

**Venting: Combatting the Globalizing Influence of Specific Judgments**

Senior Project in Cognitive Science

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**Abstract**

People use general judgments to express specific opinions. When given the opportunity to express their specific opinion, however, they are able to give more honest, rational evaluations when giving their general judgment. We call this intermediary process of expressing a narrow, polar opinion to moderate an overarching, general opinion, *venting*. In the following studies, we examine the relationship between specific and global judgments and the mediating effects of venting. The results of these studies are mixed—we found relatively strong evidence for venting in the individual to population paradigm in experiment one but null results in the individual to population paradigm in experiment two and the factor to global decision paradigm in experiment three.

*Keywords: venting, representativeness heuristic, character judgments, decision-making, rationality.*

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## **1. Introduction**

On June 23<sup>rd</sup>, 2016, the general public of the United Kingdom voted on a referendum to leave the European Union, a decision commonly referred to as Brexit. Brexit voters who regretted their votes after winning the election became the inspiration for this study as their seemingly irrational thought and behavior pattern shed light upon a potential decision-making paradigm. To explain in detail, before and immediately following the referendum decision, the British Election Study Team conducted polls across Scotland, Wales, and England to gain insight on public opinions (Fieldhouse et al., 2017). For the purpose of this study, the two most interesting questions asked were the ex-ante question “How likely do you think it is that the UK will vote to leave the EU?” and the ex-post question “If you voted in the EU referendum on 23<sup>rd</sup> June 2016, do you have any regrets about how you voted?”. About 3% of voters responded “Yes”, to the second question, saying that they regret the way they voted after knowing the result.

What may be surprising is that the vast majority of these regretful voters were those who voted for the winning verdict, to leave. 6% of those who voted to leave the European Union were regretful and while 6% may seem like a small percentage, it represents millions of people. Further, factoring in the ex-ante question of the likelihood that the United Kingdom *would* leave the European Union, the results are even more interesting. In analyzing data on the percentage of voters that regretted their vote in both Yes (Brexit voters) and No categories as a function of their opinion on the likelihood that the UK will vote to leave the European Union, the less likely that individuals thought it was that Brexit would actually happen, the more the individuals who voted for it regret their vote (Fieldhouse et al., 2017).

So, why is this an interesting and relevant scenario in the context of the research at hand? If this 6% of people who voted to leave the European Union actually *didn't* want to leave the European Union, what did they want? In other words, what were they *really* trying to express with this vote if they didn't think it would end in Brexit? Recent research (Arnorsson & Zoega, 2018) discovered a strong correlation between Brexit voters and fear of immigration and the increase of immigrant populations. For the sake of simplifying this finding to connect with the study at hand, imagine that the individuals in this 6% of voters were actually trying to express that they did not like the open-door immigration policies within the European Union. Now, imagine if, before they voted on the referendum, they were asked the open-ended question: "How do you feel about the European Union's immigration policies?" or even "Is there a specific aspect of the UK's membership to the European Union that bothers you?". Venting about a political position might allow people to vote with a more moderate, rational, and level head. In the same way that we vent to our friends about an excellent (performance-wise), hard-working co-worker who has one consistently bad and irritating habit so that we can evaluate that co-worker in a fair and holistic way. Without this venting process, we might give that same co-worker a negative evaluation, even though overall, their work is exceptional.

This concept is especially interesting in this context, that of individual and global judgments. Judgments like these can be on a factor scale, similar to the examples above, or between an individual and the larger group to which they belong. People in general form extremely strong moral opinions about individuals and their behaviors and, as a factor of one's own narrow knowledge-base, people expand those judgments onto entire associated groups (McGarty et al., 2002). We posit, however, that if a person is given the opportunity to express

their opinion on that specific factor or individual, they will no longer feel the need to judge the entire group in order to express that narrow opinion.

Consider this thought experiment as an example of an individual to group judgment: imagine that you meet an extremely bigoted person from a state you have never been to before. Afterward, you are asked what your opinion is on all of the people that live in that state you might say, “the people there are bigoted!”. Imagine now that you are first asked what your opinion is on that specific person, to which you might naturally respond that they are bigoted, before being asked about the people of that state in general. Having made your point about the individual, you would feel more comfortable and rational saying that all of the people in that state are probably okay and not so harshly good or bad. We believe that the explanation for this thought experiment is that people use general judgments to express specific opinions. When given the opportunity to express their specific opinion, however, they are able to give more honest evaluations when giving their general judgment.

One way to think about this dynamic can be likened to evaluating a dataset. If the vast majority of a dataset follows a distinct trend, the global judgment on that dataset would reflect that trend. If there was one extreme outlier, that outlier is still important to the dataset, it should not be removed or separated from the global evaluation, but it also should not be over-represented as being the signal of the trend. We believe that this effect can happen with individual judgments that in reality, represent outliers or noise, but in subjective judgment can be expressed and felt as signal. The hope for this study is that through the process of venting, we can remove the noise from a judgment in order to see the true signal.

## **2. Literature Review**

There is a diverse background of literature that inspired and now supports the designs and predictions within the present study. First, previous studies have found evidence for a series of effects and heuristics that lead to illogical and sub-conscious judgment construal. The primary purpose for outlining these heuristics is to exemplify the outcome pattern they all share and elucidate why the results for this study are evidence of a different mechanism all-together. Second, when working within the bounds of political and taxation ideologies, one can assume that there is a salient role of personal bias. Ex-ante established biases aside, there is reason to believe that the manipulation in these studies could serve to identify a bias against an individual or a piece of information and as a result, affect the participant's subsequent judgment. We will utilize the evidence from previous studies on bias and stereotyping to explain the role of bias in the noise of our results and why we do not believe it is present in the signal. Last, this paper will analyze previous research on emotion expression (Xiao & Houser, 2005) and response substitution (Gal & Rucker, 2011) as the most similar ideological concepts to the study at hand. This review will outline why these two concepts are supportive of but different from the current work being presented.

### **2.1. Framing and Sequential Judgments**

Previous literature has discovered a variety of ways that one piece of information can affect the evaluation and reporting of subsequent information. Bayesian and normative probability-updating theories have found that statistically identical issues can be approached in vastly different ways (Grether, 1980). Based on how decisions are framed (Tversky and Kahneman, 1986) or the way they are presented, details can be interpreted in divergently. This concept is foundational in understanding other theories that are more relevant to this study and

discussed later in the literature review, including the representativeness heuristic and the halo effect.

When analyzing the way that initial information affects the processing and evaluation of later information, one cannot overlook the research pertaining to the anchoring phenomenon. The concept of anchoring can be broadly explained as the arbitrary influence of prior cues or “anchors” on unrelated valuations (Ariely, Loewenstein, & Prelec, 2003). The theory of anchoring is rooted in information on coherent arbitrariness, or the concept that their valuations, while arbitrary, appear orderly and theoretically sound (Ariely, Loewenstein, & Prelec, 2003). has been found in both logical cases (if you are thinking about the huge weight of an elephant, that might influence your perception of the weight of a dog) and completely arbitrary cases (numerical valuations that are swayed by recalling the numbers in one’s social security number) (Ariely, Loewenstein, & Prelec, 2003).

In the case of this study, the anchoring theory would suggest that one extremely negative example of a person within a group would anchor the global judgment of the group to be more negative overall. It is reasonable to presume that this effect would cause significant movement in mean support ratings. Assuming that this is the case, one way to interpret the venting manipulation is in opposition to this extreme anchoring. However, if anchoring were the primary signal mechanism in this research, there would be a significant increase in support of the tax after reading the negative vignette in the negative, no venting condition in comparison to the baseline, no venting condition in experiment 2 but there was no significant difference between the two figures. Further, one might expect to see the reverse relationship between the positive vignette control condition and the control condition but again, there is no significant difference between the two means.



