for the inconsistent findings. For one, the present study included a wider

array of control variables, which may have washed out the NFC's effect on retributive attitudes. Also, whereas in the previous study support for retribution was measured in the abstract, the present study asks participants to respond to specific crime scenarios. This would be consistent with past research showing a disparity between global and specific attitudes about punishment (Applegate et al., 1996).

Study 3 examined the relationship between perception of racial disparities among criminal offenders and support for both retributive and consequentialist responses to crime. Participants were presented with a group of criminal offenders that was either mostly white (experimental group) or half white (control group), and were assessed on support for retributive and consequentialist responses to various crime types. There were no statistically significant differences between the two groups in scores on either the retribution or consequentialist scales. In a follow-up study using statistical controls, the experimental condition again was not found to be a determinant of support for either a retribution or consequentialist response to crime.

Past research showed that out-group bias, elicited through a representation of a mostly black offender population, increases support for retributive punishment policies. This supported the idea that racial bias could have the effect of switching on reasoning in automatic mode, thereby fueling retributive punishment. However, the current study does not lend support to the opposite pathway, whereby favoritism towards racial in-groups either diminishes support for retribution or increases support for consequentialism. This relationship, though, warrants more scrutiny; possibly via an in-person study, with a stronger manipulation, or using a measure of abstract attitudes

towards punishment policy rather than the specific attitudes evoked here in response to crime vignettes.

Study 4 examined the relationship between free-will doubt and support for both retributive and consequentialist responses to crime. Participants were exposed to either an essay casting doubt on the existence of free-will (experimental group) or an essay about consciousness unrelated to free-will (control group). Additionally, participants completed a scale assessing their belief in free-will. While there were no statistically significant differences in scores on the retribution and consequentialist scales, regression analyses demonstrated an impressive relationship between free-will doubt and support for retributive punishment. After controlling for a broad range of potential confounding variables (age, ethnicity, gender, education, political ideology, religiosity, past victimization, blame), as well as any possible effect of the experimental manipulation, free-will doubt was found to be a strong predictor of support for retributive punishment in all three crime scenarios (drug crime, property crime, violent crime). This is consistent with dual-process theory in that participants who expressed doubts about free-will—thus overriding automatic intuitions that favor free-will belief—showed less support for retributive punishment. Moreover, the pattern of effects was consistent with Krueger et al.'s previous finding that free-will beliefs play a greater role in response to less emotionally arousing non-core crimes (eg., drug crime) than in the more emotionally arousing core crimes (eg., violent crime), albeit the difference was small. Finally, as predicted, this effect was partly transmitted via judgments about the amount of blame a perpetrator deserved, which accounted for 38% of support for retribution against drug crime, 56% of property crime, and 63% of violent crime.

In contrast, there were no statistically significant relationships between free-will doubt and support for consequentialist responses to crime. Nevertheless, to the extent that free-will doubt influenced such judgments, it was strongly mediated by blame in the case of both drug crime and property crime, but not violent crime.

Overall, this research produced several important findings. First, with regard to core crimes, disagreement over the relative punishment deserved was greater than expected, and, with regard to nonviolent drug crime, disagreement was marked. Second, the need for cognition was found to be a unique determinant of support for a consequentialist response, with effects that were roughly similar across a broad range of the crime spectrum. Third, free-will doubt was found to be a strong determinant of support for retribution, with effects that were roughly similar across the crime spectrum. In addition, a sizeable proportion of this effect was shown to be mediated by blame. Fourth, while small to moderate zero-order correlations were found for demographic variables previously shown to influence punishment decisions, when included in the multivariate models their effects were either washed out, or very small and inconsistent across the crime spectrum. The one exception was political ideology. In all but one of the models, political conservatism was found to be negatively related to support for a consequentialist response to crime. Finally, as an independent variable blame was found to have a strong positive effect on support for retributive punishment, with appreciably higher effects for the core crime of violence than the non-core crime of drug use. Interestingly, blame was also positively related to support for consequentialist responses, although the pattern of its effect was reversed: generally its strongest effect was on drug crime, whereas it had no effect on violent crime. But perhaps the most

noteworthy aspect of blame's effect was the amount of variation in support for retribution it left unexplained: it accounted for just 14-17% of the variation in support for drug crime; 27-31% for property crime; and 35-40% for violent crime. Clearly, other factors play an important role in judgments about retributive punishment.

