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Framing Traits: The Role of Personality in Framing Effects

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FRAMING TRAITS:

THE ROLE OF PERSONALITY IN FRAMING EFFECTS

by

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FRAMING TRAITS:
THE ROLE OF PERSONALITY IN FRAMING EFFECTS
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The processing of messages in the political world is often a function of the frames in which the information is embedded (e.g. Druckman 2001; 2007; Gamson 1989; Iyengar 1991; Jacoby 2001; Nelson, Clawson, and Oxley 1997). These frames have the ability to alter preferences based on how people process information. Research on frames has neglected how an individual's personality creates the ability to resist or accept the various frames found in political communications. The question at hand is whether framing effects vary based on personality traits and typologies, or if people universally succumb to them when controlling for factors such as knowledge and core value dispositions (see Zaller 1992; Chong and Druckman 2007). The study uses the Big Five Inventory and Prospect Theory from the Minnesota Twin Study in the attempt to understand how personality affects preference change based on framing. Findings show agreeableness to be the only factor to affect preference changes between prospect theory's loss and gain frames. In addition, personality traits are not found to affect the choice of a risky or sure option in gain and loss frames. However, conclusions indicate the possibility of personality causing variation in preference changes due to framing effects once political rhetoric is entered into the equation.

Dedicated to all who believed in me even when I didn't believe in myself.
I will never forget you.

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The processing of messages in the political world is often a function of the frames in which the information is embedded (e.g. Druckman 2001; 2007; Gamson 1989; Iyengar 1991; Jacoby 2001; Nelson, Clawson, and Oxley 1997). These frames have the ability to alter preferences based on how people process information. Research on frames has neglected how an individual's personality creates the ability to resist or accept the various frames found in political communication.

Framing effects have drawn relevancy from prospect theory proposed by Kahneman and Tversky (1989), the psychological model proposes the occurrence of a preference change stemming from the content being framed as a gain or a loss. However the inability to come to harmonious understanding of framing effects has plagued social science research, including political psychology and political communication (see, Druckman 2007a). People such as Zaller (1992) and Bartels (2003) argue that framing effects are not as consequential as others believe them to be because people do not actually hold consistent preferences. Druckman (2001c; 2004) questions some of the findings based on equivalency frames arguing that the context of the political arena is so rich with content differences. The methods employing these, such as prospect theory, have less significant results than studies utilizing emphasis or issue frames. Others have attempted to look at mediating and moderating effects that would help to explain inconsistencies in findings (e.g. Slothuus 2008). One area not explored in the framing literature involves the differences within the individual: his/her personality. Recently political science researchers are bringing up the importance of the five factor model of personality and its potential direct and indirect effects on political attitudes and behavior (e.g. Mondak et al. 2010; Gerber et al. 2010; Mondak and Halperin 2008; Mondak

forthcoming). The question at hand is whether framing effects vary based on personality traits and typologies, or if people universally succumb to them when controlling for factors such as knowledge and core value dispositions (see Zaller 1992; Chong and Druckman 2007).

The following thesis looks into whether personality affects people's resistance to frames, or the ability of a person to maintain the same preference regardless of how a situation is worded. The study uses the Big Five Inventory and Prospect Theory from the Minnesota Twin Study in an attempt to understand how individual differences result in framing effects. Prior to the findings, current research on frames is reviewed and the argument of why certain personality factors, specifically the five factor model and personality typology, may result in a person succumbing to or resisting frames is developed. Finally, conclusions are discussed and implications for further research are explored.

<div align="center">Frames</div>

Framing research in political science has many roots in prospect theory. Kahneman and Tversky (1979; Tversky and Kahneman 1981; 1986) offer prospect theory as an answer to the critique of utility theory and rationality, stating when faced with a decision dealing with risk, people are not rational actors. People given two equivalent problems with a different frame will alter their preference because "changes of perspective often reverse the relative apparent size of objects and the relative desirability of options" (Tversky and Kahneman 1981, 453). Most often, these frames are characterized as placing the problem in a positive/gain context or a negative/loss context framework.
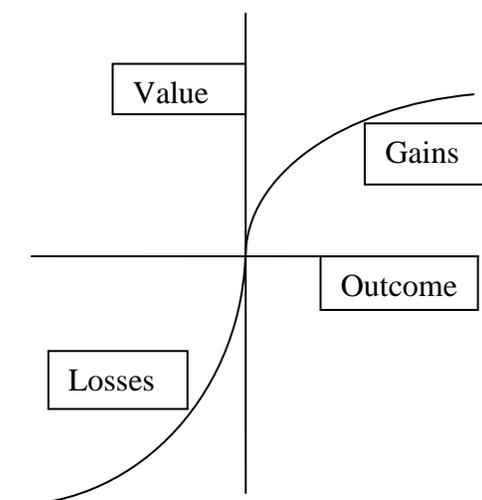
Figure 1. S-Curve of Prospect Theory
Adapted from Tversky and Kahnamen (1981, 454).

Prospect theory works on the principle that people evaluate the information they are given from a neutral baseline with the value of the decision being either as positive or negative (Tversky and Kahneman 1981). The S-shaped value function proposed by the work of Tversky and Kahneman depicts the relative increase in gains from the neutral point is more gradual than the losses. Figure 1 depicts Prospect Theory's S-curve. Therefore, problems framed as negative or in terms of losses have more of a negative impact on the outcome value than the same problem in a positive or gain frame. For instance, a problem that says you may lose $10 dollars has more of a detrimental effect to the person's decision outcome than a problem that says you may gain $10. In addition, the nature of the S-shaped curve means that as the values get farther away from neutral, their relative impact is less. For instance, a problem that changes the value from $5 to $10 has more of an impact on someone's final decision than moving from $100 to $105 (Kahneman and Tversky 1979; Tversky and Kahneman 1981; 1986).

Based on the value curve, people are more likely to choose a risk aversion choice under a gain frame and make a risky choice under the loss frame and people put more weight on low probabilities and less weight on those probabilities that are moderate or high (Tversky and Kahneman 1981). One of the more broadly used problems of Tversky and Kahneman (1981) involves participants making a decision between two programs to combat a disease. Half of the participants were given the following options and asked which program they would prefer:

> Program A is adopted, 200 people will be saved.
>
> Program B is adopted, there is 1/3 probability that 600 people will be saved, and 2/3 probability that no people will be saved.