## 2.2 Underlying Factors within Character Judgments

The Representativeness Heuristic is particularly interesting in the context of the current study because it provides a compelling analysis of the relationship between individual and group judgments. The Representativeness Heuristic was introduced as a rule of thumb used to determine the likelihood of an individual representing or belonging to a certain population or group (Grether, 1992). Tversky and Kahneman (1974) first applied this concept to studies where participants were given vignettes and population distributions for two professions and were tasked with assigning the person from the vignette to they were most likely to hold. In this example from Tversky and Kahneman's research, the population was 70% engineers and 30% lawyers, and the vignette was as follows:

"Dick is a 30-year-old man. He is married with no children, a man of high ability and high motivation, he promises to be quite successful in his field. He is well-liked by his colleagues."

Participants responded that there was a .5 likelihood that Dick was a lawyer even though the vignette does not contain any relevant information that would suggest he is a lawyer, and the overall likelihood that he is a lawyer is only .3. Their prevailing conclusion is that the personality described in the vignette is more *representative* of one that we would associate with lawyers, so participants ignore the logical and relevant statistical information provided.

The Halo Effect can be broadly defined as when an overarching, global judgment sways underlying, more specific judgments (Nisbett & Wilson, 1977). In other words, the Halo Effect established the relationship between global and specific judgments in the reverse order than that of the current research. In Nisbett and Wilson's research, they had participants evaluate a professor on the basis of their appearance, mannerisms, and accent. Across studies and variations in their appearance, mannerisms, and accents (American or British), the determining factor of

whether or not they were rated as being “appealing” was whether they were warm or cold. In short, their global disposition influenced the perception of their specific features more than variation in the features themselves.

The study at hand builds off of the research behind these two paradigms, the representativeness heuristic and the halo effect, in its analysis of the relationship between information provided about an individual and the resulting judgment or evaluation of their much larger group. The venting theory would provide an explanation for a reverse result pattern from those supported by the aforementioned heuristics. In other words, both of these well-established paradigms would suggest that directing attention to and enlisting expression about the negatively or positively salient information in the vignettes would skew participants responses in the direction of the stimuli. Our hypothesis suggests the opposite results pattern (the end judgment moves in the opposite direction of the salient stimuli because participants got an extreme opinion “off their chest”). Given the strong ideological crossover between both of these paradigms and the current study, this distinction is important in differentiating our results from the influence of these two well-known effects.

### **2.3 Bias and Stereotyping**

The concepts of bias and stereotyping apply almost exclusively to the first two of the three current experiments which both address individual-group relationships. The vignettes utilized in both of these studies describe a wealthy individual and, in the case of experiment 1, their specific profession. As a result, bias and stereotyping can naturally play a part in participants reactions and opinions. It is important to address bias in the context of this study because we make the claim that the signal effect within our results is not a result of bias recognition. The most significant differences between an enlarged specific opinion reflected onto

a group and a bias is that the specific opinion, while over-weight in its influence on the global judgment, is not implicit, it is explicitly stated, and is legitimate, it *should* factor into the decision-making process, just not as heavily as it does.

Stereotypes, commonly referred to as a specific type of bias, are “generalizations about groups that are applied to individual group members simply because they belong to that group” (Burgess & Borgida, 1999). In describing individuals that belong to identifiable groups, professional and socioeconomic, it is reasonable to assume that stereotypes may play an important role in this study. Conceptually, there is a connection between the outline of our study and certain interpretations of stereotyping. Stereotypes can be both descriptive (detailing what a certain group *is* like) and prescriptive (detailing what a certain group *should be* like) (Burgess & Borgida, 1999). This concept applies to the current research in that, by providing a vignette about a polarizing individual, we may be creating a descriptive stereotype or causing participants to create a prescriptive stereotype or expectation about their larger group. However, if stereotyping were the main signal driving participants responses, it is unlikely that we would see any effect of venting given that previous studies (Hofmann et al., 2005) have found that addressing or expressing stereotypes does not diminish their effects on decision-making. As a result, we do not believe that stereotyping can describe the pattern of the results from studies one or two.

## **2.4 Emotion Expression and Response Substitution**

Research in emotional expression provides evidence of a similar concept of venting but in a very different context (Xiao & Houser, 2005). Xiao and Houser utilized the ultimatum game (Güth, Schmittberger, & Schwarze, 1982), a game in which one player is given a sum of money (proposer) and is given the instruction to split it however they want with the other player (the responder) and the responder may accept or deny the offer. If the responder denies the offer, both

players get nothing. Looking across a combination of experimental studies that utilized the ultimatum game (Bolton & Zwick, 1995; Güth, & Tietz, 1990; Nowak, Page, & Sigmund, 2000; Thaler, 1988) around 50% of responders reject offers when they are below 30% of the total sum. Xiao and Houser found that when they constrained emotional expression in ultimatum games, participants show an increased rejection of unfair offers, resulting in costly punishment for both players. Their findings reflect that participants who were allowed to vent their feelings about the unfair offers to the experimenter rejected the offers less frequently and were more willing to make the logical choice that, although unfair, would benefit them more in the long run. When constrained, participants make costly punishment decisions that logically, they likely disagree with. At the root of most opinions and decisions is emotion, whether they pertain to social judgments (Forgas, 1991), financial decisions (Ackert, Church, & Deaves, 2003), or political opinions (Kühne et al., 2011), making emotional expression a key factor in communicating and receiving honest and logical decisions.

Response substitution is another, more similar model of this concept that takes an orthogonal approach to venting (Gal & Rucker, 2011). Focusing on survey bias and individual's need for self-expression, they support the claim that "respondents often provide answers to questions that reflect attitudes or beliefs they want to convey but the researcher has not asked about" (Gal & Rucker, 2011). Driven by an internal need to express ourselves that is seen even more often in our participant pool, individuals from independent-minded states like the United States of America (Kim & Drolet, 2003), when the question that we want to answer is not available, we will utilize other questions in order to express that opinion. In their studies, Gal and Rucker utilized vignettes of individuals or companies that communicated them as being wasteful or immoral and then asked participants to evaluate their intelligence or the quality of their goods

and services, respectively. They found evidence that when given the opportunity to express an opinion on the individual's wastefulness or the company's immorality, they gave more honest and reasonable answers to the unrelated questions on their intelligence or product qualities.

This research directly supports the foundational concept behind this study but is dramatically different in its design. It is important to note that the salient and negative aspects of the vignettes in their study *should* have absolutely no bearing on their intelligence or product quality as they are completely orthogonal factors. In the current study, however, the specific information about individuals and smaller factors should not and cannot be separated from the final judgment, however, they should be taken into proportionate consideration.

### **3. Present Studies**

The present studies ask participants to evaluate decisions about populations or major decisions after reading information on one salient individual or factor. The venting manipulations are intended to allow participants to express an extreme opinion (in accordance with the information they received) so that they will give more moderate, rational, and logically distributed global responses. The surveys in the present study ask about individuals and factors that exist as part of a group. Instead of being "response substitution" or "emotional expression", this is more accurately a combination and re-working of the two: *response re-distribution as a result of emotional expression*. The goal of this study is to test if this effect remains when the individual cannot be separated or addressed separately from its overlying group, but rather needs to be taken into more moderate consideration in order to give a more honest and holistic answer.