CHAPTER 6: DISCUSSION

A public health approach to drug policy has potential to both improve public health and safety. While there is evidence of public support for rehabilitation for nonviolent drug crime—even in the predominately conservative state of Texas (Thielo et al., 2016)—it is less clear whether the public will support a full shift away from punishment to public health, even for such low-level offenders. If the public resists adopting a public health approach to drug policy, to what extent should this bear on public policy? If our understanding of the causes of drug crime improves, are these attitudes about punishment likely to change?

The goal of this research was to conceptualize and test dual-process theory, a general theory of moral-decision making, as a specific theory of punishment. Its point of departure was empirical desert theory, which argues for distributing punishment in accord with retributive intuitions, not because such feelings are correct in any empirical sense but because doing so is posited to prevent crime. Yet this dissertation presents several challenges to this view.

First, empirical desert theory contends that judgments about wrongdoing proceed along one track of cognition, intuitions, and that those intuitions favor retribution. However, according to dual-process theory, which accords with the state-of-the-science in psychology, this leaves out one-half of the punishment decision-making story. Dual-process theory shows that punishment decisions proceed along two distinct tracks, one that is largely intuitive and biased toward retribution (deontology), and a second that is slower, more deliberative, and biased toward rehabilitation (consequentialism). So empirical deserts theory reflects only a partial understanding of the process by which

punishment decisions are made. Second, empirical desert theory is predicated on research showing agreement among laypersons about relative blame. Yet the current research raises doubts about the strength of this consensus, for both non-core crime *and* core crime. Third, the current research questions the importance of blame in decisions regarding retributive punishment. Although blame was shown to play an important role in such decisions, at most it accounted for only two-fifths of the variation in support for retributive punishment. Finally, while empirical desert theory allows for the possibility that judgments about non-core crimes may be affected by “social learning and reasoning,” it fails to provide an explanation of the factors that may similarly affect judgments about core crimes. Instead, it posits a black box of fixed, inscrutable intuitions. However, the current research shows that it is not only non-core crimes which are open to such influence, but also core crimes; recall that the NFC and free-will doubt affected judgments in all three crime scenarios: drug, property, and violent crime.

As we have seen, dual-process theory holds out the promise of a more comprehensive understanding of punishment psychology. But why focus on testing it on judgments about nonviolent drug crime? For starters, from a scientific standpoint, the behavior underlying nonviolent drug crime is arguably the most well understood of all criminal behaviors. In the last several decades, researchers have accumulated a large body of evidence on the causes of substance abuse, from the most granular biochemical factors, to the psychological, behavioral, and social. Harnessing this research, a broad array of evidence-based interventions have been developed for the treatment of substance abuse across these various levels (eg., MAT plus behavioral therapy). At the same time, the drumbeat of war has begun anew for a campaign

against drug crime, which in some parts of the criminal-justice system is already underway. As one example, the current Attorney General, Jeff Sessions, recently ordered federal prosecutors to pursue the toughest possible charges and sentences against some nonviolent drug offenders, including mandatory minimums (Ruiz, 2017).

Which of these divergent paths is correct? Punishment or public health? While research on the psychology of punishment cannot resolve this question, it can provide some guidance to criminal-justice policy makers interested in reform. For example, let us revisit the question posed above by Nora Volkow: “As we understand the neurobiological substrates that underlie voluntary actions, how will society define the boundaries of personal responsibility in those individuals who have impairments in these brain circuits?” The current research offers several insights. First, it suggests that there is marked discord over even the most basic questions concerning drug crime (eg., the correct rank-order of nonviolent drug offenses based on relative punishment deserved). This indicates that such judgments are not so deeply intuitive or so ossified into social norms to be beyond change. Second, it shows that there are various factors that tend to switch moral modes on or off, and thereby influence moral judgments regarding punishment. One such factor is free-will doubt, which has been shown to turn off moral reasoning in automatic mode, decreasing support for retribution via diminished perceptions of blame. Thus, it is reasonable to suppose that as doubts grow about whether substance abusers possess free-will over their behavior, support for punishment can be expected to decline. Another factor is the need for cognition. Individuals with a high need for cognition have been shown to favor consequentialist responses to drug crime. Although the need for cognition is a general personality trait,

the thought process that underlies high NFC offers a clue about how to turn on moral reasoning in manual mode—by relying less on others and cognitive heuristics and more on deliberative, effortful thought.