Out of the people that receive this set of programs, 72 percent chose Program A and 28 percent chose Program B. The difference between the two conditions in which the programs are laid out is whether the solutions are equated with positive or negative results. The above program options are discussed in terms of how many people's lives would be saved. The other half of the sample was given the same program options, but the frame is in terms of how many people are going to die. The second group was asked to make a preference based on the following two programs.

> Program C is adopted 400 people will die.
>
> Program D is adopted, there is a 1/3 probability that nobody will die, and 2/3 probability that 600 people will die.

For this second condition, 22 percent chose Program C and 78 percent chose Program D. Although Program A and C are equivalent and B and D are the same, the majority chose

program A in the gain frame and D in the loss frame. Tversky and Kahneman (1981)

argue that this change in policy preference, going from risk aversion in the gain frame to

risk seeking in the loss frame is due to the S-shaped value curve discussed above.

The risky choice frame from prospect theory has been used to depict the

equivalency frame in research where separate conditions have as little content differences

as possible (Druckman 2001c; Druckman and McDermott 2008). In addition, prospect

theory's argument that people are not rational and wording effects alter preferences in an

irrational way has been demonstrated in framing research (e.g. Druckman2004; Iyengar

1991; Nelson, Oxley and Clawson 1997). Although prospect theory lacks the contextual

factors often regarded as necessary when studying framing (Druckman 2001c), it allows

us to strictly look at how wording induces people to change their preferences in a way

that is not questioned by compounding factors, such as previous beliefs that are inevitable

when studying politics. By taking away all contextual factors and looking at how simply

redefining a problem through a different set of words, it makes it possible to look at the

raw effects and whether or not individuals differ or if framing effects are more universal.

Framing in political science takes the notion from prospect theory that words alter a

person's perspective changes, and ultimately changing their preferences.

A frame connects, by constructing perceptions of reality, the individual and the

social world (Gamson 1989; Edelman 1993; Nelson, Oxley and Clawson 1997). In an

attempt to bring definitions from research on framing to a cumulative understanding,

Entman (1993, 52) argues that the composition of a frame defines problems, diagnoses

causes, makes moral judgments, and suggests remedies. Edelman's (1993, 232)

characterization of the social world being a "kaleidoscope of potential realities,"

emphasizes how the composition of a frame creates an interaction between a message and perception. Preferences are based on how one views the world. Therefore, each time the message alters the perception of the political world a different preference is potentially constructed from the context portrayed in the frame. Large effects of opinion change have been found as a result of exposure to frames (e.g. Iyengar 1991; Nelson, Clawson and Oxley 1997).

Although others have identified frames in a different light (Iyengar 1991; Levin, Johnson, and Gaeth 1998), two types of frames are generally discussed in the social science literature. These two types include "emphasis" framing where there is significant differences in what is in a frame (see Druckman 2001b) and "equivalency" frames where there are minimal differences between frames (see Druckman 2001a). Prospect theory by Tversky and Kahneman (1981; 1987; Kahneman and Tversky 1979; 1986; Quattrone and Tversky 1988) is often included in the equivalency frame category given that the choices are offered as logically equivalent (Druckman 2004). Emphasis framing, on the other hand, uses two arguments that highlight a different constructs to induce a preference change. The classic example of emphasis framing comes from the experiment by Nelson, Oxley, and Clawson (1997) where people were more likely to approve of a Ku Klux Klan rally when it was framed as a first amendment right and less likely to support the rally if they were exposed to the issue within a social order frame.

Several models emphasize the structure of how people's preferences are organized into cognitive connections between different concepts (e.g. Kellstedt 2005). The initial preference is referenced by the expectancy value model where the attitude is the summation of each attribute. These individual attributes hold either a positive or

negative connotation and has a specific level of importance that corresponds with the salient issue (e.g. Ajzen and Fishbein 1980; Nelson, Oxley and Clawson 1997). Therefore, where a person stands on an issue is dependent on both what attributes are connected to the issue and how much emphasis is placed on each. These preexisting cognitive structures create the baseline in which people then assess the options they have. It is important not to forget that Tversky and Kahneman (1981, 453) state that the decision is "controlled partly by the formulation of the problem and partly by the norms, habits, and personal characteristics of the decision-maker." Understanding how these aspects of a person, held within his/her personality shape how one interacts with frames. Personality traits may induce someone to be more inclined to accept what one hears while others might make them more critical.

How that cognitive structure is reorganized by way of information is the framing effect. Zaller (1992; Zaller and Feldman 1992) argues that frames increase accessibility of an issue dimension. The frame merely highlights one cognitive path that had previously been in the dark based on the political context at the time. Others argue that the effect is due to a change in the rank order of the values associated with the preference (Nelson, Oxley and Clawson 1997; Druckman, forthcoming; Chong and Druckman 2007) through the interaction with the substantial content found within the message (Jacoby 2000). These two models differ in the extent of change in the structure of the preference. Zaller (1992) believes a frame only calls up information while Nelson and colleagues offer an explanation that calls for an actual change in opinion by way of the information given. In either case, the way a person has organized the cognitive pathways is dependent on how he/she sees the world which is dependent on his/her personality.

Frames must have a communicator and a receiver. Research has demonstrated the effectiveness of frames arising from elites and politicians (Jacoby 2000; Nelson, Oxley, and Clawson 1997; Druckman, forthcoming; Wagner 2010), interest groups (Gerrity 2010; Terkildsen, Schnell, and Ling 1998), the media (Iyengar 1991; Kellstedt 2005), and the public (Entman 2003; Druckman and Nelson 2003). However, there is a lot of differences in what aspects of the receiver result in framing effects. Research has shown that high political knowledge does not mediate the framing effect (e.g. Druckman 2004), while others argue that sophistication does mediate the influential power of frames (Cobb and Kuklinski 1997). Iyengar (1991) and Cobb and Kuklinski (1997) find partisans are able to resist the effects of frames in some circumstances but not in others. In addition, people with prior attitudes toward the issue are influenced by frames (Erison, Lodge and Tabor 2007), while Slothuus (2008) and Tabor, Cann and Kucsova (2009) find a framing effect for only those with weak values associated with the issue prior to exposure to the frame.

