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Sins of the Father: An Investigation into Judgments and Processes Involved in Within-family Tainting

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ABSTRACT OF THE DISSERTATION

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The present research focused on a real-world event (i.e., the 2015 Paris terrorist attacks) as a basis for gaining insight about the spread of negativity (i.e., "tainting") from a guilty father to an innocent son. The nature of the relationship between the son and the father was varied experimentally, a manipulation that allowed for investigation into the subjective importance of genetic versus social relationships. Across three experiments, I examined two types of judgments about the son, including responsibility and general evaluation of the target. Responsibility ratings were, on the average, extremely low. Indeed, many participants explicitly attributed no responsibility to the son. However, analyses of the general evaluation index also revealed significant evidence of tainting of the son, relative to a similarly-described person with no connections to the terrorist. Importantly, such evidence emerged even among participants who explicitly denied any responsibility on the part of the son. Moreover, the magnitude of tainting seemed to be determined most strongly by "nurture" (i.e., whether the terrorist father raised the son or not) rather than "nature" (i.e., the presence/absence of a genetic link). Generalizability considerations for extending the present paradigm to related domains are discussed.

INTRODUCTION

To what extent are individuals responsible for the sins of their relatives? This question has been considered in many different contexts for literally thousands of years. For example, the Bible describes a vengeful God who "will by no means leave the guilty unpunished, visiting the iniquity of fathers on the children and on the grandchildren to the third and fourth generations" (Exodus 34:7 New American Standard Bible). Such sentiments are echoed in Shakespeare's *Merchant of Venice*, when Launcelot asserted, "the sins of the father are to be laid upon the children." The present work refers to this phenomenon as *moral tainting,* which includes instances where perceivers respond negatively to an otherwise innocent person, simply because that person is related to a family member who has committed a crime or other moral transgression. The tendency to blame others for the transgressions of their relatives—such as in the proverbial "sins of the father" scenario—represents a phenomenon of great theoretical and practical interest.

Take for instance cultures in which "blood laws" are used as a basis for punishing innocent family members for the transgressions of their relatives. In the not-so-distant past, citizens of the Soviet Union were often sent to forced labor camps (i.e., gulags) when one of their relatives had been accused of a crime (Appelebaum, 2003). *Why might this practice haven taken place? How rational is the reasoning behind such imprisonment?* Also relevant, cycles of retaliatory violence have been found in the context of feuds between rival families, including the conflict between the Hatfields and the McCoys (King, 2013), as well as acts of violence in present-day Albania, the Northern Caucasus, and Somalia (Boehm, 1984*). Why might whole families wage war on one another due to the actions of a few?* The present work aims to gain insight on these and other matters related to within-family moral tainting.

Surprisingly little research has focused specifically on within-family moral tainting. Indeed, I was able find only three published papers that studied this phenomenon under controlled settings (Govern & Greco, 2002; Uhlmann, Zhu, Pizarro, & Bloom, 2012; Peak et al., 2016). Govern and Greco (2002) asked participants to express their liking for a college student ("Steve Brown") on the basis of a short and relatively mundane description. At the end of this description, participants were provided with a one-sentence description about one of his relatives. In three conditions, the relative was described as "serving a five year prison sentence for burglary and armed robbery", but the nature of the family connection was varied (i.e., as a cousin, brother, or twin brother). In a fourth control condition, participants were told that Steve had an uncle who "once worked in the circus."

Investigators proposed two predictions. The first, which was confirmed, asserted that the target would be evaluated more negatively if his family member had a prison record than if this was not the case. The second prediction, which was *not* confirmed, suggested that the intensity of this negativity would vary as a function of genetic relatedness between the target and family member (i.e., cousin < brother < twin brother). In other words, even though a connection with a criminal family member *did* foster negativity towards the target, there was no evidence that the strength of this connection was systematically related to the degree of genetic relatedness.

In the case of Uhlmann et al. (2012), three investigations were reported. In one study, participants read about a target's grandfather (described as biologically related or unrelated to the target) who had mistreated workers in his factory years earlier. To probe the perceived responsibility of the target for the actions of his grandfather, participants were asked to indicate the extent to which the target should, or should not, be obligated to make financial reparations to the descendants of the victims. Results showed that recommendations of reparations were greater

if the target was biologically related to his grandfather than if he was not. Two follow up studies also provided evidence of the importance of biological kinship. For example, an additional study presented participants with a scenario about "Dennis" whose father ("Bojan Haravan") was a notorious war criminal from Serbia and were told that this person was either (a) Dennis' biological father, or (b) merely linked by marriage. Results suggested greater stigmatization of the target if he was biologically related to the war criminal than if he was not.

A more recent examination into within-family tainting was completed by Peak, Eadeh, and Lambert (2016). In a series of four studies, within-family tainting was investigated by employing a scenario in which participants imagined their father had been killed. Then participants were asked to judge targets with varying relationships with the murderer (for details, see Peak et al., 2016). (For the sake of this review, I focused on judgments made about the *son* of the man who hypothetically killed the participants' father.) The first two studies reported demonstrated an important dissociation between attributions of personal responsibility versus more general aversive reactions. In the latter case, this included general feelings of negativity and behavioral avoidance, as tapped by items such as "*How negatively do you feel toward him?*" and "*I would be reluctant to shake his hand*". In the context of that prior work, answers to these and other similar questions correlated highly with one another. Hence, here (as in my earlier work) I use the term "aversiveness" as a general term based on an average of these types of reactions.

One of the more provocative results from Peak et al. (2016) concerned the distinctly different pattern of results for judgments of responsibility. On the one hand, very few participants assigned any substantial degree of responsibility to the son. For example, in Experiment 2, a non-trivial percentage of the participants in that study (58%) gave the son the

lowest possible rating of responsibility on a 0-100 scale. Nevertheless, even among the same participants who explicitly denied any responsibility on the part of the son, I observed a strong tendency for participants to report aversive feelings towards the son.

In addition to offering initial insight into the dissociation between these two classes of responses (i.e., responsibility, aversiveness), two of the studies reported by Peak et al. (2016) revealed information about the role of individual differences in these aversive responses. (Individual differences only played a role in the degree to which participants manifested aversive responding, as there was little variation in responsibility ratings.) In particular, results showed that variation in aversive reactions was systematically predicted by of individual differences in honor ideology as well as interdependence. Specifically, male participants who scored high in honor ideology responded more negatively to the son than those who scored low in honor ideology. However, for female participants, a different individual difference variable played a key role in predicting aversive reactions. There was a reliable relation between interdependence (but not collectivism) and aversive reactions to the target. Additionally, in the last study reported, genetic relatedness of the target was varied (biological son versus adopted). However, no effects were observed with regards to adopted status. However, Experiment 4 also manipulated the extent to which the original transgressor (the father) was punished for his crime. Results showed that punishment did have a significant effect on aversiveness ratings toward the son. That is, aversive responses were lowest (i.e. least negative) when participants were told that his father had already received severe punishment for his crime, with relatively higher levels of negativity when his father received either no punishment or only moderate punishment.

POTENTIAL MECHANISMS

In order to better understand the rationale for the proposed studies to follow, consideration of research and theory relevant to possible mechanisms behind within-family tainting effects is paramount. Specifically, the mechanisms by which people might show evidence of aversive responding has relevant connections to at least three lines of research and theory, the nature of which I briefly consider below.

Automatic Affective Transfer

Here I refer to a cluster of diverse but interconnected research, all of which shows (in one way or another) the tendency for people to "transfer" feelings from one stimulus to another on the basis of a relatively superficial connection. This includes research on moral contagion (Nemeroff & Rozin, 2000), which has shown that negative feelings in response to a particular stimulus (say, disgust towards a convicted a mass murderer) can automatically "spread" to benign objects that pose no logical offense to the self (e.g., a sweater that he might have worn). This idea has some relation to courtesy stigmatization (Goffman, 1963), which suggests that you might feel that your neighbor's moral integrity has been compromised simply because of the association with an unsavory relative. Such dynamics are also related to research on spontaneous transference (Carlston & Skowronski, 2005), which has shown that a neutral stimulus can "acquire" positive or negative associations, simply by being associated with a favorable or unfavorable stimulus. Taken as whole, this research is particularly important in this context, because it allows for the fact that family tainting could occur even in the absence of any genetic/biological connection.

Essentialism

Uhlmann et al. (2012) proposed a "common-sense essentialism" (p. 240) framework, in which, when individuals are perceived to be tied by essential bonds of blood kinship, "the taint of one person's actions (i.e., their 'moral essence') could spread from one person to another." This model suggests that the degree of tainting should be at least somewhat connected to the degree of genetic relatedness but, as noted earlier, this is not what Govern and Greco (2002) found. Moreover, several lines of research have shown that an intrinsically neutral stimulus can be tainted by its association with negative stimuli, even when genetic relatedness is completely absent.

Justice-Related Goals

Above and beyond the considerations raised thus far, justice-related motives (Lerner, 1980), such as people's general desire to "see that no crime goes unpunished", could intensify the spread of negativity from one family member to another, even when such transfer is not justified. For example, negativity felt towards an otherwise innocent son of a criminal might, perhaps, be somewhat greater if his unambiguously guilty father was perceived to have improperly avoided punishment, compared to a scenario in which the father had received his "just deserts." Peak et al. (2016) suggest that aversive responses to the target (son) were lowest (i.e., least negative) when participants were told that the target's father had already received severe punishment for his crime (i.e., was tried, convicted, and sentenced to life in prison without the possibility of parole). Further, significantly higher levels of negativity were revealed when the target's father received either (a) no punishment (i.e., was never tried or punished) or (b) only moderate punishment (sentenced to eight years in jail).

Summary

As seen from the preceding discussion, at least three classes of psychological processes could be responsible for within-family tainting. However, it would be unwise to conclude that one and only one of these processes is responsible. In particular, it is entirely possible that all three processes could play a role under certain boundary conditions. In other words, showing support for one class of process does not automatically rule out the viability of the other two. One of the general goals of my research is to provide greater clarity on these matters.

OVERVIEW OF THE PRESENT EXPERIMENTS

The overall goal of the present research was to gain more insight into the phenomenon of within-family tainting, above and beyond what is already known about this phenomenon (cf. Govern & Greco, 2002; Uhlmann, Zhu, Pizarro, & Bloom, 2012; see also Peak, Eadeh, & Lambert, 2016). As noted in the preceding sections, the process of within-family tainting has long been of interest to scholars in a number of disparate areas outside of psychology (e.g., theology, anthropology) and it is related to several existing areas of psychological research (e.g., stigmatization, essentialism, ideological beliefs about families). Such research has informed and guided my previous work in this area (Peak et al., 2016), and it continues to serve as a foundation for the present set of studies. This design of these studies was informed by previous work on tainting, individual differences, and cognitive load. Hence, although my work obviously builds on the extant literature, the present research was designed to significantly advance what is already currently known about within-family tainting.

Three experiments are presented. Each study presented participants with information about the terrorist activities of Abdelhamid Abaaoud, who was responsible for the Paris attacks of 2015. After this, participants were then presented with (relatively sparse) information about a

person, ostensibly Mr. Abaaoud's son. A major interest in all three studies was whether the emergence of any tainting of the son would vary as a function of the nature of the relationship between father and son. For example, in some conditions the son was genetically related to the father but was raised by another family, whereas in other cases, the son was raised by the terrorist but was genetically related to another man. In the context of measuring participants' impressions of the son, I focused on trait ratings as well as participants' feelings (e.g., of aversion) towards this individual.

Experiments 1 and 2 were fairly similar to each other. However, as I shall describe in more detail later, each study used a somewhat different approach to establishing a baseline control condition (a methodological detail critical to detecting the presence of tainting). Most elements of Experiment 3 were similar to the first two studies, but in this last study I added an experimental manipulation of cognitive load to gain insight into the role of automatic versus controlled processes in my paradigm.

A NOTE ABOUT INDIVIDUAL DIFFERENCES

Unlike my previous work, the primary focus of my dissertation was not on individual differences. In particular, I did not propose any specific hypotheses or predictions with respect to these individual differences, over and above the experimental manipulations that were developed specifically for my dissertation. In other words, my primary orientation was nomothetic rather than idiographic. Nevertheless, it seemed sensible, for mostly exploratory reasons, to measure individual difference variables, in order to investigate the extent to which the aforementioned manipulations might be contingent on individual differences (i.e., reveal manipulation x personality interactions). In Table 1, I present an overview of the individual difference variables that were included in each of my studies.

Given the somewhat exploratory nature of these analyses, there is the danger of over-interpreting "chance" findings that did not replicate across the experiments reported here. For example, it would be pointless to offer a complicated and speculative explanation of an interaction that emerged in Experiment 1, only to find that it did not replicate in Experiments 2 and 3. In the context of analyzing each individual experiment, therefore, I conducted a series of initial multiple regression analyses, corresponding to each of the individual difference measures assessed in that study. This ultimately allowed me to determine whether any moderation effects replicated across all three studies. In all cases, tests of moderation were conducted using Hayes's (2016) PROCESS program, which specifically allows testing for moderation using multi-level categorical variables in conjunction with continuous independent variables. (This program was useful for my purposes because the main categorical variable of interest in my study, relationship of the son to the father, contained more than two levels.)

As seen in Table 1, there were four individual difference variables that were measured across all three experiments, namely, need for cognition (Cacioppo, Petty, & Kao, 1984), interdependence (Cross, Bacon, & Morris, 2000), social dominance orientation (Sidanius & Pratto, 2001), and right wing authoritarianism (Altemeyer, 2007). In fact, there were no instances in which I observed a significant moderator effect that replicated across all three studies. (Experiment 3 revealed a significant interaction involving SDO. However, there was no evidence of this effect in the other two studies. Again, probing of this interaction in Experiment 3 would not be advisable, given that it was apparently spurious.) Aside from testing for the presence of moderator effects, I also conducted correlational analyses, testing for the relationship between the various individual difference variables and my primary dependent variables. Although these latter effects were not of great theoretical interest, I report these in Appendix H.

EXPERIMENT 1

Experiment 1 was designed to address a number of interrelated objectives as they pertained to cross-generational tainting effects between a guilty father (e.g., terrorist) and an otherwise innocent son. In particular, this study was designed to gain insight with respect to two factors that could play in a role in this type of judgmental setting: (a) the nature of the son's relationship to his father and (b) the types of judgments being made about the son.