Research on dual-process theory of punishment could have farther-reaching implications. As new light is shed on the causes of criminal behavior—whether biological, psychological, or social—evidence-based interventions directed at these potential levers of change will continue to improve. However, that our default moral settings tend to favor retribution raises the following concern: Will retributive intuitions stand in the way of the adoption of such forward-looking approaches to crime? The current research shows that it not just judgments about drug crime, but also crimes spanning the full core to non-core spectrum that are open to revision. By further examining the factors that affect these judgments, and identifying others, this program of research could prove useful in overcoming this possible obstacle to systemic reform.

CHAPTER 7: LIMITATIONS

The present research has several limitations. First, research shows that samples drawn from the Mechanical Turk worker pool tend to skew younger, more educated, underemployed, less religious, and more liberal than the general population (Shapiro, D. N., Chandler, J., & Mueller, P. A., 2013). That said, samples drawn from this pool tend to be more representative of the general population than those drawn from college campuses and other online sources (Paolacci, G., Chandler, J., & Ipeirotis, P. G., 2010; Buhrmester, M., Kwang, T., & Gosling, S. D., 2011). Second, it is axiomatic that experimental methods involve a tradeoff in causal generalization: internal validity for external validity. So drawing general conclusions from these findings should be done with caution. Third, disentangling deontological from consequentialist reasons is difficult. Though efforts were made to isolate these rationales, it could well be that people indicate support for punishment partly for forward-looking reasons (eg., deterrence), and indicate support for rehabilitation partly for backward-looking reasons (eg., retribution). Fourth, one might contend that the movement toward drug courts has already shifted the criminal-justice system's focus away from retribution toward rehabilitation, especially for the nonviolent drug crimes portrayed in these studies. Although there is some merit to this argument, as noted above research shows that drug courts process only a small percentage of drug offenders, and with mixed results possibly due to their continued reliance on retribution (Alliance, D.P., 2011). Fifth, the scales used to measure retribution and consequentialism are still in their early phases of development. While overall they proved moderately reliable in this study, further research is needed. Finally, one may wonder at the purpose of studying *lay* judgments

on punishment at all; after all, with the exception of capital cases, laypeople have little direct influence on decisions related to criminal-justice punishment. However, the argument made by adherents of empirical desert theory—for distributing punishment in accord with community attitudes—has rendered lay attitudes a focal point in the perennial debate over the purpose of punishment.

APPENDICES

Appendix A

Rank Ordering Task:

Stimulus (non-core drug crimes):

Instructions: Imagine you are given complete discretion to punish John for his actions in each of the following 12 scenarios. Carefully order the scenarios from the LEAST amount of punishment (so: rank order 1 would be the least) that you think John deserves, to the MOST amount of punishment (so: rank order 12 would be the most) that you think he deserves.

SCENARIO 1:

John is picked up by the police after buying half a gram of powder cocaine (enough for 6 “lines”) for his personal use.

SCENARIO 2:

John earns money as one of the only drug dealers in town selling cocaine to anyone who will buy. Police raid his apartment and find 500 grams of powder cocaine (enough for about 6,000 “lines”).

SCENARIO 3:

John is a cocaine importer and distributor and directs the work of a dozen dealers. The police raid his home and find five kilograms of powder cocaine (enough for about 60,000 “lines”).

SCENARIO 4:

John stops by Earl’s Tavern on his way home from work, and drinks two of their infamous long island iced teas. Driving home he crashes his pickup into a telephone pole in his suburban subdivision, suffering only minor injuries. His blood alcohol content is twice the legal limit.

SCENARIO 5:

John is picked up by the police after buying 1/10th of an ounce (about the size of a packet of sugar) of heroin for his personal use.

SCENARIO 6:

John earns money as one of the only drug dealers in town selling heroin to anyone who will buy. Police raid his apartment and find 3 ounces of heroin (enough for about 8,500 injections).

SCENARIO 7:

John is a heroin importer and distributor and directs the work of a dozen dealers. The police raid his home and find 1 kilogram of heroin (enough for about 100,000 injections).

SCENARIO 8:

John approaches a drug dealer and purchases enough marijuana to smoke six “bowls” for a party one Saturday night.

SCENARIO 9:

John earns money as one of the only drug dealers in town selling marijuana to anyone who will buy. Police raid his apartment and find 10 ounces of marijuana (enough for about 10 zip lock bags).

SCENARIO 10:

John is picked up by the police after buying 1/20th of an ounce of crack cocaine (about the size of a small pebble) for his personal use.