In an attempt to find why at times, exposure leads to the framing effect, researchers look at frames in two ways: what leads people to change their preference based on a frame and what other consequences beyond a strict change of attitude frames have on a person. Druckman (2001b) uses the research of Lupia and McCubbins (1998) to investigate how credibility matters. In addition, other research has examined what occurs when competing frames are used in an experiment (Chong and Druckman 2007; Sniderman and Theriault 1999) and how deliberation with other people affects the likelihood of a framing effect (Druckman 2004). Much research has gone into how emotional states (Druckman and McDermott 2008) and emotional traits affect framing

(Mayer and Tormala 2010) and the effects of emotions brought up in the frame itself (DeSteno, et al. 2004). Research looking at different outcomes of frames include how emotions are molded differently depending on the frame (Gross and Brewer 2009; Gross and D'Ambrosio 2004) and how competing frames allow for clear distinction between the parties (Wagner 2007). As with any research endeavor, more findings lead to more questions. This continues to be the case with framing.

Using the assumptions of the previous models, people differ in whether or not anything in their cognitive structure changes, as evidenced in the mixed results of the receivers and the change (or lack of change) for each mediating factor researched. The problem may be that these psychological models do not take into account that people are different and how they approach political information and use it is different as well. Differences offer potential explanation to the long-standing quandary as to why cognitive structure change occurs for some but others are able to resist change and maintain their previous convictions.

Personality and Politics

Arguments of personality causing variance in political behavior can be found leading back to Adorno, et al. (1950) with the examination of the authoritarian personality and in the research of the personality of political leaders (Barber 1992; Winter 2003) and Lasswell's famous policy scientist of democracy (1951). However, these studies are limited in how much they look at a broad notion of personality. This criticism harped by Mondak (forthcoming; Mondak and Halperin 2008), was initially brought to the forefront by Sniderman (1975). Mondak argues that the problem continues today with people only looking at what personality factors suit their current research

rather than taking a holistic approach to how personality creates variance in political behavior and attitudes.

Recent work has devoted much of what is known about psychology to understanding ideology, including Jost et al.'s (2003) meta-analysis of the psychological variables that predict conservatism. In addition, ideology differs based on personal values between conservatives and liberals (Caprara et al. 2006), use of personal morality organization based on moral foundations theory (Graham, Haidt, and Nosek 2009). Jost (2003) offers examples from numerous studies that outline differences between conservatives and liberals from his and colleagues work, ranging from cleanliness to depression. Block and Block (2006) have found that these personality differences related to ideology do not emerge in adulthood, but far before one ever identifies as conservative /liberal, but while in preschool. Alford, Funk, and Hibbing (2005) take the concept farther stating that ideology goes back to genetics. Mondak (forthcoming) argues for the relationship between this genetic finding by Alford and colleagues to be one connected by personality.

The Trait Approach and the Five Factor Model in Politics

As outlined by Sniderman (1975; Mondak and Halperin 2008), the field of political psychology is not at total fault in its inability to have a coherent approach to psychological traits. However, this has been able to change based on the field of psychology and its ability to agree (at least to a large degree) on the presence of five factors that are able to describe a broad range of personality in individuals that lead to observable behavior that is stable over time (McCrae and Costa 1990) and between

cultures (De Raad et al. 1988). A continued presence of searching for an understanding

behind ideology has been prominent in the research concerning the Big Five in politics.

Results concerning the connection between personality and ideology in the mass

public have been unable to apply each personality factor to a specific ideological or

partisan category (Alford and Hibbing 2007; Mehabrian 1996; Mondak and Halperin

2008) with better findings found for an Italian sample population by Caprara et al.

(2006). In addition variance between the same personality traits held by blacks and white

reflects differences in ideology (Gerber et al. 2010).

Moving beyond the connection of ideology and personality, Mondak and Halperin

(2008) examine the relationship between the Big Five and numerous items concerning

political participation, attitudes and predispositions, and information and opinionation.

The findings from this study indicate that the main predictors in political engagement are

extroversion and agreeableness. Attitudes and predispositions are highly connected to the

person's level of conscientiousness and openness to new experiences. Last, information

and opinionation is connected to openness the most, with extroversion and

conscientiousness also exerting influence. Looking specifically at the amount of opinions

held on political topics, extroversion increases the number of opinions with openness

increasing them the most and neuroticism decreasing the number of opinions.

However, there is not always a direct relationship between personality and

political behavior. Although it is quite probable that there is a different "political

temperament" not explained by personality (Alford and Hibbing 2007), perhaps the

answer is that there are other factors that connect with personality that end in the

behavior outcome studied. Increasing the nuance and understanding how personality

works with civic engagement by looking at the antecedents to behavior (Mondak et al.

2010) and component attitudes (Gerber et al. 2010) allow for more understanding of how

personality is connected to behavior. The findings by Mondak et al. (2010) indicates that

extroversion increases engagement only for those activities that are social. When

somebody is low on the agreeableness scale but has a larger network size, they are more

prone to discuss politics with people of different viewpoints than those found to be high

in agreeableness. In addition, only when the importance of a campaign activity is seen as

important, does conscientiousness increase the level of participation. In addition, when

political attitudes are broken down into economic and social elements, Gerber et al.

(2010) finds stronger results linking personality and ideological preferences – to the point

that the Big Five is just as significant an indicator of ideology as education and or

income. Lastly, Mondak (forthcoming) provides a reason for the findings by Hibbing,

Theiss-Morse and Whitaker (2009) as to why a portion of the population would prefer

quick action to deliberation by Congress by interacting personality with demographic

variables of age and sex. These findings indicate the complexity of the interaction

between the person and the environment rather than a simple relationship that is easy to

understand.

The model proposed by Mondak et al. (2010) emphasizes relationships involving

biological forces that are involved with personality, environment and other factors

leading to the political behavior. Also, as previously reported, Tversky and Kahnemnan

(1981) accept individual differences lead to the different decisions. The connection

between the environment, in this case the frame, and the person' s movement from the

baseline, or their personality and biology is the piece of the puzzle not quite understood at this point.

<div align="center">The Big Five</div>

So what specifically constitutes the Big Five and where did it come from? The beginning of looking at traits with the use of everyday language was initiated with Allport and Odbert (1936) in order to create a taxonomy in which to categorize people. Using the dictionary as a source of terms used to describe individuals, Allport and Odbert (1936) organized words that could be used to describe people into four categories: traits, states, evaluations of behavior, and physical abilities and likenesses. The lexical approach began under these two researchers with their emphasis on the notion that descriptions and adjectives of people found in the natural language are the best way in which to understand differences in people. Research developed from there into what is known as the lexical approach to personality traits.