Nature of the Relationship Between the Son and Father

The existing literature on inter-generational tainting (Govern & Greco, 2002; Uhlmann et al., 2012; also see Peak et al., 2016) has yet to resolve several questions as they pertain to the *type* of relationship between the original perpetrator and another family member. As noted earlier, the literature provides mixed evidence supporting the idea that *genetics* play a key role in determining within-family tainting. In some cases, sharing genes is sufficient for negative appraisal. In addition, the extent to which bad behaviors are learned through social links/observation has also been considered (Bandura, 1963; 1977; Bandura, Ross, & Ross, 1961). Others have postulated that *labels* are important in mediating hostility generalization (Berkowitz & Knurek, 1969). Names are a common way to show familial linkage. Thus, tainting may take place in response to two individuals sharing a surname. Thus, it is not yet clear as to the nature of the relationships that would lead to tainting in real world contexts to be considered ahead.

In the sections to follow, I outline the types of descriptions employed to communicate key information about the target. The present series of studies is unique in its experimental manipulation of: (a) the genetic relationship with a criminal, as well as (b) opportunities for social learning from a criminal father (i.e., being raised by him). In sum, the present work is the

first to systematically vary the genetic contribution as well as the social learning role of the perpetrator.

Type of Target Judgment

A major point to emerge from Peak et al. (2016) was that the presence (or absence) of within-family tainting processes may depend on the *type* of judgment being used to assess it. In particular, Peak et al. (2016) found very little evidence of such tainting when assessed using explicit questions about *personal responsibility*. For example, most participants indicated that the son of an unambiguously guilty father was not at all responsible for the actions of his parent. At the same time, however, these same participants reported quite negative responses towards the son, when framed in the context of social distancing questions. In short, participants seemed to be strongly asserting that the son was legally innocent of his father's wrongdoing, but they *also* indicated a general sense that they would not want to interact with the son.

In theory, these findings could be interpreted as showing that people are careful about not attributing actual blame to the son, but would be perfectly willing to attribute *other* sorts of (possibly nuanced) negativity to him. If this is indeed the case, one could find that participants would show a significant support for distancing themselves from the son. In addition, participants might also tend to ascribe more negative *traits* to the son (such as inferring that he is less honest, more dangerous, and so forth). Thus, the present work goes beyond these two classes of judgments and investigates how trait inference judgments function.

A NOTE ABOUT THE CONCEPTUALIZATION AND CONSTRUCTION OF JUDGMENT INDICES

As noted above, I had a strong *a priori* interest in focusing specifically on explicit ratings of responsibility (e.g., whether the son should be held responsible for the actions of his father).

As I will show in my analyses, these data provided ample justification for retaining a separate focus on these ratings, in contrast to more general evaluations of the target. In particular, the latter type of judgment provides leverage on testing for the presence of "tainting" effects, over and above explicit ratings of responsibility.

As for the processes involving tainting, I also proposed that this process might differ as a function of what type of judgment was being assessed. On the one hand, one type of judgment could pertain to *trait* ratings of the target, such as assessment of that person's honesty or intelligence. Another type of judgment, however, pertains to assessment of general feelings about the target, such as how comfortable or uncomfortable participants might feel shaking the target's hand. In each of the three experiments reported in this dissertation, I conducted an initial set of analyses that took this distinction into account. That is, I first created two different judgmental indices (i.e., traits vs. feelings), culling from items that I had *a priori* designated as belonging to those two categories. (In all cases, these indices were internally consistent, that is, yielded alphas > .80). Then, I conducted a series of analyses probing for tainting effects, using both sets of judgmental indices.

In all of my experiments, results were quite clear: *My data provided no empirical justification for separating the trait ratings from the feeling-based ratings, and vice versa*. Two types of findings pointed strongly in this direction. First, all three experiments showed a virtually identical pattern of results across these two indices. In other words, any evidence of tainting using the trait index was revealed in virtually identical fashion using indices of feeling-based approach/avoidance. Second, principal components analyses (using an unrotated solution) always generated one primary factor on which *all* of the items from these two categories loaded

extremely highly.[1] Hence, although I had a *theoretical* interest in separating these two classes of judgments from each other, my data provided no *empirical* basis for doing so.

Given this state of affairs, it thus seemed most sensible to use the following strategy. Whenever I was testing for the presence for tainting, I simply took *all* of the evaluative-type target ratings into account—including items tapping "traits" as well as "feelings"—using the factor score generated by the aforementioned principal components analyses. This index, which was standardized, was always coded such that higher numbers indicated more negative ratings of the target. In addition to this overall index of negativity, however, I also focused on explicit ratings of responsibility as a separate index in its own right.

Overview of Methodology: Experiment 1

In this study—as in all of the experiments to be reported in this dissertation—the procedure consisted of three stages. In the first stage, participants were presented with information about an actual terrorist, Abdelhamid Abaaoud, who was the mastermind of the Paris attacks. The purpose of that stage was merely to unambiguously establish the guilt of this individual.

In the second stage of the experiment, participants were then prompted with a brief description of a young boy, named Younes Abaaoud. Along with these descriptions, in all cases, participants were presented with a small picture of Younes. (In reality, this was actually a picture of Mr. Abaaoud's younger brother.) Hence, although there was some deception in this study, it was relatively benign, in the sense that the target being judged really *was* related to an actual terrorist. Given my paradigm focuses on the transference of tainting between generations (specifically fathers and sons), I simply described him as his son, rather than his brother. The third stage consisted of a series of judgments about Younes. As I note below, my design

contained three conditions in which I varied the nature of the relationship of Younes to his father. The design also contained a fourth, control condition, the nature of which I shall consider presently.

Experimental Condition 1 (Raised by terrorist/genetically related)

The purpose of this condition was to convey, to participants, that Younes was raised by his father and that he was genetically related to him. In conversational norms, this kind of relationship is a strong cultural "default", which is assumed whenever one says that "X is the son of person Y". Hence, in this condition, participants were simply told that *Abdelhamid Abaaoud (the main mastermind of the Paris attacks) has a son, Younes Abaaoud.* After being presented with this information, participants were further informed that *Authorities are currently seeking the whereabouts of Younes and, if apprehended, will be brought in for further questioning.*

Experimental Condition 2 (Adopted by terrorist/no genetic relation)

In this condition, participants were told that *Abdelhamid Abaaoud—the main mastermind of the Paris attacks—adopted a son, who he raised from birth (Younes Abaaoud).* Hence, this information was similar to Condition 1 in retaining the *social* relationship, but it removed the genetic connection. As in Condition 1, the presentation of this information was followed by notice that the authorities were currently seeking the whereabouts of Younes, using the same wording as the prompt used in the first condition.

Experimental Condition 3 (Adopted by another family/genetic link to terrorist).

In this condition, participants were told that *Abdelhamid Abaaoud (the main mastermind of the Paris attacks) has a son, who was adopted and raised by a family in a village far away. This boy's name is Younes Taheri.* In essence, then, Condition 3 represents the obverse of the second condition, one that retains the genetic link to the terrorist, but removes the social

relationship (i.e., "nature, no nurture"). As in Conditions 1 and 2, this information was again followed by notice that Younes was being sought by authorities, using the same wording as in those other two studies.

Experimental Condition 4 (Control)

As with most experimental designs, a meaningful control group is an important desideratum. However, this was *especially* true in my paradigm. In particular, detection of whether there is any tainting of the target—via a guilty family relative—absolutely requires a meaningful baseline of comparison. Stated another way, the absence of a meaningful baseline condition precludes any conclusions being made about tainting at all.

Nevertheless, the construction of the control group presented some surprisingly complex considerations. In particular, I discovered that there were at least two "solutions" to generating a proper control group, each with their own respective advantages and disadvantages. That is, each approach to constructing a control group contained a "trade off" of sorts, insofar as it was able to address certain issues very effectively, but at the cost of addressing others. The approach described below represented one of these strategies, and was implemented in Experiment 1. As will become clearer later in this dissertation, I took a different approach in Experiment 2. It is important to note, however, that *the different strategy that I used in Experiment 2 ultimately generated the same conclusions as Experiment 1, and vice versa.* The convergence of my results across the two studies is important to keep in mind, because it shows that the *methodological* choices made here ultimately did not make a difference in terms of my actual results.

In Experiment 1, I was most concerned about establishing a baseline control condition for the son, while removing (a) any mention of a guilty father but also (b) any priming of terrorist threat (i.e., the description of the Paris bombings). The rationale for this decision is that priming

participants with *any* information about terrorist threat could potentially alter how participants responded to a young Arabic boy, even if there was no family connection to the terrorist in question. However, in removing all of this "terrorist-related" information, this presented something of a methodological challenge in its own right. In particular, it now became necessary to provide participants with a meaningful task in which they could form an impression of Younes. For participants in the control condition in Experiment 1, therefore, they were presented with the following set of instructions:

> Research and theory on social judgment (e.g., Wyer & Srull, 1986) has shown that people are capable of forming meaningful impressions of other people, even when the available information is somewhat "sparse" or limited. In particular, people seem to use the information that is presented, and then use that information as a basis for inferring, or extrapolating, to any judgments that might be made. The purpose of our research is to gain further insight into that process. On the next screen, we will be presenting you with some information about a particular individual. **Please attend to this information carefully**, as we will be asking you to remember some of the details and make some judgments. In other words, please consider this information in a thoughtful way, as this will prepare you to answer the questions we will pose later.

At this point, participants were presented with some "pseudo-diagnostic" information about him. (By *pseudo-diagnostic*, I refer to information that appears to provide personal information about the target, but actually provides no truly meaningful information about his personality. This information was inserted because research and theory on impression formation suggests that people will be reluctant to express judgments of a target person if there is a complete absence of any information about the target at all; cf. Darley & Gross, 1983) This information consisted of just a few sentences about Younes, as follows:

> Younes Taheri is a twelve year old boy and lives in Syria, near the northern border to Turkey. During the week, he attends school, where he is learning Arabic, science, and math. He has a younger brother who is nine and attends school with him, and a sister who is four. On the weekends, he likes to spend time with family, and play outside with his friends. His best friend is eleven years old and lives next door.

Following the presentation of this information, the remainder of the study was largely the same as for the other conditions. However, it was necessary to remove any reference to his supposed "responsibility" for the terrorist attack, since no such mention of this attack occurred in the first place.

Summary of Experiment 1 Design

In summary, Experiment 1 randomly assigned participants to one of four conditions. In three of these conditions, participants were initially presented with information about the terrorist acts of a person named Abdelhamid Abaaoud. In these conditions, participants were then presented with information about Abaaoud's son, whose relationship to his father varied as a function of experimental condition. There was also a fourth condition, which served as a baseline control. In that condition, all references to the terrorist (Abdelhamid Abaaoud)—as well as his terrorist acts—were completely removed. For reasons noted above, this necessitated some modification of the task, including the insertion of a different cover story, as well as the inclusion of some pseudo diagnostic information about Younes.

An "Advance Preview" of the Methodological Approach Taken in Experiment 2

It is true, on the one hand, that the control condition in Experiment 1 provided a reasonable way to establish a neutral baseline. However, as with many methodological solutions, there were some drawbacks to that choice. For example, the control condition contained a different instructional set and pseudo diagnostic information that was not present in the other three conditions. In addition, the first three conditions "primed" participants with the threat of terrorism whereas this was not true of the control condition. In theory, at least, these represent experimental confounds. That is, in my effort to create a meaningful control group, this meant that the control group differed from the other conditions in a variety of different ways. I did not

consider these confounds to be particularly serious but they should not, of course, be ignored. Given these considerations, it seemed prudent to take a somewhat different methodological approach in Experiment 2, the nature of which I will describe in more detail later. As it turns out, I was being over-cautious, as my results revealed a very similar pattern of results, regardless of how the control group issue was operationalized.

Predictions for Experiment 1

Prediction 1

Theoretical replication of Peak et al. (2016) would predict that ratings of explicit personal *responsibility* of the target for the transgressions of his father will be very low. In addition, I postulate there will still be evidence of tainting (aversion, negative trait ratings), *even* if ratings of responsibility are indeed minimal.

Prediction 2

Given evidence presented by Govern and Greco (2002) and Peak et al. (2016), I predict that the target will be evaluated more negatively if he is related to a terrorist than if he is not. I anticipate that the severity of tainting will systematically vary by type of relationship. In particular, (a) the target with genetic *and* social links will be judged most harshly, (b) the targets with either genetic or social links (but not both) will be moderately tainted, and (c) the control target (with no relationship to the criminal) will be judged with very low negativity.

Method

Participants and Design

A total of 157 residents of the United States[2] (45 male, 109 female, 2 trans, 1 preferred not to answer) were recruited through Amazon Mechanical Turk, in return for a small gift

voucher. The experiment included one between-subjects manipulation, pertaining to the relationship between the terrorist and the target.

Stimuli and Procedure

Assessment of individual differences. After completing the consent form, participants completed a series of individual difference measures, which were designed to assess several constructs of potential relevance to the tainting process. These included measures of (a) honor ideology (Barnes, Brown, & Osterman, 2012), (b) interdependence (Cross, Bacon, & Morris, 2000), (c) collectivism (Triandis & Gelfland, 1998), (d) need for cognition (Cacioppo, Petty, & Kao, 1984), (e) right-wing authoritarianism (Altemeyer, 2007), and (f) social dominance orientation (Sidanius & Pratto, 2001). As I noted in an earlier section, analyses involving one of these variables—need for cognition—consistently revealed a theoretically important pattern of results; I present these NFC-related effects in a separate section after reporting the main analyses for Experiment 2.

Presentation of incriminating information about father. Next, all participants were presented with a reminder of the Paris attacks on November 13th, 2015 consisting of a timeline of events as well as a description of the terrorist thought to be behind the attacks (i.e., Abdelhamid Abbaoud). Information presented to participants is shown in Appendix A.

Presentation of target information. After this, participants were randomly assigned to one of four experimental conditions, which varied the nature of the target description (see Appendix B).

Target rating task. After reading the information presented about the target (Younes), participants were then asked to make a series of judgments of this person, the nature of which are described in more detail ahead. In developing this judgment task, I was mindful of the fact that

participants assigned to Conditions 1-3 had just been provided with information about the target's father (the terrorist). As such, it was important that participants knew that their goal was to form judgments of the young boy, not his father. Thus, prior to making any judgments, participants in Conditions 1-3 were told "for the following questions, we would like you indicate how you would respond to Younes Abaaoud, the younger of the two people you just read about."