SCENARIO 11:

John is picked up by the police after buying 20 pills (4 grams) of Ecstasy for his personal use.

SCENARIO 12:

John manufactures methamphetamine in a lab in the garage of his home. Police raid his garage and discover the lab and various chemicals involved in the process of making methamphetamines.

Stimulus (core crimes):

Imagine you are given complete discretion to punish John for his actions in each of the following 12 scenarios. Carefully order the scenarios from the LEAST amount of punishment (so: rank order 1 would be the least) that you think John deserves, to the MOST amount of punishment (so: rank order 12 would be the most) that you think he deserves.

SCENARIO 1:

The owner has posted rules at his all-you-can-eat buffet that expressly prohibit taking food away; patrons can only take what they eat at the buffet. The owner has set the price of the buffet accordingly. John purchases dinner at the buffet, but when he leaves he takes with him two whole pies to give a friend.

SCENARIO 2:

As he is walking to a party in a friend's neighborhood, John sees a clock radio on the backseat of a car parked on the street. Later that night, on his return from the party, he checks the car and finds it unlocked, so he takes the clock radio from the back seat.

SCENARIO 3:

While a family is away for the day, John breaks in through a bedroom window and rummages through the house looking for valuables. He can only find an 18-inch television, which angers him. When he gets it outside, he realizes that it is an older model than he wants, so he smashes it onto the driveway, breaking it into pieces.

SCENARIO 4:

A record store patron is wearing a cap that mocks John's favorite band. John follows him from the store, confronts him, then slaps him in the face hard, causing him to stumble. The man's face develops a harsh black and yellow bruise that does not go away for some time.

SCENARIO 5:

While attending a football game, John becomes angry as he overhears an opposing fan's insulting remarks about John's team. At the end of the game, John sticks his face in the man's face and head-butts him, causing a black eye and a gash that requires two stitches to close.

SCENARIO 6:

Angry after overhearing another parent's remarks during a soccer match in which John's son is playing, John approaches the man after the game, grabs his coffee mug, knocks him down, then kicks him several times while he is on the ground, knocking him out for several minutes and causing cuts that require five stitches.

SCENARIO 7:

As a woman searches her purse for car keys in a mall parking lot, John runs up and grabs her gold necklace but it does not break. He yanks the woman to the ground by her necklace. As a result, she gashes her head, requiring stitches. John runs off without the necklace.

SCENARIO 8:

To force a man to give up his wallet during a robbery attempt, John beats the man with a club until he relinquishes his wallet, which contains \$350. The man must be hospitalized for two days.

SCENARIO 9:

John is driving to see a man about buying an illegal gun but must baby-sit his friend's toddler son. It occurs to him that it is too hot to safely leave the toddler in the car but he decides to leave him anyway and to return soon. He gets talking with the seller, however, and forgets about the toddler. As a result, the toddler passes out and dies.

SCENARIO 10:

John is offended by a woman's mocking remark and decides to hurt her badly. At work the next day, when no one else is around, he picks up a letter opener from his desk and stabs her. She later dies from the wound.

SCENARIO 11:

John knows the address of a woman who has highly offended him. As he had planned the day before, he waits there for the woman to return from work and, when she appears, John shoots her to death.

SCENARIO 12:

John works out a plan to kill his 60-year-old invalid mother for the inheritance; he is the sole beneficiary of her substantial will. He drags her to her bed, puts her in, and lights her oxygen mask with a cigarette, hoping to make it look like an accident. The elderly woman screams as her clothes catch fire and she burns to death. John walks out, leaving the home as it is engulfed in flames.

Appendix B

Short Form of the Need for Cognition Scale (Cacioppo, Petty, & Kao, 1984)

Instructions: For each of the statements below, please indicate to what extent the statement is characteristic of you. If the statement is extremely uncharacteristic of you (not at all like you) please write a "1" to the left of the question; if the statement is extremely characteristic of you (very much like you) please write a "5" next to the question. Of course, a statement may be neither extremely uncharacteristic nor extremely characteristic of you; if so, please use the number in the middle of the scale that describes the best fit. Please keep the following scale in mind as you rate each of the statements below: 1 = extremely uncharacteristic; 2 = somewhat uncharacteristic; 3 = uncertain; 4 = somewhat characteristic; 5 = extremely characteristic.