Early work on personality includes Cattell's (1945; Cattell, Eber, and Tatsuoka 1970) use of clusters and the reduced number of terms used to describe personality led to the creation of an index consisting of sixteen personality factors. Using the work of Cattell and colleagues as well as Fiske's (1949) factoring of Cattell's work, Tupes and Christal (1961) were able to verify the validity of five factors through the analysis of various sample populations within the air force. These five factors were given their original, standard names by Norman (1963). Extroversion or surgency, agreeableness, conscientiousness, emotional stability versus neuroticism, and culture were coined as the Big Five by Goldberg (1981) with his explanation of the broadness of these five factors. Work continued categorization of terms by Norman (1967) and constructions by

Goldberg (1990) allowed for the replication of the Big Five over various methods, including self and peer ratings.

Although Goldberg (1992) emphasized the lexical approach in his inventories, using single adjectives in his Trait Descriptive Adjectives (TDA), McCrae and Costa emphasize the questionnaire method in their five factor theory. Research by McCrae and Costa (1976) began with looking at neuroticism, extroversion and openness based on the work of Cattell et al. (1970) and eventually included items for agreeableness and conscientiousness in their final NEO Personality Inventory Revised (NEO-PI-R) (Costa and McCrae 1992). Mondak (forthcoming; also, McCrae and John 1992; John, Nauman, and Soto 2008) emphasizes that the differences behind Goldberg's lexical approach and McCrae and Costa's five factor theory is the extent to which the researchers' believe the taxonomy takes the field of personality. Where Goldberg (1993) believes strictly in terms of the Big Five as a taxonomical tool for personality psychologists, McCrae and Costa (2008) argue that the five factor model has the potential to becoming a full theory with more research based on the findings of stability across life and circumstance and the biological basis that seems to help mold a person's personality.

A third approach to measuring personality traits is the Big Five Inventory created by John and colleagues. John (1990) utilized categorization by different judges of 300 terms from the Adjective Check List, resulting in 112 terms that could be considered the "core" components of the five factors (John, Naumann, and Soto 2008). In comparisons of the three main measurement strategies, John, Naumann, and Soto (2008) find that similar results among the five factors present themselves when the three are compared.

The largest difference comes with openness, which is the most contested factor in general.

Each factor of the Big Five is discussed below. Each one has been used to explain a variety of behaviors in and out of the political world. Most of the work has been applied to job performance (e.g. Barrick and Mount 1991; Laursen, Paulkkinen, and Adams 2002; Huang, Chi and Laler 2005), social networks (e.g. Berkman et al. 2003; Robins et al. 2002), and risky behaviors (e.g. Malouff, Thorsteinsson and Schutte 2006; Laursen, Pulkkinen and Adams 2002; Bogg and Roberts 1991). Each description consists of adjectives and elements from several different conceptualizations of the five factor model. As discussed earlier, there are differences between individual researchers in regard to what the exact computation of each factor is, but there is also considerable agreement. The following focuses on the agreement between the numerous researchers on what each factor consists and the expected effect each will have on altering a person's preference based on exposure to a frame.

Extroversion

Extroversion usually involves adjectives including talkativeness, energy level and assertiveness (John, Naumann, and Soto 2008) and includes the facets of warmth, excitement seeking, and positive emotionality (Costa and McCrae 1995) with inventories using items such as assertiveness, excitement seeking, and activity (McCrae and John 1992). Extroversion has been found to increase civic participation and political involvement (Gerber et al. 2010; Mondak et al. 2010; Mondak and Halperin 2008).

Literature on extroversion finds that the trait is connected to participation in politics, but there is no literature that would direct whether it is associated with a

preference change based on framing effects. Levin et al. (2002) finds that extroversion does not explain variance in the framing effect they investigate. Heinström (2003) finds a lower level of confirmation bias in information search tasks for those high in extroversion. Therefore, extroversion may lead to higher amounts of exposure to new frames. In addition, Mondak and Halperin (2008) find when people score higher on extroversion, they also have more opinions on things. Exposure to many new frames may create the heightened number of opinions. However, Mondak and Halperin (2008) do not study the stability of these opinions or where they come from. Therefore, although high extroverts may have many opinions on political issues, whether they are more likely to be influenced by the many frames they are exposed is unclear. Therefore, there is no direction for extroversion hypothesized in this thesis.

Agreeableness

The historical disagreement on what constitutes agreeableness is outlined in Digman (1990) and has much to do with how narrow/broad other dimensions are defined (McCrae and John (1992). For example, if warmth is considered a part of extroversion, it is not also a component of agreeableness but if warmth is absent in a researcher's conceptualization of extroversion, warmth becomes a characteristic of agreeableness. Facets of agreeableness outlined by Costa and McCrae (1995) include trust, altruism, compliance, modesty, tendermindedness, and straightforwardness. John and Strivastava (1999) conceptually define agreeableness as one with high scores having a prosocial disposition and having a common good approach to their behavior. Other research has used terms including generosity and empathy (John, Naumann, and Soto 2008). As

described by Mondak (forthcoming), the literature on agreeableness emphasizes the interpersonal relationship context of the trait.

Recent work on information and personality traits has found a connection between higher levels of agreeableness and lower levels of opinion, attention and discussion of politics (Mondak and Halperin 2008). Additionally, individuals who have high levels of agreeableness tend to be less likely to read novels and foreign literature or watch cultural programs (Kraaykamp and Eijck 2005). In addition, Heinström (2003) found that people with low levels of agreeableness engaged in more critical thinking and Levin et al. (2002) find that agreeableness leads to preference shifts in prospect theory. However, these same agreeable individuals also found it difficult to determine the relevancy of information. The trusting nature of individuals with high scores of agreeableness induces them to be likely to accept what they see/hear as valid. This point is also emphasized in the inability of agreeable individuals to distinguish valuable information from the invaluable. Therefore, agreeableness allows for people to believe information that may not be credible and not know how to distinguish context that is not credible from what is. These aspects of agreeableness will result in a preference change between the conditions.