This paper is comprised of three separate studies. The first is a single manipulation experiment that analyzes specific judgments about individuals and global judgments about their

professional group. In this experiment, the participants read a negatively salient vignette about a person and then rate their support of a tax that will affect all individuals of their profession. The manipulation condition includes an intermediary opportunity for them to vent about the person's behavior before reporting their support rating of the tax policy.

The second experiment covers more potential sources of effect and aims to be more realistic, including 6 separate conditions (3 (vignette valence: none/control; positive; negative) × 2 (opportunity for venting: present versus absent) and deriving tax policy information from a tax bracket rather than a professional group (bankers). Participants in all 6 conditions are introduced to a theoretical individual and are told what their annual earnings are. The positive and negatively salient vignettes contain more information, describing the theoretical individual's personality and professional and moral conduct. Participants in the three venting conditions are then given the opportunity to "vent" or express their open-ended opinions about the vignette and the individual's annual income. Participants in all 6 conditions are then asked to give their support rating regarding increasing the marginal tax rate for the individual's entire tax bracket.

Experiment 3 examines a slightly different paradigm between specific factor judgments and global decisions. Participants read and are asked about a potential corporate campus being built in their hometown. Participants are randomly assigned to one of two manipulation conditions (opportunity to vent: present or absent) and are given a bulleted list of factors in the overall decision, all but one of which are positive factors and the remaining one is negative. Conceptually, the purpose of the venting condition in this study is to allow participants to express their opinion about the one negative factor to allow them to show greater overall support for building the corporate campus (dependent variable). All of the studies and conditions for all three experiments follow a random assignment, between-subjects design.

## **4. Experiment 1: Ariel the Banker**

### **4.1 Methods**

The first experiment run in this study was designed to be an analysis of the relationship between the judgment of an individual and the group to which they belong. 99 participants successfully completed this study by filling out surveys through Amazon's Mechanical Turk platform. All of the participants are English-speaking adults from the United States of America that were randomly assigned to different test conditions. Participants whose IP addresses could not be validated or who did not finish the study were removed from the sample. The average age of the participants in this study was 34.44 years old. 33 of the participants identified as women, 65 participants identified as men, and 1 participant responded that they "Prefer not to say". Participants were told that they would be filling out a short survey about Judgment and Choices and then they read a short vignette and filled out responses using the Qualtrics software platform (Appendix A).

First, participants were asked to read the following vignette about a hypothetical individual named Ariel who works as a Wall Street banker.

"Ariel Smith, a Wall Street banker, earns millions of dollars each year. Ariel makes this much money largely due to immoral, irresponsible financial behavior and at the expense of unsuspecting clients - but, without breaking the law."

Participants in the control condition were only asked the following related question and they responded using a slider that ranged from 1, labeled "Not at all supportive", to 9, labeled "Extremely supportive".

"How supportive will you be of a new tax that will target **all bankers** in the U.S.?"

Participants in the manipulation condition were asked one additional question before being asked about their support of the new income tax. The question asked for an open-ended response and was worded as follows:

“What do you think about Ariel's behavior?”

The ideology behind this study design is that, when given the opportunity to express their opinion about Ariel and his saliently bad and immoral behavior, participants will give a more rational and moderate response about their judgment on the proposed tax. Importantly, Ariel's behavior as one Wall Street Banker cannot be fully separated from participants overall judgment of bankers in general, but as one individual amongst millions in the profession, it should not have an extreme effect on their overall evaluation.

## **4.2 Results**

The results found in experiment 1 are supportive of the overall hypothesis that, when given the opportunity to vent about a specific opinion (in this case, about an individual) one is able to give a more rational and holistic judgment on a decision affecting their much larger group. For reference, the support rating scale ranged from 1 to 9. 1 was labeled “Not at all supportive” and 9 was labeled “Extremely supportive”. Given that the scale was unipolar (gauging only “supportiveness”), ambivalence towards the tax on this scale does not necessarily exist. In the control, no venting condition, the mean support rating of the 51 participants for the proposed tax on bankers was high, falling within the range of supportive to very supportive ( $M=6.98$ ,  $SD=2.21$ ). In the venting manipulation condition, in which the 48 participants were given the opportunity to express their opinion on Ariel the banker before expressing their support of the tax, the mean support rating was significantly lower ( $M=5.88$ ,  $SD=2.71$ ).



In examining the effect of the venting condition on participants general judgments, an independent samples t-test indicated that the opportunity to vent one's opinions significantly decreased support for the proposed tax,  $t(98) = 2.28, p = .028$ .

### 4.3 Discussion

The results of this study support the original hypothesis that allowing participants to vent about their specific opinions will allow them to give more rational and well-distributed responses to global questions. It is illogical to punish a group of millions of bankers as a result of reading about one individual who is immoral and unethical in his or her career. It *is* logical, on the other hand, to take that into consideration in thinking about your opinion on bankers in general. By expressing a negative opinion of or opposition to Ariel the banker, people are able to think bigger picture and realize that, as with any group of millions of people, there are people across the scale of ethics and goodness and the average is usually somewhere in the middle.

This study, however, does not address a baseline. What is the general consensus on American bankers (by proxy of a new tax that would specifically target them) without reading any vignette about a specific individual's behavior? Further, what is the effect of providing a positive vignette and are people influenced nearly as strongly by it? In other words, does positive venting exist? Experiment two aims to answer both of these questions by including baseline control conditions as well as positive control and manipulation conditions in addition to the negative control and manipulation conditions in this study.

As was briefly addressed in the results section, the dependent variable (support measure) in this study was unipolar, addressing only "supportiveness". As a result, the measure in and of itself is slightly leading, giving no room for outright opposition. It is also possible that this was a source of noise in this study as some participants may have recognized its unipolar nature

whereas others may have responded as if “not at all supportive” was equivalent to “strongly opposing”. Experiment two and three address this issue by including bipolar scales.

Last, while conceptually understandable, the final question posed to the participants regarding a tax on bankers is unrealistic in the real world. In order to accomplish the same goal of targeting a large group of Americans while also simulating true American tax law, experiment two replaces professional information with that of a tax bracket.

## **5. Experiment 2: Taxing Taylor Smith**

### **5.1 Method**

The second experiment was designed in order to create a control baseline, in which the participant does not read any polarizing about “Taylor Smith” before giving their opinion on the proposed tax policy. Additionally, this experiment aims to identify and isolate the potential effects of providing positive versus negatively salient information within the vignette. The addition of positive valence conditions is intended to test whether or not venting about positive information results in any movement of the general judgment. Juxtaposed with the results from experiment 1, we expect to see an increase in the average support figure in the positive valence, venting manipulation condition. This prediction is based on the reverse ideology that hearing an extremely positive example of a specific individual may be overly reflected in participants’ general judgments about the larger group to which that individual belongs. If, however, participants have the opportunity to express their positive judgment about the positive individual, they will give a more rational and moderate response, no longer pulled upwards by the outlier.

Importantly, professional information was excluded from the vignettes (and income earnings were made more moderate) to rule out some potential bias and allow for a more realistic

measure regarding tax policy. 679 participants successfully completed this study by filling out surveys through Amazon's Mechanical Turk platform. All of the participants are English-speaking adults from the United States of America that were randomly assigned to different test conditions. Participants whose IP addresses could not be validated or who did not finish the study were removed from the sample. The average age of all of the participants in this study was 38.10 years old. 324 of the participants identified as women, 352 participants identified as men, 2 participants identified as other, and 2 participants responded that they "Prefer not to say". There were no significant gender effects. Participants were told that they would be filling out a short survey about Judgment and Choices and then, after reading and responding to a series of six attention-check questions, they read a short vignette and filled out responses using the Qualtrics software platform (Appendix B).