1. I would prefer complex to simple problems.
2. I like to have the responsibility of handling a situation that requires a lot of thinking.
3. Thinking is not my idea of fun.
4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities?
5. I try to anticipate and avoid situations where there is a likely chance I will have to think in depth about something."
6. I find satisfaction in deliberating hard and for long hours.
7. I only think as hard as I have to.
8. I prefer to think about small, daily projects to long-term ones?
9. I like tasks that require little thought once I've learned them?
10. The idea of relying on thought to make my way to the top appeals to me.
11. I really enjoy a task that involves coming up with new solutions to problems.
12. Learning new ways to think doesn't excite me very much?
13. I prefer my life to be filled with puzzles that I must solve.
14. The notion of thinking abstractly is appealing to me.
15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
16. I feel relief rather than satisfaction after completing a task that required a lot of mental effort?
17. It's enough for me that something gets the job done; I don't care how or why it works?
18. I usually end up deliberating about issues even when they do not affect me personally.

Appendix C

Non-violent drug crime scenarios:

Drug Crime 1: A person is picked up by the police after buying 2 ounces of marijuana (about the size of 2 zip lock bags) for his personal use.

Drug Crime 2: A person is picked up by the police after buying 1/10th of an ounce of heroin (about the size of a sugar packet) for his personal use.

Property crime scenarios:

Property Crime 1: As he is walking to a party in a friend's neighborhood, a person sees a laptop computer on the back seat of a car parked on the street. Later that night, on his return from the party, he checks the car and finds it unlocked, so he takes the laptop from the back seat. Soon afterward, he is picked up by the police.

Property Crime 2: While a family is on vacation, a person breaks in through the back door of the family's house and steps into the kitchen. On the counter he sees a television, which he carries away. Soon after, he is picked up by the police.

Violent Crime Scenarios:

Violent crime scenarios:

Violent crime 1: A person is offended by a coworker's mocking remarks and decides to hurt her badly. At work the next day, when no one else is around, he picks up a letter opener from his desk and stabs her. She dies from the wounds. Soon after, he is picked up by the police.

Violent crime 2: A person kidnaps an 8-year old for ransom, rapes her, then records the child's screams as he burns her with a cigarette lighter, sending the recording to her parents to induce them to pay his ransom demand. Even though they pay as directed, the person strangles the child to death in order to avoid leaving a witness.

Appendix D

Retribution Scale:

Instructions: For each statement below, choose a number from 1 to 7 to indicate how much you agree or disagree.

- 1: The person described above deserves to be punished because he harmed society with his crime. (7-point end labeled: Strongly Disagree=1, Strongly Agree=7)
- 2: The amount of punishment that the person described above receives should be equal to the harm caused. (7-point end labeled: Strongly Disagree=1, Strongly Agree=7)
- 3: The amount of harm that this crime caused—and not the person described above's background or why he committed the crime—should be the major factor that determines how long of a sentence he receives. (7-point end labeled: Strongly Disagree=1, Strongly Agree=7)
- 4: The more serious the offense is, the more a person deserves to be punished. (7-point end labeled: Strongly Disagree=1, Strongly Agree=7)
- 5: The primary purpose of our criminal-justice system is to pay back offenders for what they've done with punishment. (7-point end labeled: Strongly Disagree=1, Strongly Agree=7)

Appendix E

Consequentialist Scale:

Instructions: For each statement below, choose a number from 1 to 7.

1: Relative to giving this offender what he deserves in terms of punishment, How important is it to you that the criminal-justice system rehabilitate him? (7-point end labeled: 1=Much less important; 7=Much more important).

2: Relative to giving this offender what he deserves in terms of punishment, How important is it to you that the criminal-justice system reduce his risk for committing another crime in the future? (7-point end labeled: 1=Much less important; 7=Much more important).