Assessment of general negativity. As noted earlier, my questionnaire was originally designed to provide separate measures of trait ratings as well as general feelings of approach/avoidance. For example, one block of questions was specifically devoted towards assessing inferences of personality traits along a variety of different dimensions (presented in randomized order), half of which were positive (e.g., *honest, smart, friendly*), and half of which were negative (e.g., *dangerous, immoral, unfriendly*). In contrast, a separate block of items was designed to capture how participants might respond to the target if they met him 'face to face', again with a randomized presentation of positively and negatively worded items (e.g., I *would feel calm and collected; I would feel uneasy)*. Still other items, measured in a separate block, measured more general reactions to the target (e.g., *How positively do you feel towards him? How negative do you feel towards him?*).

As it turns out, however, the basis for making any "distinctions" of this sort (e.g., between trait ratings and feelings) was not supported empirically. This can be clearly seen by the pattern of loadings from the first initial factor of a principal components analyses (with unrotated solution). Loadings are presented in Table 2. As seen here, all of the items loaded highly on this factor, which simply appeared to be a general index of negativity with higher numbers indicating relatively unfavorable reactions to the target. In the primary analyses to be reported ahead, therefore, assessment of participants' reaction to the target was based on a standardized factor

score, as generated by SPSS. As with all factor scores of this type, this index represents a statistical combination of all of the items in the analyses, weighted by their respective loadings on that factor.

Assessment of explicit responsibility. For participants in Conditions 1-3 (i.e., those who had been informed that Younes was related to the terrorist), I was particularly interested in measuring participants' explicit ratings of responsibility. This was assessed via presentation of three items: *To what extent is Younes responsible for the Paris terror attacks?; In general, how much do you blame him for the Paris terror attacks?' Should he be legally charged for the Paris terror attacks?* For all three items, participants were asked to make their ratings along a scale ranging from 0 (*not at all*) to 100 (*very much so*). A composite measure of explicit responsibility was formed on the basis of an average of these three items ($\alpha = .94$).

In this type of paradigm, one could argue that assessment of responsibility might be contingent on what types of judgments participants might have made *prior* to expressing their opinions about responsibility. For this reason, I randomized the order in which participants encountered these items, relative to the other types of items in the questionnaire. For example, some participants made responsibility ratings *prior* to making any trait ratings of the target, whereas some participants made these ratings *after* the trait ratings. In addition, when participants were presented with these three items, the order in which they actually appeared to the participants was also randomized. None of the effects reported in this paper (here, as well as in Experiments 2 and 3) were contingent on either type of ordering manipulation.

Demographics. Information about participant gender, race, education, and income were collected. Appendix C provides descriptive information pertaining to these demographic variables.

Results

Analyses focus on two types of judgments. First, I will present the findings related to explicit responsibility. Then, results concerning general negativity are presented. The mean and standard deviation for judgment ratings in each condition are presented in Table 3. In addition, an investigation into evidence of tainting (i.e., negative responses) when responsibility is rated at zero will be discussed.

Explicit Responsibility

It is useful at the outset to present the overall frequency distribution of composite responsibility ratings, temporarily collapsing over conditions. As seen in Figure 1, ratings of responsibility were fairly low (grand mean = 22.08). This figure also illustrated the limited variability of responsibility ratings. Nearly a third of participants (27%) in Conditions 1-3 responded that the target had zero responsibility for the terrorist attacks.[3] Thus, participants *generally* disavowed any responsibility on the part of the target, vis a vis his guilty father. Mean levels of responsibility attributed to the son were very similar across Conditions 1, 2, and 3 (*M*s = 20.04, 29.26, 16.97, respectively).

General Evaluation of the Target (General Negativity)

Here I consider participants' general evaluation of the target. Recall that these sentiments were operationalized in the form of a standardized factor score, based on an unrotated principal components analyses of all of the dependent variables, except for the explicit responsibility ratings. Recall also that higher numbers on this index reflected more negative impression of the target. In the discussion to follow, I use the label "general negativity" as a heuristically useful reminder that these evaluations provide an index of tainting vis a vis the guilty father.

In order to understand how the average level of negativity might have varied as a function of condition, I next submitted the general negativity index to a one-way ANOVA. This analysis revealed a significant effect of condition, $F(3, 157) = 80.97$, $\eta_p^2 = .614$, $p < .001$. A graph showing the pattern of means responsible for this effect is presented in Figure 2. As seen here, these findings strongly suggest the presence of tainting relative to the control condition (see also ahead for follow-up contrast coding). That is, when participants were told that the young boy had some sort of family connection to a notorious terrorist, this led participants to respond more negatively to him compared to the control condition. This finding is important because it provides far more compelling evidence of within-family tainting relative to my earlier work.

In order to more formally confirm which conditions were actually different from each other, I then conducted a series of contrast analyses, including all possible pair-wise comparisons among and between the four conditions. These analyses revealed that *all* of the conditions were different from each other, save for one. In particular, the mean rating from Condition 1 (Raised by terrorist/genetically related) did not significantly differ from the mean rating of Condition 2 (Adopted by terrorist/no genetic relation), $F(1, 79) = .009$, $p = .92$, Cohen's $d = .03$. In all other cases, however, each of these means were significantly different from each other, all Fs > 5.07, all ps < .03, all η_p^2s > .062 (degrees of freedom in these analyses are identical to those reported immediately above).

Further Investigation into General Negativity in the Absence of *Any* Explicit Responsibility

The preceding analyses are critically important in the context of my dissertation, given that they provide evidence for the presence of tainting of an otherwise innocent son vis a vis a guilty father. However, the responsibility ratings, as discussed above, provided me with an

opportunity to generate even more compelling evidence for such tainting. In particular, a fairly large number of my participants disavowed any responsibility on the part of the son. More concretely, these participants gave the son a rating of "0" –the lowest possible score, on a 100-point scale—every time they were asked to make an assessment of the son's responsibility vis a vis the crimes of his father. This raises a provocative question: *Would I find evidence of tainting here too, even among the participants who strongly denied any responsibility on the part of the son?*

In order to test this idea empirically, I temporarily applied a filter in SPSS, so that it included *only* those participants whose composite responsibility ratings were 0 (the lowest possible rating on the 100-point rating scale). Thus, these participants had told us *three times* that they did not attribute any responsibility to the son. The question of key interest here was whether the negativity ratings, as provided by these participants, would be any different from the ratings of the control target. To this end, I thus conducted a one-way ANOVA on the negativity index with the "zero responsibility" participants from Conditions 1-3, plus all of the participants who had been assigned to the control condition.

As seen in Figure 3, there did indeed appear to be significant tainting of the son, *even among participants who, themselves, had explicitly denied that the son bore any responsibility for the actions of his father.* This pattern of means was responsible for a main effect of experimental condition, $F(3, 71) = 32.689$, $p < .001$, $\eta_p^2 = .59$. Given the theoretical importance of this effect it was important to conduct further analyses to verify which of these conditions differed from the control.

In fact, all of these contrasts with the control condition were significant. In particular, three separate contrast analyses (each involving a contrast with the control) revealed a significant

difference between the control and (a) Condition 1 (Raised by terrorist/genetically related), $F(1, 49) = 69.655$ $p < .001$, Cohen's $d = 2.45$ (b) Condition 2 (Adopted by terrorist/no genetic relation), $F(1, 45) = 45.911$, $p < .001$, Cohen's $d = 2.51$, as well as with (c) Condition 3 (Adopted by another family/ genetic link to terrorist), $F(1, 55) = 55.445$, $p < .001$, Cohen's $d = 2.02$. Hence, regardless of the nature of the relationship between the son and his guilty father, these analyses showed tangible presence of tainting, even among the very participants who explicitly denied that the son bore any responsibility at all!

Discussion

My first prediction postulated that ratings of explicit personal *responsibility* of the target for the transgressions of his father will be very low. This was what I found (grand mean = 22.08). This figure also illustrated the limited variability of responsibility ratings. 27% of participants responded that their given target should not at all be considered personally responsible. This *general* rejection of responsibility replicates my previous work and shows extension of findings to another paradigm, one that involves a real-world crime (vs. hypothetical scenario). In addition, I postulated there would still be evidence of tainting (aversion, negative trait ratings), *even* if ratings of responsibility are indeed minimal. I found to be true as well. By completing analyses on just those who attribute zero responsibility, I gained leverage in determining that a disassociation between within-family tainting judgments does exist.

Second, I predicted that targets with a relationship with the terrorist (albeit genetic or social) will be evaluated more negatively than if he is not. As in Peak et al., (2016) all 'son' targets were evaluated more negatively than control targets. In addition, the severity of negativity varied systematically by type of relationship, with one exception. There was no difference in negativity between Condition 1 (Raised by terrorist/genetically related) and Condition 2

(Adopted by terrorist/no genetic relation). Thus, tainting is highest when the relationship between target and criminal involves a strong social connection (i.e., being raised by the terrorist). As for the target whose relationship with the terrorist was *only genetic*, he tended to be judged *less* negatively than the other 'son' condition counterparts. However, the target sharing only genetic connection to the terrorist (Condition 3) did elicit significantly more negativity than control targets. Thus, at least on the basis of these data, "nurture"—being *raised* by the terrorist—seemed to be playing a larger role than the presence or absence of a genetic relationship.

EXPERIMENT 2

Given the provocative and fairly novel effects generated in Experiment 1, it seemed prudent to conduct a second study in order to verify the robustness of these findings. As I will discuss in more detail ahead, however, Experiment 2 took a somewhat different methodological approach in the service of further establishing the validity of the baseline (control) condition. This necessitated a few changes to my general methodology, both as it applied to the control condition, but also more generally.

To begin, *all* of the participants in Experiment 2, regardless of condition, were given the initial "impression formation instructions" and all were provided with the same set of pseudo-diagnostic information about Younes that had been presented in the control condition in Experiment 1. In addition, I removed all references to the fact that "authorities were looking for Younes". In combination, these changes removed several confounds that were present in my first study. Moreover, by removing information about the "authorities" who were looking for the target, this also eliminated the possibility that participants might have inferred some guilt on the part of the son, simply because the authorities were looking for him.

In the context of presenting the method for Experiment 1, I had noted that the presence of *any* information related to terrorism could, in principle, make a difference in terms of how participants would respond to a young Arab boy. In order to test this idea, I included two slightly different versions of the control group. In one control group, all references to Mr. Abaaoud—as well as his terrorist acts—were removed, consistent with what was done in Experiment 1. This was my preferred version of the control group, since it most closely matched the approach taken in Experiment 1. In a second version of the control condition, however, participants *were* initially presented with information regarding the terrorist acts of Abaaoud, while removing any family links between these individuals. I did not expect to use this second control condition in my formal analyses, but it did provide me with an opportunity to see if the mere presence of the terrorist information, in and of itself, would significantly affect ratings of the young boy.

Summary of Design

In summary, Experiment 2 contained a total of five experimental conditions. Three of these (Conditions 1-3) presented participants with information about the son of a guilty father. These three conditions manipulated the nature of the relationship between son and father in a manner paralleling Experiment 1, albeit with a few methodological changes. The other two conditions served as a controls, in the sense that participants were not provided with any connections between the young boy and Mr. Abaaoud. However, this "father free" condition was created in two different ways.

In one of these controls, participants were not presented with any information about the terrorist (or about the Paris attacks) in the first place. Hence, here I eliminated any possible connection to the terrorist, by simply removing this information in the protocol. In the second control condition, participants *were* initially presented with information about these terrorist

activities of Mr. Abaaoud. However, when participants were later provided with information about the young boy, they were not provided with any information that linked him to the actions of Mr. Abaaoud. To reiterate a point made earlier, each of these control conditions have merits in their own right, even though their approach to establishing a baseline condition were obviously different from one other. As I will show below, the pattern of means emerging from these two control conditions were rather similar to one another.

Method

Participants and Design

A total of 200 residents of the United States (64 male, 134 female, 1 trans, 1 prefer not to answer) were recruited through Amazon Mechanical Turk, in return for a small gift voucher. The experiment included one between-subjects manipulation (five levels), pertaining to the information presented regarding the target's relationship with terrorist Abdelhamid Abaaoud.

Stimuli and Procedure

The stimuli and procedure of Experiment 2 are nearly identical to that described in Experiment 1, except as noted below. Participants again completed individual difference measures, read instructions and an overview of the 2015 Paris terror attacks, then were randomly assigned to condition. As before, each condition varied the relationship between the young boy (Younes) and the terrorist. In this study, participants were randomly assigned to one of five conditions. This included the three versions of the "son" condition (Conditions 1-3) as well as two control groups (Conditions 4 and 5). The target descriptions used in Experiment 2 are presented in Appendix D. The remainder of the experiment, including the nature of the judgment tasks and collection of demographic information, was the same as that used in Experiment 1.

Initial Analyses on the Two Control Conditions

Before presenting my main analyses, it is useful to know whether the presence (vs. absence) of the terrorist-related information about the Paris attacks made a significant difference in terms of how participants responded to the young boy. Analyses revealed no reliable difference in terms of how participants generally responded to the young boy as a function of whether terrorist information was present (M = -.40) or absent (M = -.67), $F(1, 81) = 2.903$, η_p^2 = .035, p = .09. The marginal effect in question merely reveals a small (and relatively uninteresting) trend to respond more negatively to the boy if primed with terrorist-related information than if not. It is important to recall that the second control listed above (Condition 5 - without terrorist-related information) was most similar to that of Experiment 1. Hence, to maximize comparison between the two studies, the remainder of the main analyses in Experiment 2 focused on this control condition only.

Results

As in Experiment 1, analyses focus on two types of judgments. First, I will present the findings related to explicit responsibility. Then, results concerning general negativity are presented. The mean and standard deviation for judgment ratings in each condition are presented in Table 4. In addition, an investigation into evidence of tainting (i.e., negative responses) when responsibility is rated at zero will be discussed.

Explicit Responsibility

The overall frequency distribution of composite responsibility ratings (temporarily) collapsing over conditions is reported in Figure 4. As in Experiment 1, ratings of responsibility were fairly low (grand mean = 21.88). This figure also illustrated the limited variability of responsibility ratings. Nearly a half of participants (44%) in Conditions 1-3 responded that the

target had zero responsibility for the terrorist attacks. As in Experiment 1, the overall level of responsibility was fairly low in Conditions 1, 2, and 3 (*M*s = 17.38, 32.38, 16.82, respectively).

General Evaluation of the Target

To determine the extent to which general negativity varied as a function of condition, I submitted participants' factor scores (as derived from the PCA analyses in SPSS) to a one-way ANOVA. This analysis revealed a significant effect of condition, $F(3, 160) = 17.439$, $\eta_p^2 = .251$, $p < .001$.