Conscientiousness

Tension between researchers on conscientiousness rivals that of agreeableness, with some arguing the two should be collapsed and other arguments concerning the amount of ambiguity associated with the trait (Digman 1990) and the close connection to each other (McCrae and John 1992). John and Srivastava (1999) conceptualize conscientiousness as an impulse control of behavior that makes a person goal and task

oriented. Facets of the NEO-PI-R for conscientiousness include deliberation, self-discipline, order, dutifulness, competence, and achievement striving (Costa and McCrae 1995). Those high in conscientiousness are thought to be the good in contrast to the evil (McCrae and John 1992).

In terms of information, conscientiousness has been found to lead to changing preferences in accordance with prospect theory. In addition, Mondak and Halperin (2008) find that reported levels of news viewing discussion of politics, and number of opinions increase for those that are high in conscientiousness, but the interviewers rated the same people as lower in knowledge, interest and information on politics. Kraaykamp and Eijck (2005) find conscientious people choose romance books over literature and Heinström (2003) finds that they choose information with a high confirmation bias while those low on the trait have a hard time distinguishing between information that is relevant and not. The findings and the psychological conceptualizations on conscientiousness support the notion that their order and deliberation and self control leads to the resistance of a framing effect.

Neuroticism

The literature is more coherent in what researchers describe to be neuroticism or emotional stability, its opposite (McCrae and John 1992). Costa and McCrae (1995) use the facets of anxiety, angry hostility, depression, self-consciousness, impulsiveness, and vulnerability. These fit well into John and Srivastava's (1999) definition as negative emotionality, nervousness, and high levels of tension. Opposing these concepts are feelings of calm and relaxation. Based on the above research, those found to be higher on

the neurotic scale are less able to keep tabs on negative feelings and thoughts of

questioning themselves intruding on their thought process.

Levin et al. (2002) found preference change for those scoring high in neuroticism.

In addition, Mondak and Halperin (2008) find emotional stable individuals to have less

opinions, knowledge, and to be involved in political discussions. Neurotic individuals

are also less likely to know what information is relevant for the task at hand (Heinström

2003) and more likely to read romance novels rather than foreign or literary novels and

erotic shows rather than cultural or informative programs (Kraaykamp and Eijck 2005).

The self conscious factor of neurotics possibly leads them to accept what they are told

rather than what they think by not fully believing in one's own attitudes. In addition, the

potential anxiety that is created by not agreeing with what information they come into

contact most likely lead to a those high on the neuroticism scale to have a preference

change between framing conditions.

Openness to Experience

The fifth factor was originally labeled culture in the studies of Norman (1963) and

Tupes and Cristal (1961). Others have used the category intellect also to describe the

trait (e.g. Digman and Takemoto-Chock 1981). Factor V has since been labeled openness

with the notion that it is broader than just culture and intellect (e.g. McCrae 1996).

Therefore, there is still a debate as to what the last factor entails. John, Naumann, and

Soto (2008, 120) define openness as "the breadth, depth, originality, and complexity of

an individual's mental and experiential life." John and Srivastava (1999) contend that the

range of the fifth factor is pure intellect to rebelliousness once personality inventories are

taken to other cultures. McCrae and John (1992, 197-8) emphasize the point, although

the trait has been labeled by many researchers as intellect, it involves such things as unconventional values, an appreciation of the arts, the need for varying experiences from values to ideas to fantasies. Therefore, it should be understood that IQ does not correlate with the fifth factor and it is not a measure of actual intelligence.

The facets for openness, used by the NEO-PI-R, are fantasy, aesthetics, feelings, actions, ideas, and values (Cost and McCrae 1995). In addition, adjectives associated with the factor are curious, wide interests, insightful, introspective, and imaginative (McCrae and John, 1992) and openness holds the verbal labels of originality and open-mindedness (John, Naumann, and Soto 2008). In their research on personality types and media consumption, Kraaykamp and Eijck (2005) find that people with higher scores on openness are more likely to read intellectually stimulating books and it is less probable that they read romantic novels. In addition, the study finds that openness isassociated with watching cultural and informative television and is negatively associated with watching soap operas. Information search research by Heinström (2003) finds those scoring higher in openness are less likely to have confirmation biases define their search, be more critical of information, and be more likely to try and gain new information from their information search.

Using openness as an independent variable on information and number of opinions on political issues, Mondak and Halperin (2008) find openness to be a very significant predictor of the level of knowledge, interest, and discussion as well as the number of opinions held by people. In addition, openness was found to account for preference changes within the prospect theory frame by Levin et al. (2002). Openness

appears to be the most significant variable in information based findings using the trait approach (Mondak and Halperin 2008; Kraaykamp and Eijck 2005).

Based on the findings by Heinstöm (2003), I take a split with Levin et al (2002) with the hypothesis that people high in openness will be less likely to follow the framing effect. Although openness predicts a willingness to look for different information and enjoy new experiences, they also seem to be critical of what information they are exposed and enjoy intellectually stimulating material, most likely because they enjoy being challenged. Those that are more likely to succumb to a framing effect are not critically looking at the information or using communications as an intellectually stimulating and challenging experience. Therefore, those high in openness will be more likely to not have a preference change between framing conditions.

<center>Personality as a Typology</center>

A less researched perspective on personality is the typology where the emphasis lies on the person as a combination of traits rather than individual trait variables (Robins et al. 1998). The typological method was first utilized in the work of Block (1971) where five categories were found for males and seven for females. The three typologies that have been replicated from Block's original study (some with different category titles) are resilient, undercontrolling, and overcontrolling (e.g. Robins et al. 1996; Robins et al. 1998; Asendorpf, et al. 2001; Raamstedt et al. 2004; York and John 1996). Cluster analysis or inverse factor analysis is typically used in these studies to determine the similarities in people to create groups that differ between each other.

Based on the work of Block (1971), resilients can be described as insightful, socially perceptive, and internally consistent (143-4). Overcontrollers tend to be self-

defensive, distrustful, uncomfortable with uncertainty, brittle, fearful, and submissive

(162). Last, undercontrollers are characterized as being moody, changeable, irritable, and

"skilled in techniques of imaginative play" (181). These categories have been found to

correlate with five factor models of personality (e.g. Robins et al. 1996; York and John

1996; Robins et al. 1996; Asendorpf et al. 2001). Figure 2 demonstrates how the five

traits fit into the different typologies.