Each individual condition is similar in structure to those of the first study however it has 6 separate conditions, following a 3 (vignette valence: baseline; negative; positive)  $\times$  2 (venting opportunity: present versus absent) design where valence and venting opportunity were manipulated between subjects.

Participants assigned to either of the baseline valence conditions read the following, limited vignette:

"Taylor Smith earns \$450,000 a year."

Participants assigned to either of the negative valence conditions read the following vignette:

"Taylor Smith earns \$450,000 a year. Taylor makes this much money largely due to immoral, irresponsible behavior and at the expense of unsuspecting business partners - but, without breaking the law."

Participants assigned to either of the positive valence conditions read the following vignette:

“Taylor Smith earns \$450,000 a year. Taylor makes this much money practicing moral, responsible behavior while supporting social development and creating jobs in his community.”

Participants in the three venting manipulation conditions (baseline, positive, and negative) who were given the opportunity to express their thoughts were then asked the following questions. Participants were able to type their open-ended thoughts and responded on a slider that ranged from 1, labeled “Much too low”, to 11, labeled “Much too high” in response to each question, respectively.

“What do you think about Taylor?”  
 “What do you think about the level of Taylor’s income?”

Participants in all 6 conditions were asked to report their position on raising the marginal tax rate for all Americans that fall within this tax bracket (Americans earning more than \$400,000 annually generally fall within the top 1%). This final support measure question acts as the dependent variable for all 6 conditions.

“What is your position on raising the marginal tax rate for **all Americans earning over \$400,000 a year** from 35% to 48%?”

Participants rated their support of this change in tax policy using a slider that ranged from 1, labeled “Strongly Oppose”, to 11, labeled “Strongly Support”.

## 5.2 Results

The results found in study 2, while falling along almost the exact pattern that we had hypothesized, were null. Given that the lack of statistical significance, the results and discussion sections for this study will review and focus upon the directionality of the data. For reference, the support rating scale in this study was slightly different from study 1, ranging from

1 to 11. 1 was labeled “Strongly Oppose” and 9 was labeled “Strongly Support”. In this experiment, an average rating of 5.5 can suggest complete ambivalence towards the change in tax policy given the bipolar scale. Interestingly, the response averages from all 6 conditions were at least 1.5 points above 5.5. Fluctuating between 7.25-7.96, all of the response averages were in a “moderately supportive” range.

First, in two control conditions in which participants were only aware of Taylor Smith’s annual income, the mean support ratings in the non-venting and venting conditions were extremely similar. In the baseline control, no venting condition where the 113 participants were not given the opportunity to express their opinion about their limited information on Taylor’s income, the average support rating was moderately high ( $M=7.33$ ,  $SD=3.32$ ). In the control venting condition, the average response from the 112 participants was very slightly lower, but not at a level of statistical significance ( $M=7.25$ ,  $SD=3.46$ ). We hypothesized that these two response averages would be very similar because participants did not receive any valenced or polarizing information about Taylor and therefore should not have any extreme opinions to express in the venting condition.

In the negative salience conditions, the difference between the venting and non-venting average support ratings was smaller than we had predicted. In the negative salience, no venting condition, the average support rating from the 115 participants for the increase in the tax rate was the highest across all 6 conditions, as we had predicted ( $M=7.96$ ,  $SD=2.82$ ). The 111 participants in the negative salience venting condition had a slightly lower support rating ( $M=7.70$ ,  $SD=3.51$ ). The difference between the two means, however, was not statistically significant. In accordance with our hypotheses, both negative salience conditions were higher than their respective control conditions although, again, neither of the differences were statistically significant.

In the positive salience conditions, the difference between the venting and non-venting conditions was, again, smaller than we had predicted but was similarly in the direction that we had expected. The average support rating from the 116 participants in the positive valence no venting condition ( $M=7.41$ ,  $SD= 3.20$ ) was extremely similar to that of the control, no venting average support rating ( $M=7.33$ ,  $SD= 3.32$ ). This could imply either that individual's general opinions on people falling within this tax bracket are good or that reading positive information about an individual within a group does not have as strong of an influence on one's perception of the group as reading negative information. When given the opportunity to express their opinions on the positive vignette about Taylor, the average support rating from the 113 participants in the positive valence, venting condition was slightly, but not significantly, higher ( $M= 7.58$ ,  $SD= 3.00$ ). While insignificant, this was the direction of the data that we had hypothesized would occur.

Looking at the venting conditions across the three frames of valence, the responses to the venting condition question, "What do you think about the level of Taylor's income?" where 1 was labeled "Much too low" and 11 was labeled "Much too high" varied as we predicted. The control and positive venting conditions were very similar ( $M= 7.80$  and  $M= 7.69$ , respectively). In accordance with our predictions, the average in the negative salience venting condition ( $M=9.89$ ) was significantly higher ( $t(220) = -0.83$ ,  $p < .0001$ ).

### **5.3 Discussion**

The results of this study, while interesting in their directionality, lack the statistical power to corroborate the results from experiment 1 or further support the overall hypothesis. It is notable that, even within the variance, participants in *all* conditions were supportive of this extreme raise in tax rates to a similar degree.

One potential source of noise in this study may have been that the addition of the second question in the venting condition. By asking participants about their position on Taylor's income specifically, rather than just their opinion of him and his behavior, we may have led participants to think about the final tax question in a different way. The study design was intended to give participants enough information in each vignette to allow them to make a judgment on Taylor's character (moral/immoral, ethical/non-ethical). That being said, having removed the professional information from the vignette, they received less specific information regarding how Taylor makes his/her annual income. It is possible that, if participants felt less informed or confident in their response to this metric, it may have moderated their response to the associated final question on raising tax rates.

Another potential reason that we did not find statistical significance could be due to the extreme nature of the taxation question (DV). One limitation that we took into consideration while designing the study was participants' knowledge about tax law. Previous studies (Rupert & Fischer, 1995) have found that the marginal tax rates that taxpayers' estimate are vastly different from their actual tax rates. This effect was found to be even more prevalent amongst individuals with lower incomes. We predicted that MTurk participants likely did not have a thorough baseline knowledge about where marginal tax rates currently stand for individuals making more than \$400,000 per year. The way that we chose to combat was to make the tax rate increase in our study severe. Although it is less realistic to increase a marginal tax rate by 13%, we hypothesized that it would be more effective in communicating to participants that this is a dramatic change in tax policy. That being said, based on some of the ex-post participant comments, many participants felt that this increase and a final tax rate of 48% were far too high.

As was previously mentioned in the literature review, due to the lack of statistical significance between the control, negative, and positive non-venting conditions, we do not see a significant anchoring (Ariely, Loewenstein, & Prelec, 2003) effect. Looking specifically at the relationship between the control and positive salience conditions, anchoring would suggest that the positive non-venting support average would be significantly lower than the control no venting average, but it is, in fact, slightly higher.

## **6. Experiment 3: Corporate Campus Study**

### **6.1 Method**

The third study run in this experiment was designed to extend the same conceptual analysis of the relationship between the judgment of an individual and a group to which they belong to a salient factor within a larger decision. The design of this experiment was intended to test the theory that, when voting and making other polar decisions, individuals can be distracted and over-influenced by a desire to express an opinion on individual salient factors. In the case of polar questions (for example, a yes-or-no vote), this opportunity for opinion expression does not exist and as a result, individuals may vote in a way that they feel expresses their outlier opinion but does not align with their global beliefs on the issue as a whole.