The graph showing the pattern of means responsible for this effect is presented in Figure 5. As seen here, the general pattern here was similar to the results of Experiment 1. That is, there appeared to be tainting of the son relative to the control, albeit to varying degrees. In order to more formally confirm the nature of these differences, I then conducted a series of contrast analyses. Contrasts yielded significant differences between all pairs of conditions (*p*s < .002), save for two: First, there was no statistically significant difference in general negativity between Condition 1 (Raised by terrorist/genetically related) and Condition 2 (Adopted by terrorist/no genetic relation), $F(1, 78) = 2.065$, $p = .155$, Cohen's $d = .33$. Second, there was no difference between Condition 1 (Raised by terrorist/genetically related) and Condition 3 (Adopted by another family/ genetic link to terrorist), $F(1, 81) = 3.01$, $p = .09$, Cohen's $d = .74$.

Further Investigation into General Negativity in the Absence of Any Explicit Responsibility

As in Experiment 1, it is again useful to examine the pattern of tainting among participants who explicitly indicated no responsibility on the part of the son (i.e., consistently made responsibility ratings of zero). Using the same analytic approach as in Experiment 1, I then

submitted the responsibility index to a one-way ANOVA. This analysis yielded a main effect of condition, $F(3, 92) = 6.389$, $p = .001$, $\eta_p^2 = .18$.

The pattern of means corresponding to this effect is shown in Figure 6. Additional contrast analyses revealed evidence of tainting relative to the control target in two instances. In particular, analyses revealed that the control condition was significantly different from ratings made in (a) Condition 1 (Raised by terrorist/genetically related), $F(1, 61) = 15.703$ $p < .001$, Cohen's $d = 1.04$, as well as in (b) Condition 2 (Adopted by terrorist/no genetic relation), $F(1, 54) = 6.767$, $p = .01$, Cohen's $d = .77$. However, ratings by participants who were assigned to Condition 3 (Adopted by another family/ genetic link to terrorist) did *not* differ from control, $F(1, 59) = .115$, $p = .736$, Cohen's $d = .10$. Thus, in two out of the three "son" conditions, I again found evidence of tainting vis a vis the terrorist father, even when responsibility ratings were zero.

Discussion

Although the conceptual issues under concern were the same as Experiment 1, I used a somewhat different methodological approach in Experiment 2. The most important aspect of these changes is that they eliminated a few confounds that were present in the first study. For example, unlike my first study, all participants were presented with same short "pseudo-diagnostic paragraph about the young boy, and all were provided with the same impression formation instructions. These changes also allowed me to compare and contrast two slightly different approaches to constructing the control condition. In particular, one version of the control removed all of the information about the terrorist/Paris attacks (the version that was most closely related to the control condition used in Experiment 1). The other version left the terrorist information intact, but did not present any connections between the young boy and the terrorist

who participants had read about earlier. Interestingly, results revealed negligible differences between the two control conditions. Hence, at least in this study, generally priming participants with the threat of terrorism did not appreciably change how participants responded to the young Arab boy.

In sum, findings provided converging evidence for conclusions drawn in Experiment 1. In both investigations, within-family tainting occurred for targets related to a terrorist. Again, responsibility ratings were very low, whereas significant general negativity toward son targets emerged. That is, the father/son relationship between criminal and target (collapsed over genetic/social relationships) led people to feel aversive toward an innocent boy. Even further, in cases where the target had been raised by the terrorist, tainting occurred *even when responsibility ratings are zero*. Together, patterns of within-family tainting between Experiments 1 and 2 were very similar.

EXPERIMENT THREE

Dual process theory considers the nature of two systems of processing: automatic (System 1) versus controlled (System 2; Evans, 1984; Kahneman, 2011; for a review, see Sherman, Gawronski, & Trope, 2014). System 1 encompasses processing that is relatively fast, immune to conscious control, and that requires minimal attentional resources (Bargh & Uleman, 1989). Research and theory in social cognition has effectively highlighted the automatic nature of many types of social judgment, including but not limited to those associated with stereotyping and prejudice (Roediger, 1990; Banaji & Greenwald, 1995). Conversely, System 2 represents controlled (i.e., "slow") processing. Judgments made with controlled processing are much more reliant on one's effort and conscious use of mental resources.

As observed in the first two experiments of this paper, I found evidence of tainting of an otherwise innocent son, even among participants who explicitly disavowed any responsibility for the actions of his father. This *suggests*—although it certainly does not prove—that the tainting process in question may be guided by relatively automatic processes. In other words, if a participant explicitly believed that the son was not guilty of any of the misdeeds of his father, then this would suggest, on a rational level, that participants would not respond to him in a negative way. Yet, my results *did* appear to show some evidence of tainting, even among such participants. This apparent contradiction could, in principle, be resolved if the tainting process is occurring relatively automatically. Adding to the plausibility of this idea is the general findings from research and theory on "magical beliefs" and moral contamination (Nemeroff & Rozin, 2000). Studies in this area have shown that judgments of a stimulus can often be "tainted" even though there is no *rational* reason for this effect to occur (Rozin, Millman, & Nemeroff, 1986).

The Logic of Cognitive Load Manipulations

Suppose, for the moment, that the tainting processes revealed in this dissertation are guided by automatic processes, but that the *responsibility* ratings are governed by *controlled* processes. If this presumption is correct, then an experimental manipulation of cognitive load offers a relatively straightforward set of predictions. As for the pattern of tainting *per se*, a manipulation of cognitive load should not have any effects. In other words, if the tainting process is *not* dependent on the consumption of cognitive resources, then a manipulation designed to reduce the availability of cognitive resources should have no effect.

In the case of *responsibility* ratings, one should expect an effect of cognitive load (again, presuming that these judgments are guided by controlled processing). In particular, one would expect participants to generate higher ratings of responsibility if resources are depleted than if

they are not. Stated another way, the *reason* that participants are generating low ratings of responsibility could, in theory, be due to the implementation of relatively controlled processes. If I was to *take away* the cognitive resources needed for this process, one would thus expect participants to be more likely to rate the son as more responsible for the sins of his father than would otherwise be the case. One could also frame this effect in terms of judgmental correction. In theory, participants might have an *initial inclination* to blame the son for the actions of his father, but then correct for this conclusion because it is "not rational." A cognitive load manipulation could, according to this logic, circumvent or "knock out" this correction processes.

The previous literature offers some indirect support for this conjecture. Take for example, van Knippenberg, Dijksterhuis, and Vermeulen (2003)'s work. This experiment investigated judgments of the guilt of a defendant as a function of activated stereotype (positive vs negative) and cognitive load. When mental resources were limited (i.e., under high load), participants seemed to rely more on the negative associations of the stereotype in question, and rendered higher judgments of guilt and harsher suggestions for punishment. Thus, stereotypes about those being tried for a crime (defendants) were exacerbated when mental resources were limited by cognitive load manipulation. In addition, stereotypes have been found to strengthen with decreased processing capacity (Allen, Sherman, Conrey, & Stroessner, 2009).

In summary, the results from Experiments 1 and 2 provided provocative evidence of an apparent "disconnect" between judgments regarding explicit responsibility and aversion. One way of explaining this disconnect is to presume that responsibility ratings are guided by controlled processes, but that the tainting process is relatively automatic. The present study was designed to test the viability of this idea through a cognitive load manipulation.

Method

Participants and Design

A total of 251 residents of the United States (77 male, 170 female, 0 trans, 2 prefer not to answer) were recruited through Amazon Mechanical Turk, in return for a small gift voucher. Two participants were not US citizens and were omitted from analyses (N=249). The design included two between-subjects variables. One of these pertained to manipulation of target type, containing three levels (see ahead). The other variable pertained to cognitive load (high vs. low). Hence, the design was a 3 (Target type) x 2 (Cognitive load) between-subjects design.

Stimuli and Procedure

After completing individual difference variables, participants were randomly assigned to judge three types of targets, using three of the conditions from Experiment 2: Condition 1 (Raised by terrorist/genetically related), Condition 3 (Adopted by another family/genetic link to terrorist), Condition 5 (Control-terror information absent)[4]. The target descriptions corresponding to each of these conditions is shown in Appendix E. To facilitate comparison with my earlier studies, I retain these labels in this study. Within each of these three conditions, participants were randomly assigned to either a high versus low cognitive load condition. Thus, providing six unique conditions.

Implementation of Cognitive Load Manipulation

The general approach to this manipulation was generally modelled after a procedure employed by Conway and Gawronski (2013), who also conducted their research with an online sample. After reading their assigned description, participants in this study were presented with the following instructions, along with an image containing objects and alpha-numeric characters:

> "Before the next set of questions, we have an additional task that we'd like you to do in the meantime.

> As you can see below, we have presented you with a matrix of colored objects along with some symbols and text. Your task, at this point, is to **memorize** that **entire image** as best you can. The goal is to be able to "see" the entire image in your mind's eye, even after you advance to the next screen. Try to memorize the **entire image**, not just one or two parts of it.
>
> At a later point in this study, we are going to ask you some questions about this image. It is VERY IMPORTANT that you "imprint" this image in your mind. Keep in mind that this is a "pure memory" task. Thus, please do not write down anything down on a separate piece of paper or on your computer."

Inspired by manipulations used in previous experiments (Gilbert & Osborne, 1989; Conway & Gawronski, 2013), images presented to participants in the high cognitive load condition included a string of seven alpha-numeric characters (e.g., *Hj69*7p*), whereas images used in the low cognitive load included short pairs of alpha-numeric characters (e.g., *Hj*). Cognitive load manipulation materials are presented in Appendix F.

As with most implementations of cognitive load manipulation, it is important to have a memory probe task that occurs *after* the target judgment that was made "under load". In other words, each implementation of the cognitive load manipulation consists of three stages: (a) the introduction of the cognitive load (i.e., the string to be held in working memory), (b) judgment of the target person, and then (c) memory probe, which asks participants to accurately reproduce the string of characters that they were asked to hold in working memory.

Therefore, participants in the high load condition, were asked to recall the sequences of seven alpha-numerical characters (e.g., *A red circle had a string of characters printed in the middle. It began with "Hj..." followed by five other characters. In the space below, please type in the full seven characters, including the Hj. If you are unsure, just make the best guess you can.*). Analogously, those in the low load condition were asked to recall the two alpha-numeric characters (e.g., *A red circle had a string of characters printed in the middle. It began with "H.."*

followed by one other character. In the space below, please type in the two characters, including the H. If you are unsure, just make the best guess you can.). A text box was provided for the participants to enter the sequence presented to them.

Consistent with the approach taken by Conway and Gawronski (2013), the cognitive load manipulation was actually repeated three times, interspersed through the judgment task. In particular, about one third the way through the judgment task, the aforementioned procedure was used (presentation of string to be remembered, judgments of the son, memory probe). Then, for the middle third of the judgments, the same process was used, as was the case for the latter third of judgments. However, because the order *of judgment type* (e.g., general traits, feelings, responsibility) was completely randomized, this ensured that every type of judgment was equally "loaded" compared to the other.

Demographics

As in Experiments 1 and 2, information about participant gender, race, education, and income were collected. Frequencies, means, and standard deviations were similar to those in Experiments 1 and 2 and are reported in Appendix G.

Results

Preliminary Analyses on Cognitive Load

In an initial set of analyses, I conducted extensive probing to see if this manipulation had any effects in my data. It did not. Of particular note, there was no evidence that the manipulation affected responsibility ratings, either in its own right, or in combination with the manipulation of the features of the target person, all *p*s > .60. Nor was there any evidence that this manipulation affected ratings of general negativity (i.e., as markers of tainting), all *p*s > .50. Moreover, further probing continued to generate null effects when I made further delineations among participants

in terms of whether they were relatively accurate or not in the memory probe condition. Simply put, the manipulation of cognitive load had no effects at all. For the ease of expositional clarity, therefore, the analyses to be reported below collapse over this variable.

Analyses of Responsibility

The overall frequency distribution of responsibility composites (collapsing over conditions) reveals similar patterns to frequencies shown for Experiments 1 and 2. The frequency distribution is reported in Figure 7. As in Experiments 1 and 2, ratings of responsibility were fairly low (grand mean = 17.26) and nearly one third of participants (32%) in Conditions 1 and 3 responded that the target had zero responsibility for the terrorist attacks. In this experiment, there were only two conditions in which responsibility ratings were collected, that is, Condition 1 (Raised by terrorist/genetically related) and Condition 3 (Adopted by another family/genetic link to terrorist). Paralleling results from Experiments 1 and 2, responsibility ratings between these two conditions, were very similar (*M*s = 20.19 and 14.36, respectively).

General Negativity

As in Experiments 1 and 2, an unrotated factor score was computed and saved from a factor analysis of all of the dependent variables (except for the responsibility items). The first factor (general negativity) accounted for 58% of the variance and item loadings were similar to those found in Experiments 1 and 2.

An overall analysis of variance once again revealed significant differences in average negativity as a function of experimental condition, $F(2, 249) = 29.828$, $\eta_p^2 = .195$, $p < .001$ for the omnibus test. The pattern of means corresponding to this analysis is shown in Figure 8. Follow-up contrast analyses revealed significant differences involving all possible pairs of conditions. That is, Condition 1 was different from Condition 3 as well as Conditions 5, and

Conditions 3 and 5 were different from each other, all ps $\leq .003$). In sum, the son with both genetic and social connections to the terrorist (Condition 1) was rated the more negatively than the son with only a genetic connection (Condition 3) as well as in comparison to the control (Condition 5). In addition, the son with only a genetic connection (Condition 3) was perceived significantly more negatively than the control target (Condition 5). Thus, merely sharing genes with a wrongdoer is enough to elicit tainting.

Further Investigation into General Negativity in the Absence of Any Explicit Responsibility

As in Experiments 1 and 2, it was of theoretical interest to test for evidence of tainting (i.e., general negativity) even when responsibility ratings were at zero. Using the approach taken in my first two studies, results again revealed a significant effect of experiment condition, $F(2, 163) = 5.639$, $p = .004$, $\eta_p^2 = .07$. The pattern of means corresponding to this analysis is shown in Figure 9.

I next conducted follow up analyses involving each of the 'son' conditions (Conditions 1 and 3) compared to control (Condition 5). The contrast of Condition 1 (Raised by terrorist/genetically related) versus Condition 5 (Control- without terrorist-related information) again yielded a significant result, $F(1, 114) = 11.781$, $p = .001$, Cohen's $d = .75$. However, the contrast of Condition 3 (Adopted by another family/ genetic link to terrorist) versus Condition 5 (Control- without terrorist-related information) was not significant, $F(1, 133) = 2.486$, $p = .117$, Cohen's $d = .28$.