Appendix F

Anti-free-will condition

"I speak tonight about the illusion of free will. Now most people think that we have a subjective – a strong subjective – experience of free will, and the problem is just that we can't map it on to physical reality. This, I think, is an illusion. I think we actually do not feel as free as we think we do. This relies on us not paying very close attention to what it's like to be us. If you pay attention, you can see that you no more author the next thing you think than the next thing I say. Thoughts just emerge in consciousness. We are not authoring them. That would require that we think them before we think them. If you can't control your next thought and you don't know what it's going to be until it arises, Where is your freedom of will? The truth is we feel, or presume, an authorship over our actions and thoughts, over a certain channel of information in our conscious minds that is illusory. So how can we be free as conscious agents if everything that we consciously intend is caused by things we did not intend and of which we are entirely unaware. We can't. From the perspective of your conscious mind, you are actually no more responsible for your next thought than you are for your birth into this world. You have not built your mind. And in moments where you seem to build it – where you finally take the reins of your life – and decide to acquire knowledge or learn a new skill, the only tools at your disposal are those which you've inherited from moments passed. No one picks their parents, or the society to which they were born. No one picks the moment in history in which they live. No one picks their genes or the environmental influences that determine the structure of their brain. You are no more responsible for the exact structure and state of your brain, in this moment, than you are for your height. What you do based on conscious, predetermined decisions says more about you than anything else. Thoughts simply arise in the mind. But the idea that we as conscious beings are deeply responsible for the characters of our minds simply can't be mapped on to reality. And if we want to be guided by reality, rather than by the fantasy lives of our ancestors, I think we have to revise our view." – Sam Harris

Appendix G

Neutral Condition

The General Nature of Consciousness:

Psychologists have shown that common sense ideas about the working of the mind can be misleading. When psychology began as an experimental science, in the latter part of the nineteenth century, there was much interest in consciousness. It was hoped that psychology might become more scientific by refining introspection until it became a reliable technique.

Since the problem of consciousness is such a central one, and since consciousness appears so mysterious, one might have expected that psychologists and neuroscientists would now direct major efforts toward understanding it. This, however, is far from being the case. The majority of modern psychologists omit any mention of the problem, although much of what they study enters into consciousness. Most modern neuroscientists ignore it.

The American psychologist, William James, discussed consciousness in his work 'The Principles of Psychology' (1898), and described five properties of what he called "thought". Every thought, he wrote, tends to be part of personal consciousness. Thought is always changing, is sensibly continuous, and appears to deal with objects independent of itself. In addition, thought focuses on some objects to the exclusion of others. In other words, it involves attention. Of attention he wrote, "It is the taking possession by the mind, in clear and vivid form, of one out of what seem several simultaneously possible objects or trains of thought. It implies withdrawal from some things in order to deal effectively with others."

Many psychologists believed that some processes are subliminal or subconscious. For example perception was similar in its logical structure to what we normally mean by inference, but that it was largely unconscious. Three basic ideas of consciousness were developed. Firstly, not all the operations of the brain correspond to consciousness. Secondly, consciousness involves some form of memory, probably a very short term one. Thirdly, consciousness is closely associated with attention.

Unfortunately, a movement arose in academic psychology that denied the usefulness of consciousness as a psychological concept. This was partly because experiments involving introspection (which involves thinking about what one is thinking) did not appear to be leading anywhere and partly because it was hoped that psychology could become more scientific by studying behavior that could be observed unambiguously by the experimenter. This was called the Behaviorist movement. It became taboo to talk about mental events. All behavior had to be explained in terms of the stimulus and the response.

How can we approach the study of consciousness in a scientific manner? Consciousness takes many forms, but as I have already explained, for an initial scientific attack it usually pays to concentrate on the form that appears easiest to study. Christof Koch and I chose visual awareness rather than other forms of consciousness, such as pain or self-awareness, because humans are very visual animals and our visual input is especially vivid and rich in information. In addition, its input is often highly structured yet easy to control. For these reasons much experimental work has already been done on it.

Appendix H

Free Will Measure (FAD-Plus) (Paulhus & Carey, 2010).

Instructions: For each statement below, choose a number from 1 to 5 to indicate how much you agree or disagree.

1: People have complete control over the decisions they make. (5-point end labeled: 1=Strongly Disagree; 5=Strongly Agree)

- 2: People must take full responsibility for any bad choices they make. (5-point end labeled: 1=Strongly Disagree; 5=Strongly Agree)
- 3: People can overcome any obstacles if they truly want to. (5-point end labeled: 1=Strongly Disagree; 5=Strongly Agree)
- 4: Criminals are totally responsible for the bad things they do. (5-point end labeled: 1=Strongly Disagree; 5=Strongly Agree)
- 5: People have complete free will. (5-point end labeled: 1=Strongly Disagree; 5=Strongly Agree)
- 6: People are always at fault for their bad behavior. (5-point end labeled: 1=Strongly Disagree; 5=Strongly Agree)
- 7: Strength of mind can always overcome the body's desires. (5-point end labeled: 1=Strongly Disagree; 5=Strongly Agree)

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