197 participants completed this study by filling out a short survey on Amazon's Mechanical Turk platform. 102 participants were in the no venting (control) condition, and 95 participants were in the venting condition. All of the participants are English-speaking adults from the United States of America. Participants whose IP addresses could not be validated or who did not finish the study were removed from the sample. The average age of all of the participants in this study was 36.12 years old. 85 of the participants identified as women, 111



participants identified as men, and 1 participant responded that they “Prefer not to say”. There were no significant gender effects. Participants were told that they would be filling out a short survey about Judgment and Choices and then, after reading and responding to a series of six attention-check questions, they read a short vignette and filled out responses using the Qualtrics software platform (Appendix C).

First, participants were asked to read the following vignette about a proposal for a new corporate campus in their hometown.

Suppose that one of the world's largest, wealthiest corporations is scheduled to build a new corporate campus in your hometown.

The new headquarters would:

- bring about 25,000 jobs to your hometown
- boost your local economy with millions of dollars in wages
- open the door for other businesses to operate in the surrounding area
- employ local contractors in the construction process
- be large, unattractive, and noticeably clash with your hometown's architecture

Participants in the venting manipulation condition were asked one additional question before being asked about their support of the new corporate campus. The question asked and allowed for an open-ended, typed response and was worded as follows:

Is there anything you like to say about any aspect of the plan?

Participants in both conditions were asked to give a final support rating on the corporate campus (dependent variable for both conditions) in response to the following question:

Should the city move forward with the plan to open the corporate campus?

Participants in both conditions rated their support of this proposed corporate campus using a slider that ranged from 1, labeled “Definitely No”, to 7, labeled “Definitely Yes”.

## 6.2 Results

We hypothesized the results for this study would be that the vignette, no venting condition would have a significantly lower average support rating than that of the vignette, venting condition. Overall, the results found in this study were null although the directionality was in the direction that we had predicted. After a closer analysis of the comments written in the venting condition, there is a compelling explanation as to why the results were statistically insignificant.

For reference, the support rating for this decision ranged from 1 (definitely no) to 7 (definitely yes). Given the bipolar scale, an average rating of 3.5 would suggest overall ambivalence towards the decision. In the no venting condition, the mean support rating for the corporate campus reported by the 102 participants high but with a very large spread, leaning heavily towards yes ( $M= 5.32$ ,  $SD= 2.20$ ). In the venting condition, in which the 95 participants were given the opportunity to express their opinion about the corporate campus proposal before expressing their support of the decision, the mean support rating was not significantly different but was slightly higher, leaning even further towards "yes" ( $M=5.52$ ,  $SD= 3.17$ ). In examining the effect of the venting condition on participants general judgments about the decision, an independent samples t-test indicated that the opportunity to vent one's opinions did not significantly change overall support for the corporate campus,  $t(195) = -0.83$ ,  $p = .41$ .

While they are not a scaled, numerical measure, the written responses (in the venting condition) from the data of this study help to elucidate why the effect found in experiment one is not present in this application. The comments written in the venting condition are widely varied, unlike those in the previous studies which followed very polarized themes (praise in positive/moral conditions and criticism and condemnation in negative/immoral conditions). A

small fraction of participants expressed extremely negative opinions regarding the ugly architecture of the building (i.e. “I don't like that it is going to clash with my hometown's architecture at all. They need to design to fit in.”). Another small fraction of participants expressed complete ambivalence or no opinion at all. About one-third of participants expressed purely positive opinions about the overall decision (i.e. “It's a great idea. I think it should be done.”). The vast majority of participants, however, responded with positive responses that address a caveat (i.e. “I would be happy about the opportunities but maybe less than thrilled about the campus clashing with the existing architecture.”). With such mixed responses to the stimulus, it is clear that the intended impression and effect are not present.

### **6.3 Discussion**

The concept behind this study was to create a paradigm that more closely replicates the factor, global decision conflation that we hypothesize occurred in Brexit. Instead of describing one person that belongs to a larger group, this study aims to describe a circumstance or decision where one factor is particularly salient and debatable in the overall decision (i.e. similar to someone who felt strongly about immigration but didn't necessarily want to leave the EU). The hypothesis for this study was that if participants have the opportunity to express their opinion on this one factor, they will give a more rational and less extreme overall judgment or decision in the more global question.

Given that this study had a combination of positive and negative information (as most large-scale decisions do) it was an inherent risk that the factor that we intended to be strongly negatively salient would not stand out in that way to the participants. In other words, the likely cause of the null results found in this study is salience and signal of the outlier piece of information. While polarizing for a small fraction of the participants, the factor that was designed

to be extremely negatively salient was generally seen as less significant in the scheme of the larger decision. In other words, even if all of the participants had expressed their opinion about the specific negative outlier, it likely would not have a leveling influence on their overall judgment because it was not salient enough.

In order to create an iteration of this study that works, one needs to strike the perfect balance for the outlier piece of information between saliently, but not overwhelmingly negative. As a result of the purposefully non-orthogonal study design, the outlier factor cannot be wholly separated from the global judgment. Rather, the goal of this study was to see a change in whether or not the negative piece of information is *dominating* the global judgment. In order to avoid having the negative outlier overwhelm the entire paradigm—if the factor was too strongly negative, expressing an opinion about it may not be enough to level the overall judgment or think about the factor as equal to all of the others—we ended up with a factor that was not salient enough to garner the desired reaction.

Creating a paradigm that accurately captures this concept proved to be difficult because assuming that one factor will be universally received as the most salient, without making it so negative that it is impossible to be moderated to form a final judgment, is a very fine line. Additionally, there is guaranteed noise in providing both positive and negatively salient information in one vignette in general. In the same respect that different participants may interpret the salience and importance of the outlier factor in different ways, participants may interpret the group of positive factors in different ways which could have a large effect on their overall attitude towards the decision and how worthwhile it is to them to express an oppositional opinion to a single factor.

## **6.4 Summary of Results**

Looking at the results from all three experiments together, one resounding conclusion is that the experimental application of this concept did not translate in the same way to factor-decision paradigms as it did to individual-group paradigms. The results from experiment one and the trends from experiment two support a potential presence of a venting effect and the underlying hypothesis. Study three's null results and mixed commentary, however, suggest that this concept either could be better replicated or approached in a different way, or may be limited to specific decisions like Brexit and may not be generalizable.

## **7. Discussion**

### **7.1 General Discussion**

The findings from experiment 1 and the trends from experiment 2 suggest that “venting” *may* function to moderate individuals' global opinions and judgments in paradigms that involve individuals and their larger populations. The results from experiment 1 support our initial hypothesis that, when participants were given the opportunity to express their specific opinion, they were able to give more rational (and less specific opinion-dependent) evaluations of a decision affecting the general group. However, given that the results from experiments 2 and 3 were both statistically insignificant, we cannot make a robust conclusion in either direction. Having described individual limitations and potential changes to both experiments 2 and 3, the focus of this discussion will be a potential alternative explanation for the result patterns, limitations of the study in general, and future directions for this paradigm if applied to other domains.

There are many different iterations of dual processing theory in the literature, but most of them converge on the idea that there are two types of cognitive processes, rapid, automatic, and unconscious processes and slow, deliberative, and conscious cognitive processes (Evans, 2008). These two types of thought are now collectively labeled System 1 and System 2 (Stanovich & West, 2000), respectively. Differentiating between impulsive and reflective (Strack & Deutsch, 2004) or intuitive and analytic (Hammond, 1996) thought processes could play an important role in the interpretation of the current studies. In examining the expected and hypothesis-congruent results patterns from experiments one and two, a potential application of this theory is that, by asking participants to reflect upon information about Ariel or Taylor we are activating System Two, reflective processing which leads participants to make a more calculated and therefore more moderate response. Without venting, their response may have been a reactional, intuition-based System One response, which is why we see a difference between the two averages.