Thus, as in Experiments 1 and 2, I found significant evidence of tainting, even among participants who had, themselves, explicitly disavowed the son's responsibility for any of the actions of his father. However, the tainting effect in question emerged when there was a genetic

and social link between the son and his father, but it did not emerge when the son was adopted by another family.

Discussion

Experiment 3 was designed to (a) generate insight into the process level of judgments made in within-family tainting scenarios and (b) replicate the series of critical findings obtained in Experiments 1 and 2. As for my first goal, I used a manipulation of cognitive load in the service of understanding the role of automatic versus controlled processes in my paradigm. However, none of the analyses revealed any effect of this manipulation. As in the case of all null effects, it is difficult to make any definitive conclusions about the absence of this kind of effect. For example, it is *possible* that all of the key findings obtained in my paradigm reflect relatively automatic processes, i.e., those that do not demand a great deal of cognitive resources. In other words, if all of these processes use very little resources to begin with, then a manipulation of cognitive load would presumably have little effect. However, it is also possible that the cognitive manipulation was simply ineffective (e.g., was not strong enough). I will consider these issues in more detail in the General Discussion section.

Setting aside the null effects of the cognitive load manipulation, the results from Experiment 3 were valuable in their own right, as they replicated the findings from my first two studies. This was true in terms of several different types of analyses involving explicit responsibility as well as tainting (cf. Figures 7-9).

GENERAL DISCUSSION

The present set of studies generated several insights regarding the processes underlying inter-generational tainting effects. As such, the present research offers a substantive contribution to the extant literature, specifically work that has taken an experimental approach to such tainting

processes (Govern & Greco, 2002; Uhlmann, Zhu, Pizarro, & Bloom, 2012; Peak et al., 2016). One of the major findings from the present studies concerned a dissociation between explicit ratings of personal responsibility (i.e., assignment of blame to the son) and more general feelings of negativity. Even though participants generally assigned rather low levels of blame to the son, all three of my experiments revealed substantial evidence of tainting. Indeed, significant evidence for such tainting was found, even among participants who repeatedly gave the lowest possible rating of responsibility to the son.

My work also addressed some important issues as they pertain to theory and research on essentialism (see also ahead for further elaboration). Generally speaking, an essentialism framework suggests that merely sharing genes with a terrorist would be enough to elicit a great deal of tainting. However, my results were *not* particularly supportive of this idea. More concretely, note that my design enabled me to track the contribution of "nature" (i.e., the presence versus absence of a genetic connection with the father) as well as "nurture" (i.e., whether the father raised the son or not). Generally speaking, the latter was much more important than the former. That is, the presence of tainting depended on whether the son was raised by the father—nurture—as opposed to whether there was a genetic link or not. These effects proved to be *extremely* robust. In particular, I found a nearly identical pattern across all three experiments.

In addition to testing for moderation of within-family tainting by individual differences, Experiment 3 aimed to provide insight into the role of automatic versus controlled processes in my paradigm. In previous work, load manipulations have been found to hinder deliberative processing and promote heuristic-based processing (Biernat, Kobrynowicz, & Weber, 2003). The null effects obtained in Experiment 3 are open to at least two interpretations. On the one hand, this could indicate that all of the judgments made by participants in my paradigm were governed

by relatively automatic processes. However, it is also possible that my cognitive load manipulation did not actually work. Unfortunately, there is no easy "manipulation check" that can definitively prove whether a given cognitive load manipulation was successful or not. For example, if a participant correctly recalled the character string in the memory probe, this *could* mean that the participant was successfully "loaded up" by holding this information in working memory. However, it could also mean, simply, that the cognitive load task was too easy. It is also possible that these kinds of manipulations are best suited for completion in the lab (instead of an online setting).

These and other issues related to cognitive load manipulations have been considered in depth by cognitive researchers (e.g., Pass, Tuovinen, Tabbers, & Van Gernven, 2003; Berggren, Hutton, & Derakshan, 2011). One important concern is the researcher's ability to determine *mental effort* from *performance* on a recall task. That is to say, if a person is unable to recall all of the characters, it is unclear whether this means (1) the manipulation was too much to hold in short term memory or (2) they were not motivated to carefully attend to the task. Thus, future work would gain leverage in better understanding the automaticity of responses by employing alternative manipulations (perhaps related to mental effort instead of performance) in order to better determine automaticity of judgments.

Relation of my Work to Research and Theory on Essentialism

Research and theory related to essentialism has been examined in a variety of subdisciplines within the social sciences (e.g., child development, anthropology, intergroup relations, social psychology). Although this literature is too large to consider in any depth here, it is useful to offer some additional discussion of the complexity of this area and its relation to the present research.

Broadly speaking, the concept of *essentialism* proposes that there is a (perceived) "inherent property" shared by the members of a given category, such as race (Williams, 2001; Chao, Hong, & Chiu, 2013), gender (Meyer & Gelman, 2016), culture (Ngo, 2013), and family (Uhlmann et al., 2012). Of particular relevance to current concerns, Uhlmann et al. (2012)'s "common-sense essentialism" framework proposed that individuals are perceived to be tied by essential bonds of blood kinship. That is, the contamination of one person's actions can spread from one person to another. The present within-family tainting paradigm examines that extent to which sons are tainted by the misdeeds of their fathers. The common-sense framework suggests that the degree of tainting should be at least somewhat connected to the degree of genetic relatedness. However, as noted earlier, this is not what Govern and Greco (2002) or the present work found. Instead, on the average, participants in this set of studies did not take an essentialist approach. A target who was *raised by* the perpetrator—but not genetically related to him—were judged significantly more negatively than the target with *only* a genetic relationship. In this regard, my findings appear to be more consistent with the findings reported by Govern and Greco (2002) than with Uhlmann et al. (2012).

It is important to note, however, that the conclusions reached about the tainting process—including any inferences made about essentialism—may depend strongly on the domain in which that process is studied. In other words, even if a given research paradigm finds evidence for essentialism, one should not automatically assume that such evidence will also be found in an entirely different paradigm.

For example, some feminist scholars have suggested that people generally think about gender (i.e., the difference between men and women) in essentialist ways. That is, they consider that all men have a certain "essence" (beyond their objectively verifiable biological differences)

that makes them foundationally different from women, and vice versa (Grosz, 1995). The truth value of this assertion—that people perceive gender in an essentialist way—represents an issue that is entirely distinct from the issues being probed in my own research. Stated another way, the fact that I did not find much evidence for essentialism in this particular paradigm obviously does not "falsify" or negate conclusions that might have been reached about essentialism in a different paradigm. In short, essentialism represents a complex idea that can be investigated in many different types of scientific paradigms. Evidence that is generated for—or against—essentialism in one paradigm should not necessarily generalize to any other paradigm, without considering the ways that those paradigms are similar or different.

Caveats and Directions for Future Research

As with any other programmatic line of work, the present set of studies contain some limitations and highlight the need for future research. As noted in the context of discussing the results of Experiment 3, future work is clearly needed to further understand the role of automatic versus controlled processes in tainting. Several other avenues for future work can be identified as well. Perhaps most important is the fact that familial connections obviously go far beyond father/son relationships. Other kinds of familial relationships (e.g., father/daughter, siblings, cousins) can and should be studied in order to understand tainting processes in the context of other types of family connections. In addition, nuances of the relationships may play a key role in predicting tainting. For example, whether or not the social connection occurred later in life (e.g., adopted at the age of nine instead of at birth) could impact judgments of the target.

Also important to study are the boundary conditions related to transgressions/crime committed by the wrongdoer. The present paradigm involved a certain type of misdeed (i.e., terrorism) that is unambiguously negative. Nevertheless, transgressions come in all shapes and

sizes, and terrorism obviously represents only one example of a large universe of other types of transgressions. Future research is needed in order to understand how the tainting process, itself, may be moderated by the type of transgression at hand. For example, evidence of significant within-family tainting might only emerge if a crime was premeditated and involved physical harm to others (i.e., murder, terrorism) compared to other types of transgressions.

Lastly, the extent to which tainting judgments can have real-life consequences represents an important consideration that surely deserves greater attention. An interdisciplinary approach to familial tainting would shed light, for example, on the potential real-world consequences for people who are related to well-known criminals, but who have not committed any crimes themselves. Collaborative research with public policy experts and criminal justice researchers would be helpful in the pursuit of these goals.

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FOOTNOTES

[1] In Experiment 1, an additional principal components analyses of social distancing and trait items was also completed. Here I used the *residual* correlation matrix (removing the effect of the manipulation). This analyses confirmed a single component (40% of the variance was explained by the first factor). 19 of the 23 items loaded higher than .5. Low loading items were similar to those loading weakly in the factor analyses of the standard dependent variable items (i.e., not residuals). Thus, my generation of factor scores described in Method sections are appropriate.

[2] Experiment 1 had a total of 160 people complete the survey. There were four targets to which participants would be randomly assigned. Thus, each cell included 40 participants. However, two participants were not US-citizens and one participant failed the attention check. Thus, these individuals were excluded from analyses, and the final sample size was 157.

[3] To investigate the normality of the dependent variable composites, I completed a series of skewness and kurtosis analyses for Experiments 1-3. Experiment 1, responsibility ratings had a skewness of .902 (*SE* = .223) and kurtosis of -.239 (*SE* = .442). General negativity showed skewness of -.264 (*SE* = .194) and kurtosis of -.954 (*SE* = .385). In Experiment 2, responsibility ratings had a skewness of 1.73 (*SE* = .194) and kurtosis of 1.772 (*SE* = .386). General negativity showed skewness of .591 (*SE* = .172) and kurtosis of -.032 (*SE* = .342). In Experiment 3, responsibility ratings had a skewness of 2.22 (*SE* = .154) and kurtosis of -4.05 (*SE* = .307). General negativity showed skewness of .591 (*SE* = .154) and kurtosis of -.160 (*SE* = .307). In sum, the distributions of responsibility ratings across the three experiments were moderately to highly skewed (.90 – 2.22). Distributions of negativity across the three experiments ranged from approximately symmetric to moderately skewed (-.26 – .59).

[4] Based on evidence from Experiments 1 and 2, three variations of the target description were chosen. In particular, I wanted to contrast control (Condition 5) with the traditional raised by/genetically related son (Condition 1) and the son with only genetic connections (Condition 3). Conditions 1 and 3 were found to be significantly different from one another in terms of tainting and could illustrate how negativity varies by connection to a terrorist. The control condition used for Experiment 3 was also based on knowledge gained in Experiment 2. Thus, I used the control condition that was shared between both Experiments 1 and 2 that (a) did not include information about the terrorist attacks and (b) induced very low levels of negativity. Thus, using the same labels as Experiment 2, Conditions 1, 3, and 5 were included in this final investigation.

Table 1: Individual Difference Variables Collected in Experiments 1-3

	1	**2**	**3**
Need for Cognition (NFC)	✓	✓	✓
Social Dominance Orientation (SDO)	✓	✓	✓
Right-Wing Authoritarianism (RWA)	✓	✓	✓
Interdependence	✓	✓	✓
Honor Ideology (HIM)	✓	✓	
Collectivism	✓	✓	
Belief in Social Determinism (BSD)			✓
Belief in Genetic Determinism (BGD)			✓

Note. ✓ indicates that the variable was included in the experiment.

Table 2: Factor Loadings of First Unrotated Factor (General Negativity)— Experiment 1

	Factor
Item	**1**
I would feel angry.	.862
It would bother me bother me.	.849
Dangerous	.848
This would be upsetting to me.	.846
I would be reluctant to shake his hand.	.842
I would feel uneasy.	.830
Friendly	-.807
How positively would you feel towards him?	-.807
Unfriendly	.805
How negatively would you feel towards him?	.799
Honest	-.793
Immoral	.790
Dishonest	.770
I would feel uncomfortable.	.757
Moral	-.754
To what extent do you think Younes should be placed on the “No Fly” list?	.744
I would refuse to talk.	.733
I would feel calm and collected.	-.722
Should Younes be able to travel to the United States?	-.693
I would lose composure.	.674
Hardworking	-.593
Smart	-.589
Unintelligent	.536

Table 3: Effects of Target Type on Judgments — Experiment 1

	Condition 1 (Raised by terrorist/ genetically related)	Condition 2 (Adopted by terrorist/ no genetic relation)	Condition 3 (Adopted by another family/ genetic link to terrorist)	Condition 4 (Control)
Judgment				
Responsibility	20.04(23.60)	29.05(26.45)	16.97(22.53)	-
General Negativity	.55(.70)	.57(.63)	.20(.69)	-1.33(.46)

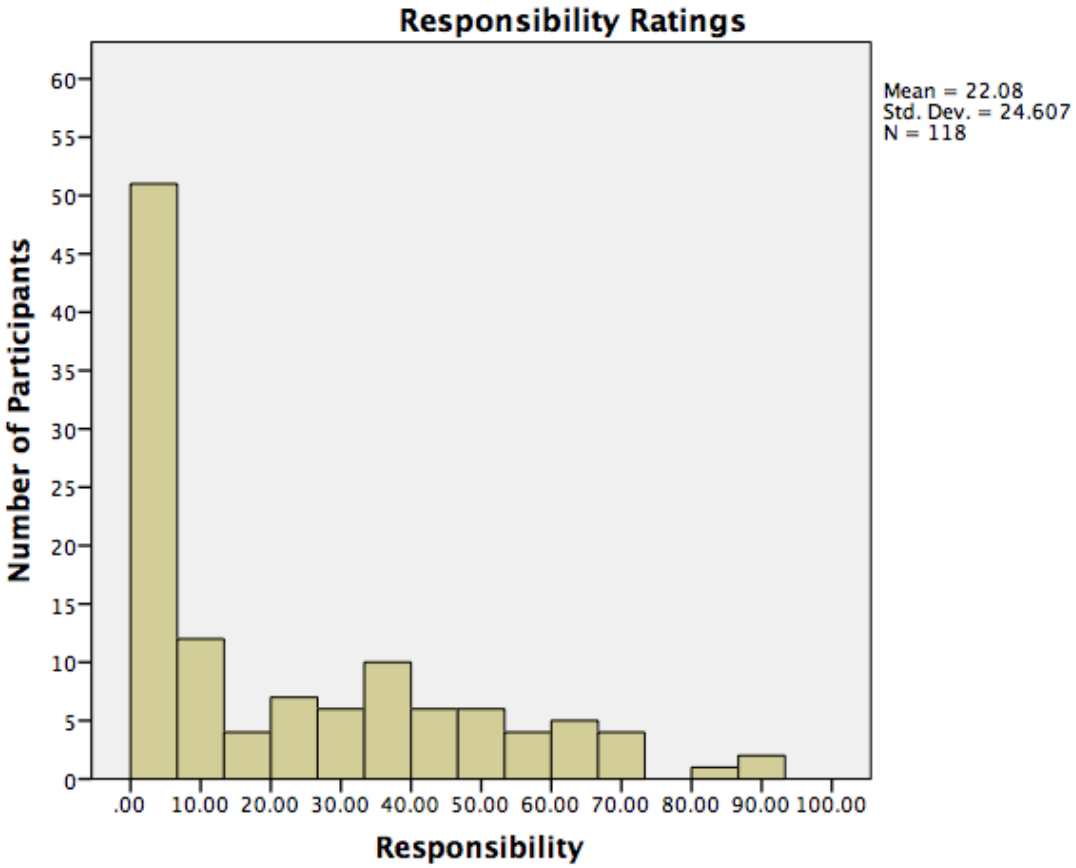
Table 4: Effects of Target Type on Judgments— Experiment 2