Personality Trait	Resilients	Overcontrolled	Undercontrolled
Extroversion	High	Low	Medium
Agreeableness	High	High	Low
Conscientiousness	High	Medium	Low
Neuroticism	Low	High	High
Openness	High	Medium	Low

Figure 2. Trait Levels for 3 Typologies
Source. Robins, et al. (1998, 198)

Little research has used the personality typologies to understand specific

behavior. Robins et al. (1996) do find that typologies are associated with intelligence and

school performance conduct, as well as psychopathologies. A majority of the research

concerns with validating samples across different dimensions, such as across time (Caspi

and Silva 1995), race (Robins et al. 1996), and gender (York and John 1996; Pulkinnen

1996).

People consist of different levels of each trait, not dominated by one. By looking

at typologies, the research can determine if sets of traits can overcome the effects of one.

For instance, if neuroticism is associated with changing preferences and

conscientiousness with resisting framing effects, as hypothesized, what happens when the

two are intermingled in one person? Looking at typologies allows research to understand

how framing effects work in a person by looking at common patterns and understanding

how each trait affects another. Individual trait research on the other hand only looks at the effects of each trait – we might find that neuroticism increases the likelihood of a preference change and conscientiousness reduces it. However, people might have high levels of both. Typologies allow research to determine which trait wins out the framing war.

Based on the dearth of literature, hypotheses on typologies and framing effects are not based on the strength of research seen in the above analysis of individual traits. However, based on how Block (1971) and current research describing the categories, one would expect resilients to be less likely to change their preference due to the framing effect, undercontrollers to be most likely to change and overcontollers to be in the middle, on the side of less likely to succumb to a frame.

<p align="center">Data and Summary of Hypotheses</p>

The analysis is derived from data coming from a detailed survey, taking approximately 30 to 40 minutes, answered by U.S. adult twins enrolled in the Minnesota Twin Family Registry. The survey asked a wide variety of questions concerning social and political issues, values, and behaviors. There are approximately 8,000 twin pairs born from 1936 to 1955 in Minnesota that were recruited from birth records. Lykken, et al. (1990) has detailed analysis on the registry following the majority of the recruitment, from 1983 to 1990 and Krueger and Johnson (2002) discuss the registry and current research findings using it. Although this is a twin study that normally is used for heritability studies, it will be used here for an individual analysis because it both measures traits with the Big Five Inventory and includes a framing experiment based on the work of Kahneman and Tversky.

After initial responding, 1,202 individuals complete the survey in 2008. An additional 200 participants were recruited in 2009 in an attempt to increase the numbers of dizygotic twin males. All participants were either monozygotic twins or dyzogotic twins of the same gender. The final number of cases within the data set is 1,349. Roughly one-third of the participants identify themselves as liberal, one-third moderates, and one-third as conservative. The vast majority of the participants are white, 98.6 percent. The sample population is relatively well educated with just under a quarter of the participants having graduated college and another quarter having some college or an Associated Degree. In addition, the mean income is between $60,000 and $80,000. Last, 66 percent of the respondents are female.

Collection of the data was overseen by John Hibbing and Kevin Smith of the University of Nebraska-Lincoln and implemented by the University of Minnesota. The survey was completed for most of the participants (93 of the original 1,202 completed a paper version due to limited internet activity). Each registered twin was sent an invitation by mail. All respondents were offered $35 for participating. The cooperation rate was 61 percent.

The hypotheses developed from the above literature are tested through two models utilizing the Minnesota Twin Study data. The first set of hypotheses involves looking at data from the traditional five factor model with a variable perspective. The second model comes from the perspective of the person as a whole, trait typology. By using the odds ratios coming from the logistic regression models, the study is able to understand the likelihood the personality trait will affect a preference change between the gain and loss frame conditions. The models will allow us to understand how a person

with a high level of each trait will act against how one low in each specific trait will act. Additional logistic models are included to determine if personality traits and typologies affect whether someone is more likely to choose the risky option in the initial gain or loss option set he/she received.

Higher scores on agreeableness and neuroticism are expected to lead to a preference change between opting for the sure and risky option between the conditions. Conscientiousness and openness to experiences are expected to lead to a person being less likely to have a preference change. Finally extroversion, although associated with exposure to information is not expected to explain variance in preference change in this study.

Rather than looking at traits individually and comparing them in standard x changes y means, the typology approach produces groups of people which must be compared to each other. The second set of hypotheses deals with the groups created by the three typologies based on the work of Block (1971) and the application of those typologies to the five factor models (e.g. Robins et al. 1998; Asendorpf et al. 2001). Both, the descriptions of the groups and the trait make-up based on the hypotheses above are used to determine the hypotheses. The typology characterized as resilients should display a strong unlikelihood to change preference compared to the other two typologies based on the descriptions of them being internally consistent (Block 1971) and the high levels of conscientiousness and openness and low levels of neuroticism that is associated with the group (Robins et al. 1998). Overcontrollers are also expected to not indicate a preference change compared to undercontrollers based on the depictions of them as being fearful and distrustful (Block 1971) and their high levels of agreeableness and

neuroticism moderated by the mid levels of conscientiousness and openness. Last, undercontrollers should be more likely than both of the other typologies to change their preference based on the characterization by Block (1971) as being changeable and their high level of neuroticism and low levels of conscientiousness and openness (Robins et al. 1998).

The dependent variable, based on two prospect theory questions within the survey, is a dichotomous variable labeled 'preference change,' coded as 1 if there was not a change between option sets and "0" if someone went from choosing the sure option on one problem to the risky option on the next or vice versa. Each participant was given 2 separate option sets with two choices and were instructed to indicate his/her preference on each set individually. One condition held two options, where both choices were framed as gains. These options were:

Option 1. 80 percent chance of *gaining* $4,000.

Option 2. 100 percent chance of *gaining* $3,000.

The second condition the participants were exposed to presented the two options in a loss frame and were instructed to make a preference between the following two options.

Option 1. 80 percent chance of *losing* $4,000.

Option 2. 100 percent chance of *losing* $3,000.

At the beginning of the survey each participant was randomly assigned to get the gain condition first or the loss options first. When randomly assigned to the gain condition first they viewed the first set of options shown above immediately followed by the second set given above. If the participant was assigned to receive the loss condition first, they

made the preference for the second set of options and then were instructed to make a choice for the second set immediately afterwards.

For each model, preference change is the dependent variable used indicating whether the person alternated from the risky option to the sure option and vice versa in the above two problems. Frequency data shows that 27.8 percent of the participants did not change their preference between the two items and 72.2 percent did change their preference.