A measure of cognitive ability that is heavily associated with dual process theory is the Cognitive Reflection Test, or CRT (Frederick, 2005). The CRT is a 3-item test that measures individuals' ability to resolve between competing stimuli, an initial impulsive, incorrect response and the decision to reflect and get the correct response. The first item on the test is:

A bat and a ball cost \$1.10. The bat costs \$1.00 more than the ball.

How much does the ball cost? \_\_\_ cents

The intuitive, System 1 response or the number that comes immediately to mind in answering this question is 10 cents. That answer, however is wrong because if the ball were to cost 10 cents, the bat would cost \$1.10, totaling to \$1.20. Upon reflection (and maybe some simple algebra), the correct answer is 5 cents. Whether or not the participant gets this answer correct is effectively dependent on whether or not they catch this intuitive error because almost all

participants who do not respond with 10 cents, get the correct answer (Frederick, 2005). This applies to the current study because the venting question could have led participants to reflect upon their individual to group projections and moderate them. In the future directions portion of this discussion, we will address a potential future study which would analyze the relationship between these two paradigms.

## **7.2 Limitations**

One potential limitation in this study is in the data collection. All three of the experiments for this study were run on Amazon's Mechanical Turk platform. In a study conducted by Goodman and colleagues (2013), Mechanical Turk users were found to answer consistently with typical student and community samples in many instances, but not all. One important limitation is that MTurk users are less likely to pay attention to experimental information in comparison to traditional participant populations. In addition to attentional differences, it is notable in the context of this study that MTurk participants have similar attitudes about money to student populations but different from typical community participant populations. This is particularly important because the questions in this study regarding voting and taxation are far more relevant to typical community populations than to that of undergraduate students.

Another potential limitation in this study is the fact that the conceptual basis is derived from such a complex and polarizing issue, Brexit. While, for the purpose of creating an explanation and analogy, we were able to simplify the trends among regretful voters and associate them with an anti-immigration ideology, it is almost impossible to reduce such grand-scale and important decisions to a single opinion. As a result, it is extremely difficult to reproduce simpler decision-making paradigms (like that of experiment 3) that follow the same ideology and achieve the same polarizing effect.

### 7.3 Future Directions

Methodologically, returning to the application to the Dual Process Theory and the aforementioned Cognitive Reflection Task (CRT), a potential application for a future version of this study could include the CRT. By examining the relationship between participants performance on the CRT and their responses to this venting paradigm, we could both determine whether or not cognitive reflection is highly correlated with the effects of venting and, using the CRT as a proxy of general intelligence, determine whether or not intelligence correlates with susceptibility to venting paradigms.

The most direct application of this research to the political system is in the concept of the protest vote. Van der Brug and colleagues (2000) defined the protest votes “by the motives underlying electoral choices”. In other words, whether or not they were voting for an individual or a policy because they believed in it and they wanted to see it put into action, or because of an auxiliary belief about the system in general. Their study focuses specifically on European anti-immigration voters as protest voters, individuals who vote for third party candidates they believe won’t win or policies they believe won’t pass. The concept of venting or giving voters a chance to express their opinions about political issues could act as a solution to the protest vote. The difficulty with a protest vote is that, in most cases, it does not change the outcome of the vote in any way and it ends up being essentially, a waste of a vote.

A theoretical application of this information might be to provide some sort of free expression opportunity in voting centers. An important limitation on this is that voting *is* a time-sensitive process so adding open-ended questions on the ballot itself is not practicable. Avoiding the non-feasible task of adding a venting question before each vote on the ballot, there are still different potential opportunities for venting before the ballot box. One option could be to pass



out open-ended surveys for individuals to share their comments and concerns with their local representatives as individuals enter the voting area. There is a selection bias for who has time or wants to take the time to fill out the surveys but, conceptually, it is likely that the individuals that are most inclined to fill out a survey that allows them to express an opinion that is unrepresented in their vote are going to be the same individuals who would benefit most from venting and emotional expression.

Given that the significant trends and results found in this study concerned the individual to larger group domain, one application that could build off of this research would be to look at the effect of venting on attitudes and decisions pertaining just to individuals. One specific domain where this paradigm might be especially relevant is in the case of legal decision-making. Previous studies (MacCoun & Kerr, 1988; Finkelstein & Bastounis, 2010) have found that legal deliberation amongst jurors (in simulated juries) has a significant effect (although the direction of the effect varies and is highly debated in the literature) on jury verdicts. While conversation behind closed doors, in the jury's typical deliberation process, has been closely studied, emotion or opinion expression in the courtroom or to the perpetrator has not been studied (which is where venting may play a more direct role). A future study could test for the effect of venting about an immoral or irritating individual on the eventual decision about whether they are guilty or not. This paradigm may be even more relevant in a legal proceeding than that of tax policy given its observed influence on individual judgements.

#### **7.4 Concluding Remarks**

It is often interesting, and compelling to scientists, when people on a large-scale, express opinions that they don't actually believe in, vote for policies or candidates that they don't actually support, or say things that they don't really mean. Every day contradictions in human

behavior can be fascinating in scientific contexts as we examine their root causes. While the specific paradigms in this study resulted in mixed conclusions, this paradigm has far more room for exploration. The research in this study helps to unlock one small piece of that compelling puzzle: why is it that individuals make this type of contradictory decisions? It may just be to express what they feel is an unheard opinion.

### **Author Contributions**

Voicheck originally proposed the idea of venting which was re-worked and established in its current state by Crum and Voicheck together. Crum, Voicheck and Frederick developed the idea and designed the studies together. Voicheck physically uploaded and ran all of the studies on Amazon Mechanical Turk and acquiring the IRB approval to do so. With guidance from Voicheck, Crum analyzed the results and compiled an initial draft of the paper.

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## Appendix

### A. Experiment 1: Ariel the Banker

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#### Start of Block: screeners

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**Attention:**

This study is designed for U.S. participants only. In order to take this survey, please turn off your VPS/VPN/proxy if you are using one and also any ad blocking applications. Failures to do this might prevent you from completing the HIT.

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**To participate in this study, you must live in the United States and be fluent in English. Please answer the questions below.**

---

**Which of the following terms refers to a student in their second year of high school?**

- 8th grader (1)
  - Freshman (3)
  - Sophomore (4)
  - Junior (5)
  - Senior (6)
- 

**Which of these is NOT usually served at a 4th of July cookout?**

- Granola (1)
  - Hot dogs (2)
  - Hamburgers (3)
  - Coleslaw (4)
  - Baked beans (6)
-

**Which one of these phone numbers connects you to emergency services?**

- 112 (1)
- 999 (2)
- 789 (3)
- 000 (4)
- 911 (5)

Please respond **truthfully**:

	Yes (1)	No (2)
Have you ever been bitten by an insect? (1)	<input type="radio"/>	<input type="radio"/>
Have you ever been bitten by a great white shark? (3)	<input type="radio"/>	<input type="radio"/>
Have you ever suffered a fatal heart attack? (4)	<input type="radio"/>	<input type="radio"/>

**End of Block: screeners**

**Start of Block: still missing**

For some reason, we were still unable to verify your country location. We ask you to please assist us in getting this protocol correct. Please enter your MTurk worker ID below and contact the requester for this HIT to report the problem.

Once you click NEXT, you will be taken to the survey (and certifying that you are taking this survey from the U.S. and not using a VPS). We will be checking locations manually for those who reach this point and you will be contacted if this check identifies you as violating these requirements.