	Condition 1 (Raised by terrorist/ genetically related)	Condition 2 (Adopted by terrorist/ no genetic relation)	Condition 3 (Adopted by another family/ genetic link to terrorist)	Condition 4 (Control-terror information present)	Condition 5 (Control-terror information absent)
Judgment					
Responsibility	17.38(29.57)	32.38(36.88)	16.82(24.01)	-	-
General Negativity	.39(1.01)	.72(.99)	.02(.91)	-.40(.75)	-.67(.67)

Table 5: Effects of Target Type on Judgments— Experiment 3

	Condition 1 (Raised by terrorist/ genetically related)	Condition 3 (Adopted by another family/ genetic link to terrorist)	Condition 5 (Control- terror information absent)
Judgment			
Responsibility	20.19(27.86)	14.36(26.27)	-
General Negativity	.51(.88)	.06(1.05)	-.56(.75)

Figure 1: Frequency of Responsibility Ratings – Experiment 1



Note. 27.1% of Ps in son conditions indicated responsibility at 0

Figure 2: Mean General Negativity as a Function of Experimental Condition — Experiment 1

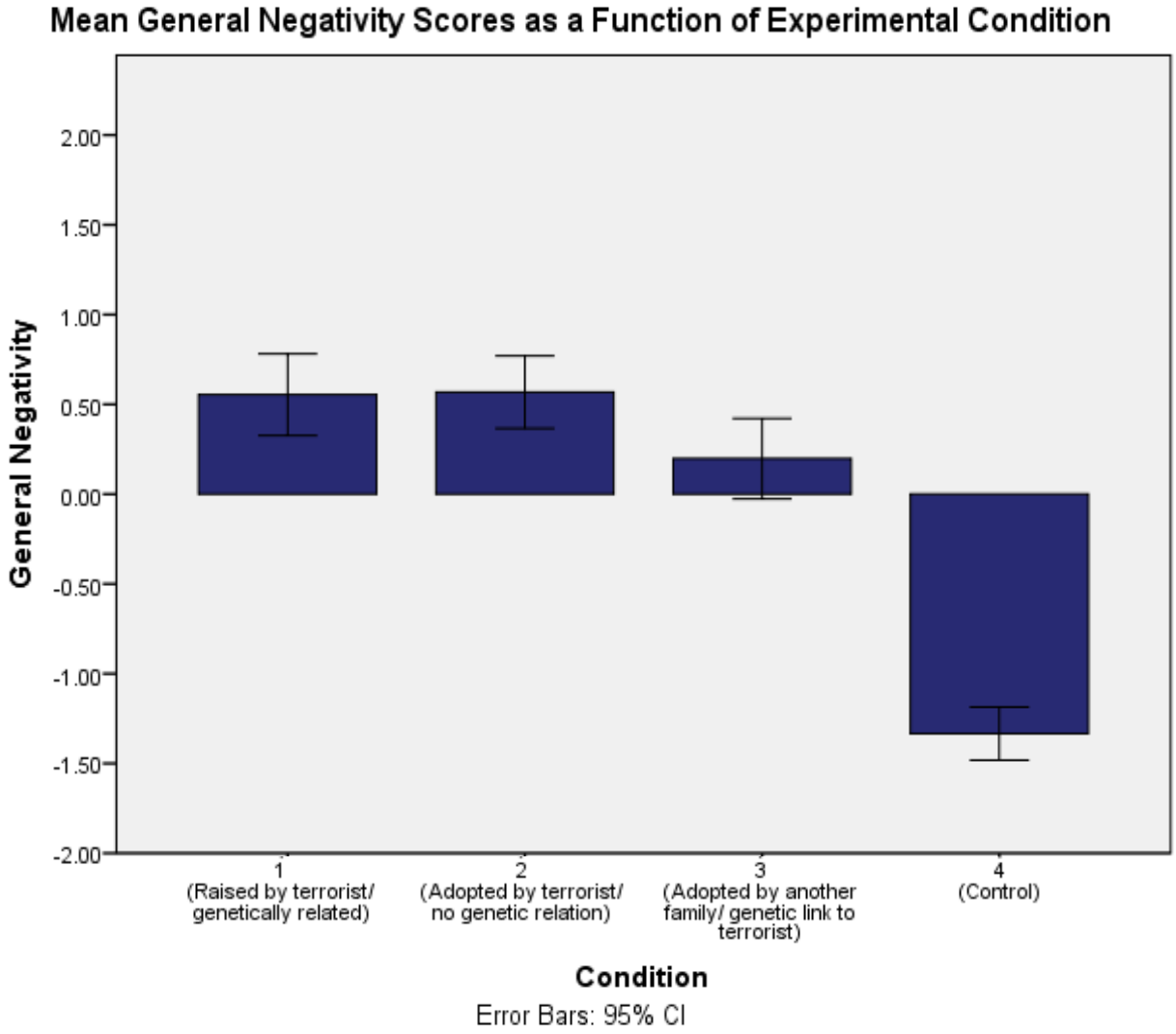


Figure 3: Mean General Negativity as a Function of Condition – "Zero Responsibility" Participants (see text)—Experiment 1

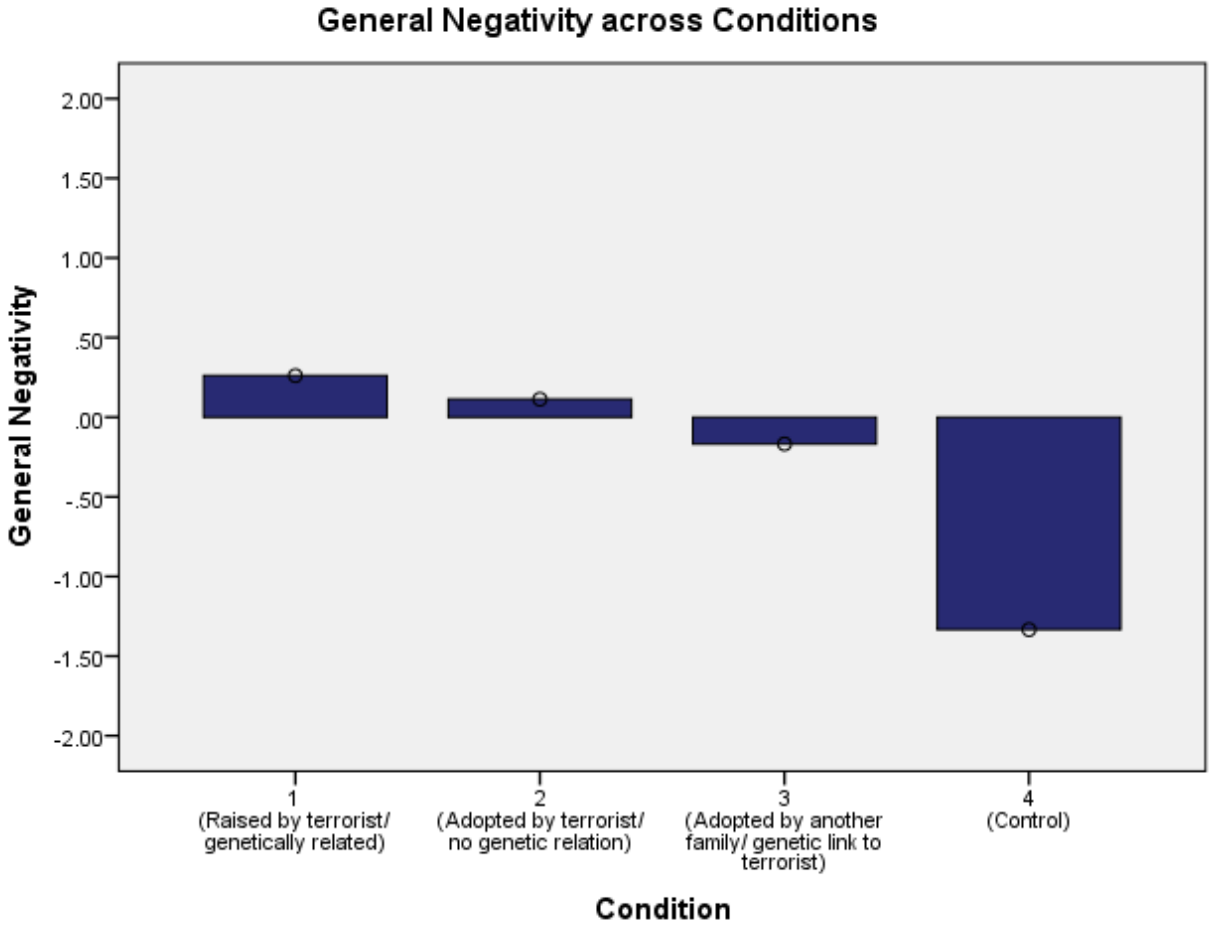
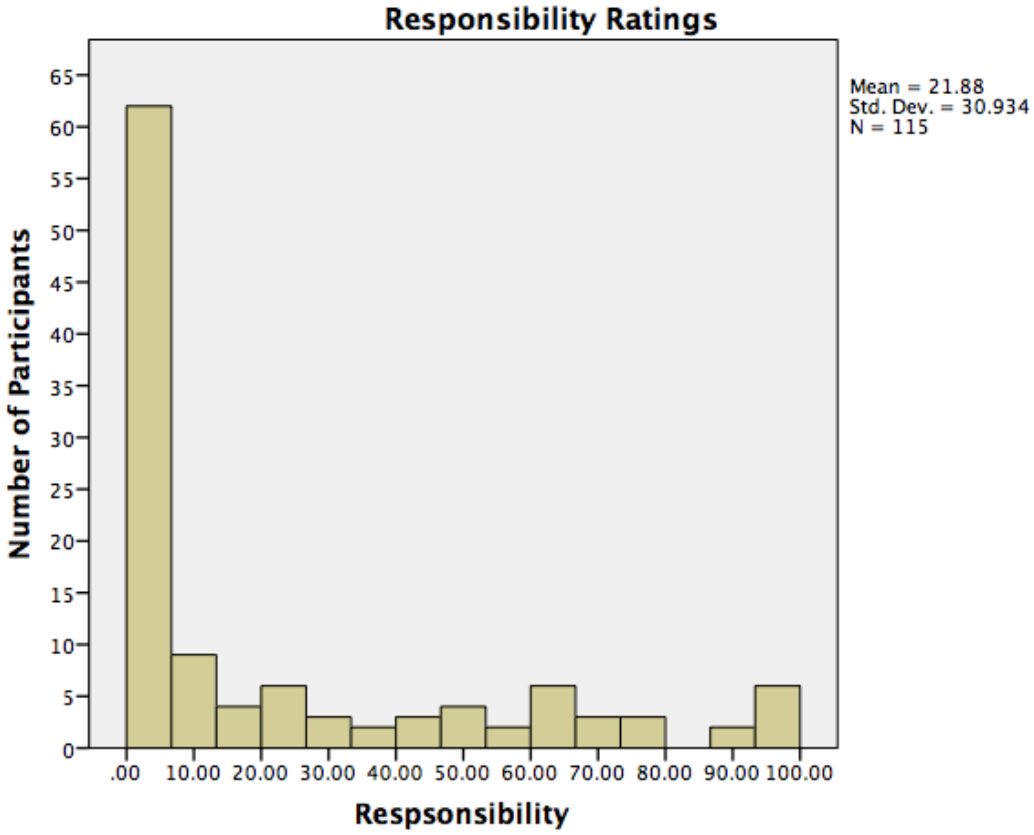


Figure 4: Frequency of Responsibility Ratings – Experiment 2



Note. 44.3% of Ps in son conditions indicated responsibility at 0.