The independent variables are individual personality traits taken from the Big Five Inventory (BFI) (e.g. John and Srivastava 1999). The BFI consists of 44 likert-scaled items asking participants if a short phrase consisting of some context with the target adjective is descriptive of themself. Participants indicate whether they agree/disagree on a five-point scale based on the question, "I see Myself as someone who…" The scales for the five traits consist of eight to ten items. See Appendix A for the full inventory.

Controls added to the model with the personality include gender, income, education, and whether the person received the loss frame first. Race is not used as a control due to the essential lack of variance in the sample. Income is used based on the notion that the two prospect theory items involve getting and losing money. Therefore a person at the lower end of the socioeconomic scale may see the value of the money more important than one that has a higher income. Education is used with the notion that more schooling is theoretically supposed to instill more analytic thinking within a person. In addition, gender is controlled for because females are thought to be more risk averse than men. Last, a dummy variable indicating which frame the participant received first is

included to ensure that any explained variance is not due to a question ordering

phenomena. Information on how each control variable is measured and coded is found in

Appendix B.

<div align="center">Method</div>

The main component of the analysis is binary logistic regression analysis with the

use of two separate models. Prior to running regressions, the data was cleaned and

scaled. The first model utilizes scales made from the respondents' logged BFI item

scores. The second model uses the raw score scales to look at personality typologies.

Below describes first how the scales were created and how the scales were clustered into

three typologies prior to moving to the models.

In order to lower the level of skewedness occurring from social desirability

factors, the scales are constructed from both raw and logged items as described by

Mondak et al. (2010). Appendix C illustrates the correlations between each trait on the

raw scale and logged scale scores. The correlations indicate that the logged scores have

properly identified the original scores with correlations all above .97. To create the

logged score scales the items were all recoded so that 1 indicates the highest value for the

trait and 5 the lowest. Second, the natural log of each item was taken and the items were

re-coded to be between 0 and 1 with 1 being the highest value for the trait and 0 being the

lowest. The scales were then constructed by averaging the logged items for each,

corresponding trait. Properties of the scale in Table 1 and Table 2 show correlations

between the scales indicating that the two are measuring different concepts and the

Cronbach's alpha scores. The Cronbach scores are well within the range found

commonly in the U.S. and Canada, between .75 and .90 (John and Srivastava 1999).

Table 1. Five Factor Scale Correlations

	Extroversion	Agreeableness	Conscientiousness	Neuroticism	Openness
Extroversion	1				
Agreeableness	0.233	1			
Conscientiousness	0.269	0.399	1		
Neuroticism	-0.284	-0.316	-0.273	1	
Openness	0.367	0.135	0.153	-0.146	1

All coefficients statistically significantp< .001.

Table 2. Scale Reliability Statistics

Trait Factor	Scale mean (s.d.)	Cronbach's alpha	Number of Cases
Extroversion	8.394 (2.897)	0.866	1349
Agreeableness	4.243 (2.545)	0.779	1349
Conscientiousness	4.093 (2.600)	0.796	1349
Neuroticism	9.115 (2.272)	0.828	1349
Openness	8.289 (2.989)	0.838	1349

In addition, factor analysis was performed on the 44 logged items to determine if each item loaded on the factors found by previous research on the BFI (e.g. John, Naumann, and Soto 2008). The factor analysis resulted in 8, rather than 5 factors, indicating that all items for extroversion, neuroticism, and agreeableness factor as previously reported. However, the analysis indicates that three of the openness items load on a 6th factor and one on an 8th factor and 2 of the conscientiousness items load onto a 7th factor. The separate loading of the openness is not terribly surprising based on the research suggesting somewhat of a disagreement on the fifth factor. Appendix D contains the factor analysis loadings. Because of these, analysis was run on both the original logged item scales and with scales missing these six variables in hopes to increase the power of the models.

In order to examine whether it is a specific combination of personality traits held by a person, or his/her trait typology, that determines whether a preference change occurs as a result of framing, cluster analysis was performed on the raw scores. Clusters were derived from the procedure set out in the personality typology studies (e.g. Robins et al. 1996; Asendorpf 2001). First, the Ward, hierarchical clustering was applied to the entire data set using the raw trait scales. The analysis initially places every case into its own category. With each iteration, the two clusters with the closest squared Euclidean distance are combined. The three cluster category based on findings by research on typology is used for the second classification. Second, a K-sort, non-hierarchical cluster method was used to classify the cases based on the proximity of Euclidean centers. Using K-sort allows for the more optimal once the Ward's procedure is used (Asendorpf et al. 2001). Linear discriminate function was used to understand what the personality typologies looked like (and described below) and to validate the original clusters.

The last set of models are based on the clusters formed in the procedure iterated above. Two dummy variables are created as independent variables so that the coefficients represent the comparison of one group to another. One dummy variable is coded so that 1 is the first cluster and represents the difference between groups one and 3 on preference change. The other dummy variable created is coded that a 1 represents group 2. Therefore, the coefficient explains the difference between group 2 and 3 in terms of preference change.

<div align="center">Results</div>

Initial correlations do not show any significance for preference change except openness to experience does come close for a one-tailed test at .132. Table 3 shows the

correlations for preference reversal and the five personality traits. Although the

correlations do not show significance, binary regression was computed to determine if

there was something to be learned.

Table 3. Correlations*

	Preference Reversal
Extroversion	0.002
Agreeableness	0.048
Conscientiousness	0.002
Neuroticism	-0.026
Openness	0.041

*None of the correlations reach significance at the .1 level.

Due to the dichotomous nature of the dependent variable, binary logistic

regression was used resulting in logged odds for each personality trait and the controls.

These logged odds were transformed into odds ratios by subtracting one from the logged

odds. By doing so, one is able to understand the substantive likelihood high versus low

levels of a personality trait affects whether a person will change his/her preference

between gain and loss conditions.

Table 4 presents the results of two logistic regression analyses. The first model

uses all 44 logged items in the creation the Big Five variable scales; the second model

takes out the six variables that did not load on the traditional five factors. Both models

include the constant variables. As expected from the correlation results, personality is

not shown to explain preference change between the two conditions. Both models

indicate agreeableness as being the only independent variable significant at the .10 level.