**End of Block: still missing**

**Start of Block: consentBlock**

### **Judgments and Choices**

**Guy Voichek** [guy.voichek@yale.edu](mailto:guy.voichek@yale.edu)

#### **Purpose:**

We are conducting a research study to examine judgments and choices.

#### **Procedures:**

Participation in this study will take approximately 2 minutes. You will receive monetary compensation in

exchange for your participation.

**Risks and Benefits:**

No known risks are associated with your participation in this survey. Note, however, that you may decline to answer any question you feel is intrusive or objectionable, and you may withdraw your participation at any time if you feel uncomfortable. Although this study will not benefit you personally, we hope that our results will add to the knowledge about people's judgments and experiences.

**Confidentiality:**

The researcher will not know your name, and no identifying information will be connected to your survey answers in any way. The survey is therefore anonymous. However, your account is associated with an MTurk number that the researcher has to be able to see in order to pay you, and in some cases these numbers are associated with public profiles which could, in theory, be searched. For this reason, though the researcher will not be looking at anyone's public profiles, the fact of your participation in the research (as opposed to your actual survey responses) is technically considered "confidential" rather than truly anonymous.

**Voluntary Participation:**

Participation in this study is completely voluntary. You are free to decline to participate, to end participation at any time for any reason, or to refuse to answer any individual question without penalty or loss of compensation.

**Questions:**

If you have any questions about this study, you may contact the investigator, Guy Voichek, [guy.voichek@yale.edu](mailto:guy.voichek@yale.edu). If you have any questions about your rights as a research participant or concerns about the conduct of this study, you may contact the Yale University Human Subjects Committee, 203-785-4688, [human.subjects@yale.edu](mailto:human.subjects@yale.edu).

*Please be sure to provide the name of the investigator and as much information about this particular study as you can.* Your identity will not be revealed to the researcher.

**Would you like to continue to the study? By selecting "I agree" and clicking "next" below you indicate that you have read and understood the information provided on this page.**

- I agree (1)
- I do NOT agree (2)

*Skip To: End of Survey If Judgments and Choices Guy Voichek*[guy.voichek@yale.edu](mailto:guy.voichek@yale.edu) Purpose: We are conducting a research study... = I do NOT agree

End of Block: consentBlock

---

Start of Block: target

Ariel Smith, a Wall Street banker, earns millions of dollars each year. Ariel makes this much money largely due to immoral, irresponsible financial behavior and at the expense of unsuspecting clients - but, without breaking the law.

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 Page Break

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*Display This Question:*

*If condition = vent*

Ariel Smith, a Wall Street banker, earns millions of dollars each year. Ariel makes this much money largely due to immoral, irresponsible financial behavior and at the expense of unsuspecting clients - but, without breaking the law.

*Display This Question:*

*If condition = vent*

What do you think about Ariel's behavior?

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Page Break

Ariel Smith, a Wall Street banker, earns millions of dollars each year. Ariel makes this much money largely due to immoral, irresponsible financial behavior and at the expense of unsuspecting clients - but, without breaking the law.

How supportive will you be of a new tax that will target **all bankers** in the U.S.?

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)	
Not at all supportive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely supportive

End of Block: target

Start of Block: conclusionBlock

What is your age?

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Page Break

What is your gender

- Female (1)
- Male (2)
- Other (3)
- I prefer not to answer (4)

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Page Break

Do you have any comments about this study?

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**End of Block: conclusionBlock**

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**B. Experiment 2: Taxing Taylor Smith Study**

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Start of Block: screeners

**Attention:**

This study is designed for U.S. participants only. In order to take this survey, please turn off your VPS/VPN/proxy if you are using one and also any ad blocking applications. Failures to do this might prevent you from completing the HIT.

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**To participate in this study, you must live in the United States and be fluent in English. Please answer the questions below.**

---

**Which of the following terms refers to a student in their second year of high school?**

- 8th grader (1)
  - Freshman (3)
  - Sophomore (4)
  - Junior (5)
  - Senior (6)
- 

**Which of these is NOT usually served at a 4th of July cookout?**

- Granola (1)
- Hot dogs (2)
- Hamburgers (3)
- Coleslaw (4)
- Baked beans (6)

**Which one of these phone numbers connects you to emergency services?**

- 112 (1)
- 999 (2)
- 789 (3)
- 000 (4)
- 911 (5)

-----

Please respond **truthfully**:

	Yes (1)	No (2)
Have you ever been bitten by an insect? (1)	<input type="radio"/>	<input type="radio"/>
Have you ever been bitten by a great white shark? (3)	<input type="radio"/>	<input type="radio"/>
Have you ever suffered a fatal heart attack? (4)	<input type="radio"/>	<input type="radio"/>

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**End of Block: screeners**

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**Start of Block: still missing**

For some reason, we were still unable to verify your country location. We ask you to please assist us in getting this protocol correct. Please enter your MTurk worker ID below and contact the requester for this HIT to report the problem.

Once you click NEXT, you will be taken to the survey (and certifying that you are taking this survey from the U.S. and not using a VPS). We will be checking locations manually for those who reach this point and you will be contacted if this check identifies you as violating these requirements.

**End of Block: still missing**

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**Start of Block: consentBlock**

**Judgments and Choices**

**Guy Voichek** [guy.voichek@yale.edu](mailto:guy.voichek@yale.edu)

**Purpose:**

We are conducting a research study to examine judgments and choices.

**Procedures:**

Participation in this study will take approximately 2 minutes. You will receive monetary compensation in

exchange for your participation.

**Risks and Benefits:**

No known risks are associated with your participation in this survey. Note, however, that you may decline to answer any question you feel is intrusive or objectionable, and you may withdraw your participation at any time if you feel uncomfortable. Although this study will not benefit you personally, we hope that our results will add to the knowledge about people's judgments and experiences.

**Confidentiality:**

The researcher will not know your name, and no identifying information will be connected to your survey answers in any way. The survey is therefore anonymous. However, your account is associated with an MTurk number that the researcher has to be able to see in order to pay you, and in some cases these numbers are associated with public profiles which could, in theory, be searched. For this reason, though the researcher will not be looking at anyone's public profiles, the fact of your participation in the research (as opposed to your actual survey responses) is technically considered "confidential" rather than truly anonymous.

**Voluntary Participation:**

Participation in this study is completely voluntary. You are free to decline to participate, to end participation at any time for any reason, or to refuse to answer any individual question without penalty or loss of compensation.

**Questions:**

If you have any questions about this study, you may contact the investigator, Guy Voichek, [guy.voichek@yale.edu](mailto:guy.voichek@yale.edu). If you have any questions about your rights as a research participant or concerns about the conduct of this study, you may contact the Yale University Human Subjects Committee, 203-785-4688, [human.subjects@yale.edu](mailto:human.subjects@yale.edu).

*Please be sure to provide the name of the investigator and as much information about this particular study as you can.* Your identity will not be revealed to the researcher.

**Would you like to continue to the study? By selecting "I agree" and clicking "next" below you indicate that you have read and understood the information provided on this page.**

- I agree (1)
- I do NOT agree (2)

*Skip To: End of Survey If Judgments and Choices Guy Voichek [guy.voichek@yale.edu](mailto:guy.voichek@yale.edu) Purpose: We are conducting a research study... = I do NOT agree*

End of Block: consentBlock

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Start of Block: mainBlock

---

Taylor Smith earns \$450,000 a year.

---

*Display This Question:*

*If valence = bad*

Taylor makes this much money largely due to immoral, irresponsible behavior and at the expense of unsuspecting business partners - but, without breaking the law.

---

*Display This Question:*

*If valence = good*

Taylor makes this much money practicing moral, responsible behavior while supporting social development and creating jobs in his community.