Figure 5: Mean General Negativity as a Function of Condition — Experiment 2

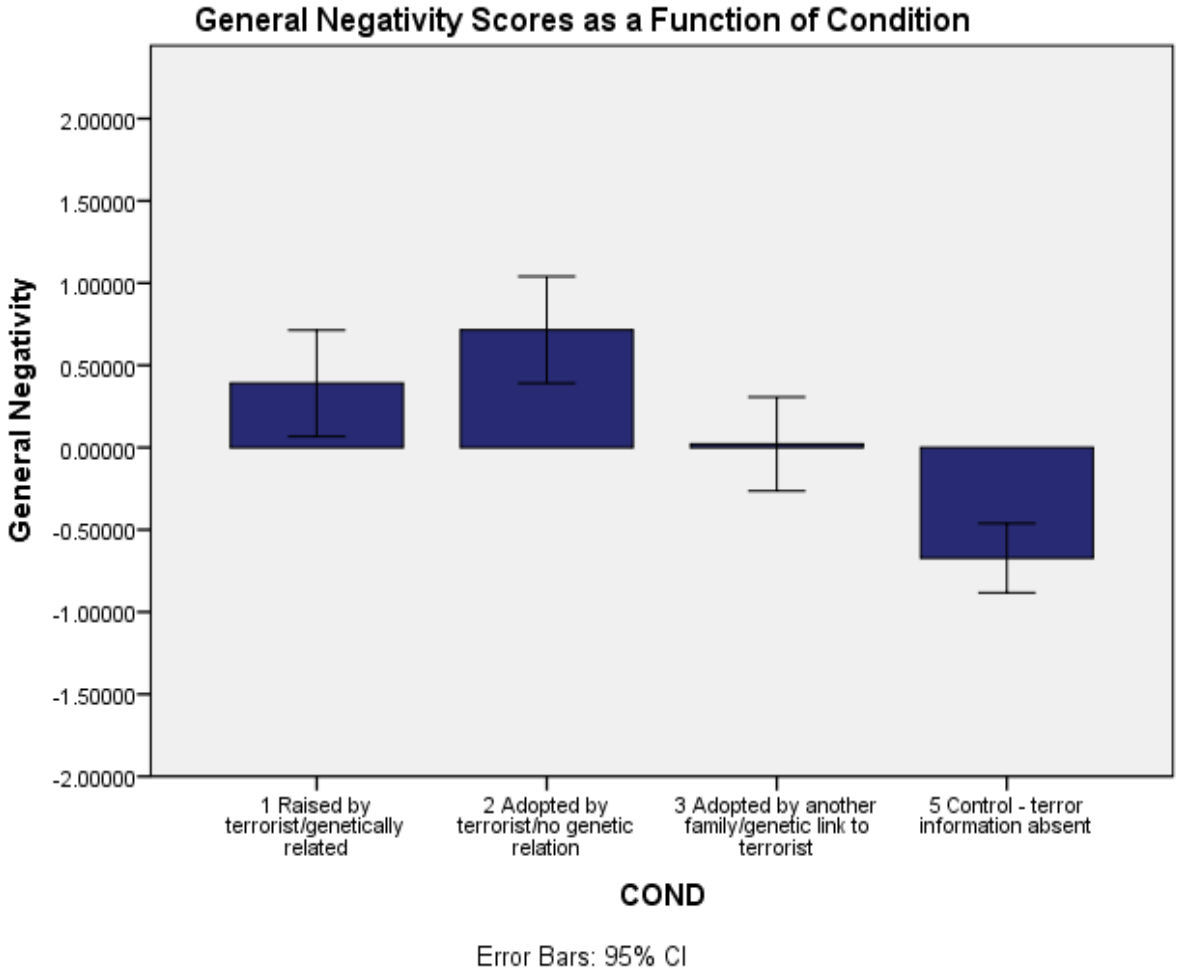


Figure 6: Mean General Negativity as a Function of Condition – "Zero Responsibility" Participants (see text)—Experiment 2

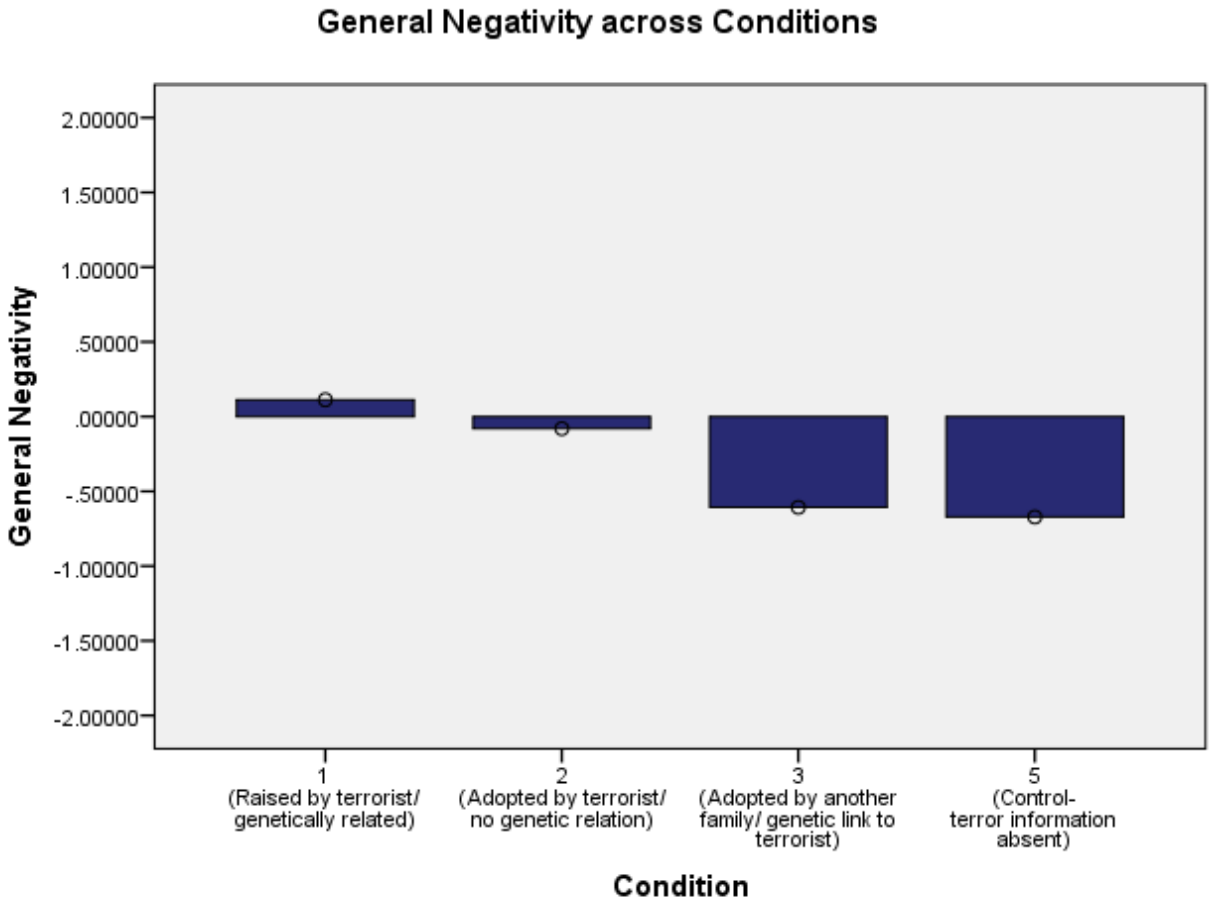
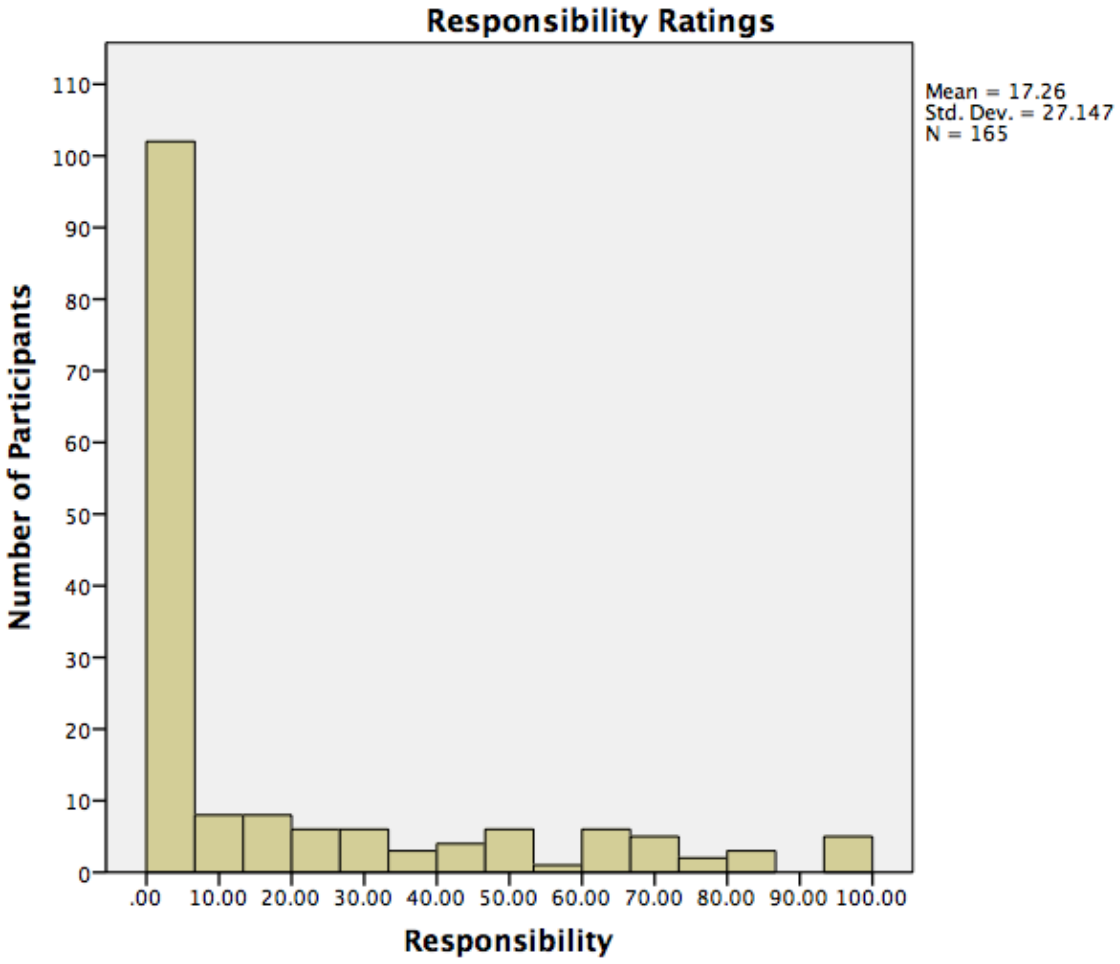
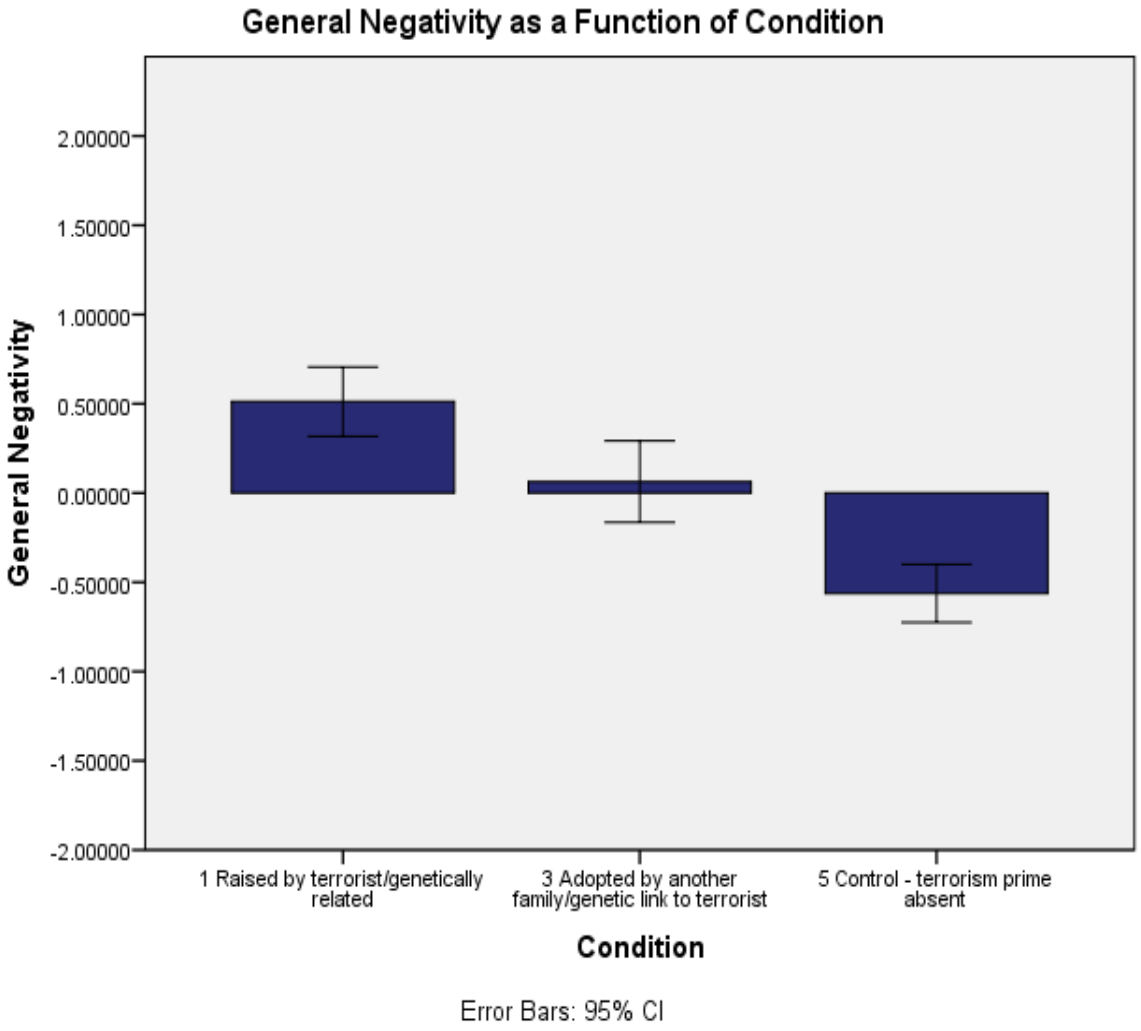


Figure 7: Frequency of Responsibility Ratings – Experiment 3



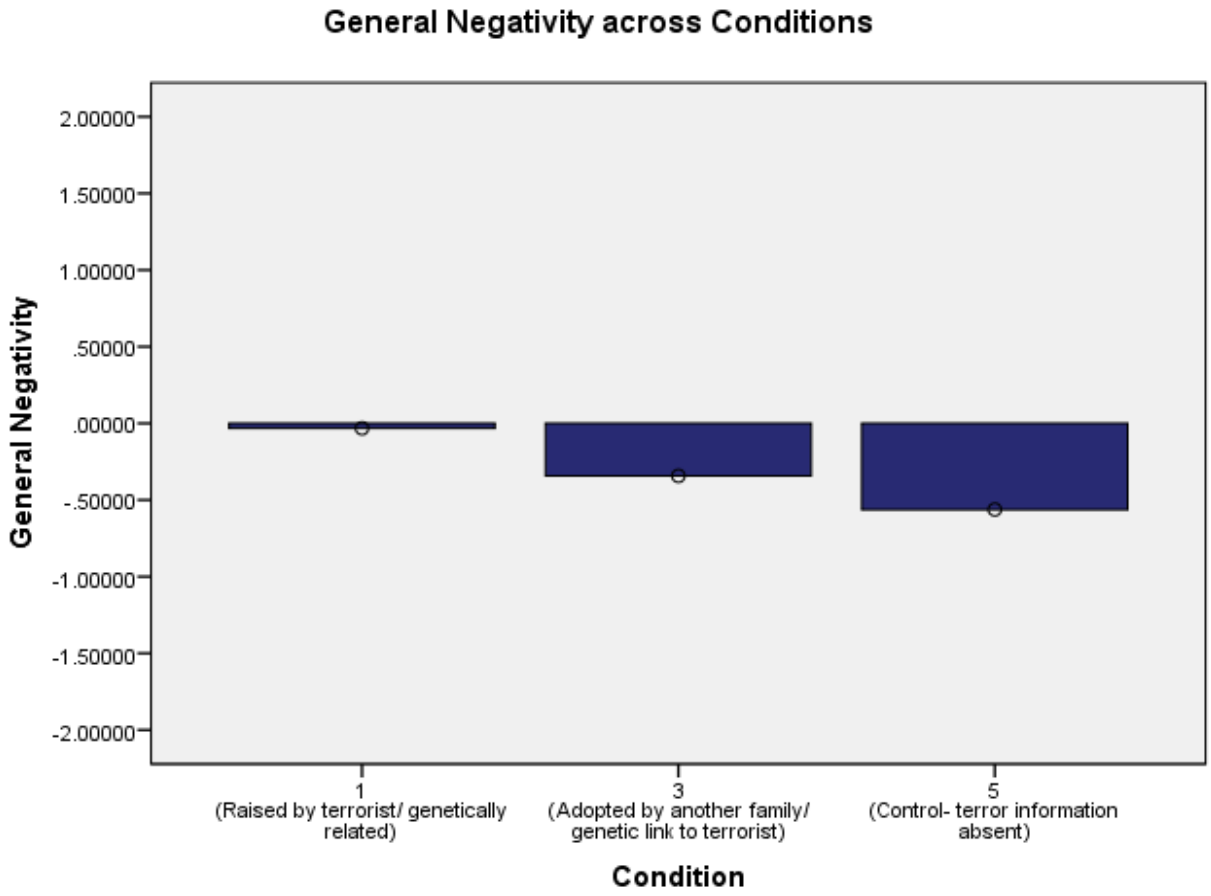
Note. 31.7% of Ps in son conditions had responsibility average of 0.