---

Page Break

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*Display This Question:*

*If vent = yes*

Taylor Smith earns \$450,000 a year.

---

*Display This Question:*

*If valence = bad*

*And vent = yes*

Taylor makes this much money largely due to immoral, irresponsible behavior and at the expense of unsuspecting business partners - but, without breaking the law.

---

*Display This Question:*

*If valence = good*

*And vent = yes*

Taylor makes this much money practicing moral, responsible behavior while supporting social development and creating jobs in his community.

---

*Display This Question:*

*If vent = yes*

What do you think about Taylor?

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*Display This Question:*

*If vent = yes*

What do you think about the level of Taylor's income?

	1	2	3	4	5	6	7	8	9	10	11	
	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	9 (9)	10 (10)	11 (11)	
Much Too Low	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Much Too High

Page Break

Taylor Smith earns \$450,000 a year.

*Display This Question:*

*If valence = bad*

Q28 Taylor makes this much money largely due to immoral, irresponsible behavior and at the expense of unsuspecting business partners - but, without breaking the law.

*Display This Question:*

*If valence = good*

Taylor makes this much money practicing moral, responsible behavior while supporting social development and creating jobs in his community.

---

What is your position on raising the marginal tax rate for **all Americans earning over \$400,000 a year** from 35% to 48%?

	1	2	3	4	...	8	9	10	11	
	1 (1)	2 (2)	3 (3)	4 (4)	...	8 (8)	9 (9)	10(10)	11(11)	
Strongly oppose	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Strongly support

End of Block: target

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Start of Block: conclusionBlock

What is your age?

\_\_\_\_\_

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Page Break

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What is your gender

- Female (1)
  - Male (2)
  - Other (3)
  - I prefer not to answer (4)
- 

Page Break

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Do you have any comments about this study?



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End of Block: conclusionBlock

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### C. Experiment 3: Corporate Campus Study

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Start of Block: screeners

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**Attention:**

This study is designed for U.S. participants only. In order to take this survey, please turn off your VPS/VPN/proxy if you are using one and also any ad blocking applications. Failures to do this might prevent you from completing the HIT.

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**To participate in this study, you must live in the United States and be fluent in English. Please answer the questions below.**

---

**Which of the following terms refers to a student in their second year of high school?**

- 8th grader (1)
  - Freshman (3)
  - Sophomore (4)
  - Junior (5)
  - Senior (6)
-

**Which of these is NOT usually served at a 4th of July cookout?**

- Granola (1)
  - Hot dogs (2)
  - Hamburgers (3)
  - Coleslaw (4)
  - Baked beans (6)
- 

**Which one of these phone numbers connects you to emergency services?**

- 112 (1)
  - 999 (2)
  - 789 (3)
  - 000 (4)
  - 911 (5)
- 

Please respond **truthfully**:

	Yes (1)	No (2)
Have you ever been bitten by an insect? (1)	<input type="radio"/>	<input type="radio"/>
Have you ever been bitten by a great white shark? (3)	<input type="radio"/>	<input type="radio"/>
Have you ever suffered a fatal heart attack? (4)	<input type="radio"/>	<input type="radio"/>

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**End of Block: screeners**

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**Start of Block: still missing**

For some reason, we were still unable to verify your country location. We ask you to please assist us in getting this protocol correct. Please enter your MTurk worker ID below and contact the requester for this

HIT to report the problem.

Once you click NEXT, you will be taken to the survey (and certifying that you are taking this survey from the U.S. and not using a VPS). We will be checking locations manually for those who reach this point and you will be contacted if this check identifies you as violating these requirements.

End of Block: still missing

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Start of Block: consentBlock

### **Judgments and Choices**

**Guy Voichek** [guy.voichek@yale.edu](mailto:guy.voichek@yale.edu)

#### **Purpose:**

We are conducting a research study to examine judgments and choices.

#### **Procedures:**

Participation in this study will take approximately 2 minutes. You will receive monetary compensation in exchange for your participation.

#### **Risks and Benefits:**

No known risks are associated with your participation in this survey. Note, however, that you may decline to answer any question you feel is intrusive or objectionable, and you may withdraw your participation at any time if you feel uncomfortable. Although this study will not benefit you personally, we hope that our results will add to the knowledge about people's judgments and experiences.

#### **Confidentiality:**

The researcher will not know your name, and no identifying information will be connected to your survey answers in any way. The survey is therefore anonymous. However, your account is associated with an MTurk number that the researcher has to be able to see in order to pay you, and in some cases these numbers are associated with public profiles which could, in theory, be searched. For this reason, though the researcher will not be looking at anyone's public profiles, the fact of your participation in the research (as opposed to your actual survey responses) is technically considered "confidential" rather than truly anonymous.

#### **Voluntary Participation:**

Participation in this study is completely voluntary. You are free to decline to participate, to end participation at any time for any reason, or to refuse to answer any individual question without penalty or loss of compensation.

#### **Questions:**

If you have any questions about this study, you may contact the investigator, Guy Voichek, [guy.voichek@yale.edu](mailto:guy.voichek@yale.edu). If you have any questions about your rights as a research participant or concerns about the conduct of this study, you may contact the Yale University Human Subjects Committee, 203-785-4688, [human.subjects@yale.edu](mailto:human.subjects@yale.edu).

*Please be sure to provide the name of the investigator and as much information about this particular study as you can.* Your identity will not be revealed to the researcher.

**Would you like to continue to the study? By selecting “I agree” and clicking “next” below you indicate that you have read and understood the information provided on this page.**

- I agree (1)
- I do NOT agree (2)

*Skip To: End of Survey If Judgments and Choices Guy Voichekguy.voichek@yale.edu Purpose: We are conducting a research study... = I do NOT agree*

**End of Block: consentBlock**

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**Start of Block: mainBlock**

Suppose that one of the world's largest, wealthiest corporations is scheduled to build a new corporate campus in your hometown.

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Page Break

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Suppose that one of the world's largest, wealthiest corporations is scheduled to build a new corporate campus in your hometown.

The new headquarters would:

- bring about 25,000 jobs to your hometown
  - boost your local economy with millions of dollars in wages
  - open the door for other businesses to operate in the surrounding area
  - employ local contractors in the construction process
  - be large, unattractive, and noticeably clash with your hometown's architecture.
- 

Page Break

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*Display This Question:*

*If condition = vent*

Suppose that one of the world's largest, wealthiest corporations is scheduled to build a new corporate campus in your hometown.

The new headquarters would:

- bring about 25,000 jobs to your hometown
- boost your local economy with millions of dollars in wages
- open the door for other businesses to operate in the surrounding area
- employ local contractors in the construction process
- be large, unattractive, and noticeably clash with your hometown's architecture.

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*Display This Question:*

*If condition = vent*

Is there anything you like to say about any aspect of the plan?

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Page Break

Suppose that one of the world's largest, wealthiest corporations is scheduled to build a new corporate campus in your hometown.

The new headquarters would:

- bring about 25,000 jobs to your hometown
- boost your local economy with millions of dollars in wages
- open the door for other businesses to operate in the surrounding area
- employ local contractors in the construction process
- be large, unattractive, and noticeably clash with your hometown's architecture

---

Should the city move forward with the plan to open the corporate campus?

	1	2	3	4	5	6	7	
	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	
Definitely not	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Definitely yes

End of Block: mainBlock

Start of Block: conclusionBlock

What is your age?

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Page Break

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What is your gender

- Female (1)
- Male (2)
- Other (3)
- I prefer not to answer (4)

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Page Break

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Do you have any comments about this study?

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End of Block: conclusionBlock