Figure 8: Mean General Negativity as a Function of Condition — Experiment 3



Note. Means collapsed over cognitive load.

Figure 9: Mean General Negativity as a Function of Condition – "Zero Responsibility" Participants (see text)—Experiment 3



Appendix A: Terrorism Reminder and Terrorist Description

1) Instructions

Historical Events and Social Judgments: The Terrorist Attacks in Paris France (November 2015)

Our research is concerned with the way that people process information about historical events. In this particular case, we are interested in your judgments of the terrorist attacks that occurred in Paris during November of 2015.

We will first be presenting you with some information about this event. Please attend to this information carefully, as we will be asking you to remember some of the details, and you will also be making some judgments about this information. In other words, please do not "speed read" through this information; please consider the information in a thoughtful way, as this will prepare you to answer the questions we will pose later.

2) Overview of Attack

Background graphic 1: Overview of Attack

In the image below, we summarize the main sequence of events that occurred on November 13, 2015. Please read this information carefully, and familiarize yourself with the main events that occurred. Please try to remember the main details, such as the location in which the highest number of deaths occurred.

3) Terrorist Description

Background graphic 2:
Persons believed to be responsible for the attacks

In 2015, investigators identified Abdelhamid Abaaoud as the suspected mastermind of the Paris terror attacks.

He was born in Belgium and was of Moroccan decent. After leaving Belgium, he spent years living in Syria.

While in Syria, Abdelhamid, appeared frequently in ISIS propaganda where he was pictured heavily armed and advocating violence. In one video, he is seen driving a pick-up vehicle dragging the corpses of murdered opponents.

Appendix B: Target Descriptions— Experiment 1

Condition 1 (Raised by terrorist/genetically related)

Background graphic 3:
Continuing Investigations

Abdelhamid Abaaoud (the main mastermind of the Paris attacks) has a son, Younes Abaaoud.

Authorities are currently seeking the whereabouts of Younes and, if apprehended, will be brought in for further questioning.

Younes Abaaoud

Condition 2 (Adopted by terrorist/no genetic relation)

Background graphic 3:
Continuing Investigations

Abdelhamid Abaaoud (the main mastermind of the Paris attacks) adopted a son, who he raised from birth (Younes Abaaoud).

Authorities are currently seeking the whereabouts of Younes and, if apprehended, will be brought in for further questioning.

Younes Abaaoud

Condition 3 (Adopted by another family/genetic link to terrorist)

Background graphic 3:
Continuing Investigations

Abdelhamid Abaaoud (the main mastermind of the Paris attacks) has a son, who was adopted and raised by a family in a village far away. This boy's name is Younes Taheri.

Authorities are currently seeking the whereabouts of Younes and, if apprehended, will be brought in for further questioning.

Younes Taheri

Condition 4 (Control)

Younes Taheri is a twelve year old boy who lives in Syria, near the northern border to Turkey. During the week, he attends school, where he is learning Arabic, science, and math. He has a younger brother who is nine and attends school with him, and a sister who is four. On the weekends, he likes to spend time with family, and play outside with his friends. His best friend is eleven years old and lives next door.

Younes Taheri

Appendix C: Demographic Variable Descriptive Statistics – Experiment 1

Age

	N	Range	*M*	*SD*
Age	157	55	36.32	11.618

Gender

	N	%
Male	45	28.7
Female	109	69.4
Trans*	2	1.3
Prefer not to answer	1	.6
Total	157	100.0

Education

	N	%
High school	11	7
Some college/Associates degree	62	39.5
Bachelors degree	43	27.4
Some postgraduate study	14	8.9
Other	1	.6
Masters degree	21	13.4
Doctorate/Medical degree	5	3.2
Total	157	100

Ethnicity

	N	%
White	127	80.9
Black	14	8.9
Hispanic	7	4.5
Asian	6	3.8
American Indian/Alaskan/Hawaiian	1	.6
Other	2	1.3
Total	157	100

Income

	N	%
Less than $1,000	3	1.9
$1,000 to $9,999	6	3.8
$10,000 to $19,999	9	5.7
$20,000 to $29,999	19	12.1
$30,000 to $49,999	39	24.8
$50,000 to $74,999	35	22.3
$75,000 to $99,999	24	15.3
$100,000 to $149,999	18	11.5
$150,000 to $199,999	2	1.3
$200,000 to $499,999	2	1.3
Total	157	100

Appendix D: Target Descriptions— Experiment 2

Condition 1 (Raised by terrorist/genetically related)

Abelhamid Abaaoud—the mastermind of the Paris attacks—has a son, named Younes Abaaoud. Younes is twelve years old and lives in Syria, near the northern border of Turkey. During the week, he attends school, where he is learning Arabic, science, and math. He has a younger brother who is nine and attends school with him, and a sister who is four. On the weekends, he likes to spend time with family, and play outside with his friends. His best friend is eleven years old and lives next door.

Younes Abaaoud

Condition 2 (Adopted by terrorist/no genetic relation)

Abelhamid Abaaoud—the mastermind of the Paris attacks—adopted a son who he raised from birth; the boy's name is Younes Abaaoud.
Younes is twelve years old and lives in Syria, near the northern border of Turkey . During the week, he attends school, where he is learning Arabic, science, and math. He has a younger brother who is nine and attends school with him, and a sister who is four. On the weekends, he likes to spend time with family, and play outside with his friends. His best friend is eleven years old and lives next door.

Younes Abaaoud

Condition 3 (Adopted by another family/genetic link to terrorist)

Abelhamid Abaaoud—the mastermind of the Paris attacks—had a son who was adopted (shortly after birth) by a family who lives in a distant village; the boy's name is Younes Taheri.
Younes is twelve years old and lives in Syria, near the northern border of Turkey. During the week, he attends school, where he is learning Arabic, science, and math. He has a younger brother who is nine and attends school with him, and a sister who is four. On the weekends, he likes to spend time with family, and play outside with his friends. His best friend is eleven years old and lives next door.

Younes Taheri

Conditions 4 & 5

Younes Taheri is a twelve year old boy and lives in Syria, near the northern border of Turkey. During the week, he attends school, where he is learning Arabic, science, and math. He has a younger brother who is nine and attends school with him, and a sister who is four. On the weekends, he likes to spend time with family, and play outside with his friends. His best friend is eleven years old and lives next door.

Younes Taheri

Appendix E: Target Descriptions— Experiment 3

Condition 1 (Raised by terrorist/genetically related)

Abelhamid Abaaoud—the mastermind of the Paris attacks—has a son, named Younes Abaaoud. Younes is twelve years old and lives in Syria, near the northern border of Turkey. During the week, he attends school, where he is learning Arabic, science, and math. He has a younger brother who is nine and attends school with him, and a sister who is four. On the weekends, he likes to spend time with family, and play outside with his friends. His best friend is eleven years old and lives next door.

Younes Abaaoud

Condition 3 (Adopted by another family/genetic link to terrorist)

Abelhamid Abaaoud—the mastermind of the Paris attacks—had a son who was adopted (shortly after birth) by a family who lives in a distant village; the boy's name is Younes Taheri. Younes is twelve years old and lives in Syria, near the northern border of Turkey. During the week, he attends school, where he is learning Arabic, science, and math. He has a younger brother who is nine and attends school with him, and a sister who is four. On the weekends, he likes to spend time with family, and play outside with his friends. His best friend is eleven years old and lives next door.

Younes Taheri

Condition 5 (Control)

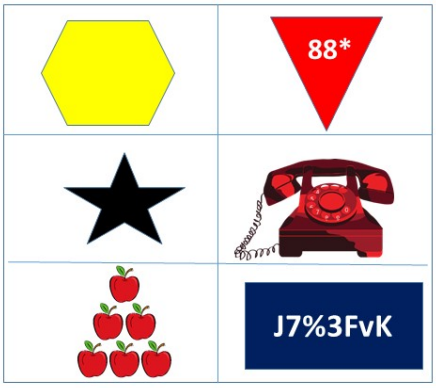
Younes Taheri is a twelve year old boy and lives in Syria, near the northern border of Turkey. During the week, he attends school, where he is learning Arabic, science, and math. He has a younger brother who is nine and attends school with him, and a sister who is four. On the weekends, he likes to spend time with family, and play outside with his friends. His best friend is eleven years old and lives next door.

Younes Taheri

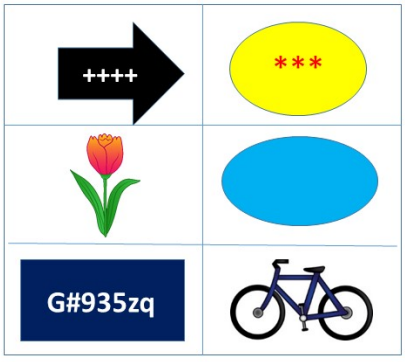
Appendix F: Cognitive Load Images – Experiment 3

High Cognitive Load

Please take as long as you need to memorize the above image. Once you have done so, click next to continue.



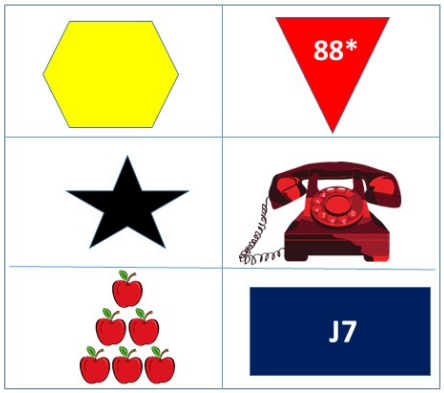
Please take as long as you need to memorize the above image. Once you have done so, click next to continue.



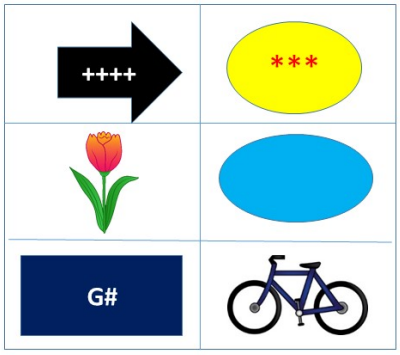
Please take as long as you need to memorize the above image. Once you have done so, click next to continue.

Low Cognitive Load

Please take as long as you need to memorize the above image. Once you have done so, click next to continue.



Please take as long as you need to memorize the above image. Once you have done so, click next to continue.



Please take as long as you need to memorize the above image. Once you have done so, click next to continue.

Appendix G: Demographic Variable Descriptive Statistics – Experiment 3

Age

	N	Range	*M*	*SD*
Age	249	67	34.11	11.713

Gender

	Frequency	%
Male	77	30.9
Female	170	68.3
Trans*	0	0
Prefer not to answer	2	.8
Total	249	100.0

Ethnicity

	N	%
White	195	78.3
Black	14	5.6
Hispanic	22	8.8
Asian	14	5.6
American Indian/Alaskan/Hawaiian	1	.4
Other	2	.8
Prefer not to answer	1	.4
Total	249	100.0

Education

	N	%
Some high school	2	.8
High school	20	8.0
Some college/Associates degree	98	39.4
Bachelors degree	78	31.3
Some postgraduate study	14	5.6
other	1	.4
Masters degree	30	12.0
Doctorate/Medical degree	6	2.4
Total	249	100

Income

	N	%
Less than $1,000	5	2.0
$1,000 to $9,999	7	2.8
$10,000 to $19,999	16	6.4
$20,000 to $29,999	27	10.8
$30,000 to $49,999	54	21.7
$50,000 to $74,999	66	26.5
$75,000 to $99,999	33	13.3
$100,000 to $149,999	26	10.4
$150,000 to $199,999	6	2.4
$200,000 to $499,999	1	.4
$500,000 or more	1	.4
prefer not to answer	7	2.8
Total	249	100

APPENDIX H: INDIVIDUAL DIFFERENCE ANALYSES NOT REPORTED IN THE MAIN TEXT

Experiment 1

Partial correlations between DVs and individual differences, controlling for condition.

	Honor	Collectivism	Interdependence	RWA	SDO	NFC
Responsibility	.216*	-.099	-.023	.327***	.342***	-.055
Negativity	.235*	.121	.261**	.330***	.328***	-.217*

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

Experiment 2

Partial correlations between DVs and individual differences, controlling for condition.

	Honor	Collectivism	Interdependence	RWA	SDO	NFC
Responsibility	.296**	.025	-.133	.228*	.340***	-.127
Negativity	.300**	-.038	-.074	.332***	.354***	-.102

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

Experiment 3

Partial correlations between DVs and individual differences, controlling for condition.

	BSD	BGD	Interdependence	RWA	SDO	NFC
Responsibility	.047	.191**	-.081	.222***	.276***	-.044
Negativity	.171**	.276***	-.167**	.361***	.460***	-.222***

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