In addition, the dummy variable for sequence of frames (where 1 indicates the loss frame

was given first), is significant at .000. The sequence variable indicates that people

receiving the loss frame first are 54% less likely to have a preference change than those who did not receive the loss frame first. Also, the presence of high levels of agreeableness increases the likelihood of making a preference change over those that do not score high on agreeableness.

When it comes to preference change, receiving the loss frame first followed by the gain frame, there is less of a preference change compared to those who did not receive the gain frame first. In each condition, the person makes a preference and keeps with it, signifying the impression that being exposed to a loss frame has on a person. Viewing the loss frame first induces people to not completely adhere to prospect theory expectations and act in more rational ways. Those high on agreeableness are more likely to go from the gain to loss frame and experiencing a change in options from the sure to risky or vice versa. This is an indication that those high on agreeableness are following what is expected from prospect theory by changing preferences and acting in an irrational way.

Table 4. Logistic Regression Results for Preference Change and BFI Scales

DV: Preference Change=1

	Full Item Scales		Scales Based on Factor Loadings	
	Exp β	Odds	Exp β	Odds
Extroversion	0.863	-13.7%	0.925	-7.5%
Agreeableness	2.162*	116.0%	2.158*	115.8%
Conscientiousness	0.603	-39.0%	1.379	37.9%
Neuroticism	1.092	9.2%	1.073	7.3%
Openness	1.311	31.1%	0.972	-2.8%
Gender	1.09	9.0%	1.09	9.0%
Education	1.018	1.8%	1.024	2.4%
Income	1.049	4.9%	1.049	4.9%
Sequence Dummy	0.451**	-54.9%	0.451**	-54.9%
Constant	2.408*		1.579	
Nagelkerke R^2	0.052		0.052	
N	1013		1013	

Notes: *p<.10; **p<.001

The second way in which one may look at personality is by person as a mixture of personality traits rather than by a trait alone. The clusters are first compared to the previous research in personality typology and five factor models (e.g.Robins et al. 1998; Asendorpf 2001). Based on these two functions, cluster one consists of people which are extrememely low on conscientiousness and agreeableness and somewhat high on extroversion and somewhat low on neuroticism. Cluster 2 consists of individuals holding lower values for neuroticism and somewhat higher levels of extroversion and hovers slightly higher than the midline for conscientiousness, agreeableness, and openness, which is similar to the Resilient category. The traits correlate in same direction as previous research but not the same intensity. However, the lower values seen here were found in one of the child studies of Asendorpf (2001). The last cluster consists of those low in extroversion and high in neuroticism with somewhat higher levels than the middle

for conscientiousness, agreeableness, and openness. This is very similar to the previous research findings for the overcontrolled personality type which is associated with low extroversion, neuroticism, and agreeableness scores as well as middle levels of conscientiousness and openness scores.

The second model consists of a logistic regression model with the dichotomous preference change variable as the dependent variable. However, the independent variables are the three clusters in order to determine if the variance in the framing effect can be explained by a pattern of personality traits that are visible in the sample population. The results in Table 5 demonstrate that none of the personality typologies are significant in understanding preference change due to personality type. The only significant variable is the sequence dummy indicating that those receiving the loss frame first are 54% less likely than those who do not get this condition first to have a preference change between the two sets. The typology model demonstrates the similarity in both models as having the same control variable dominating the framing scene. It also leads to the questioning of agreeableness being a dominant factor in preference change due to framing. Where it is significant when looking at traits one-on-one, it loses its power when looked at in a combination of traits.

Table 5. Logistic Regression Results for
Preference Change and Personality
DV: Preference Change=1

	Exp β	Odds
Cluster 1	0.891	-10.90%
Cluster 2	1.073	7.30%
Gender	1.114	11.40%
Education	1.026	2.60%
Income	1.034	3.40%
Sequence Dummy	0.452**	-54.80%
Constant	2.981	
Nagelkerke R^2	.047**	
N	1013	

Notes: **p<.001

With the pronounced effect of the Sequence Dummy variable, the next step is to understand what the effect is. Does the pronounced effect make people more risky in gain or loss framed problem options? Also, does the effect operate in the same direction as what prospect theory informs us? Under prospect theory, people are more likely to choose the sure option when the options are presented as gains and more likely to opt for the risky choice under the loss frame. In order to answer these questions, there are four additional logistic regression models provided below. The first two models in Tables 6 and 7 use the same Big Five Personality trait scales as Table 4 and the last two models use the personality typologies from Table 5 in Tables 8 and 9. In each of these models, the dependent variable has changed and now is the respondent's choice in the first set of options they encountered in the survey, the sure option (coded as 0 in the models) or the risky option (coded as 1 here) for all four models.

Each survey participant was randomly assigned to receive the options within a gain frame first or the options with the loss frame first. The previous models have combined these two conditions into one variable. However these last four models break

them back down to two separate conditions. Tables 6 and 8 consist of those participants receiving the loss frame first with the independent variables being the Big Five Scales and personality typology variables, respectively. Tables 7 and 9 consist of the participants who received the gain frame first with the independent variables being the Big Five Scales and personality typology scores, respectively.

Table 6. Logistic Regression Results for Risk Preferences and Receiving the Loss Frame First using the BFI Scale

DV: Risky OptionChosen=1

	Full Item Scales		Scales Based on Factor Loadings	
	Exp β	Odds	Exp β	Odds
Extroversion	1.035	3.5%	1.117	11.7%
Agreeableness	1.258	25.8%	1.215	21.5%
Conscientiousness	0.854	-14.6%	1.067	6.7%
Neuroticism	2.492	149.2%	2.545	154.5%
Openness	2.389	138.9%	0.71	-29.0%
Gender	1.663*	66.3%	1.684*	68.4%
Education	1.037	3.7%	1.05	5.0%
Income	1.073	7.3%	1.072	7.2%
Constant	0.523		0.823	
Nagelkerke R^2	0.036		0.033	
N	514		514	

Notes: *p<.05

Table 7. Logistic Regression Results for Risk Preferences and Receiving the Gain Frame First using the BFI Scale

DV: Risky OptionChosen=1

	Full Item Scales		Scales Based on Factor Loadings	
	Exp β	Odds	Exp β	Odds
Extroversion	0.614	-48.6%	0.587	-41.3%
Agreeableness	1.119	11.9%	1.047	4.7%
Conscientiousness	0.308	-69.2%	1.919	91.9%
Neuroticism	2.258	125.8%	2.229	122.9%
Openness	1.071	7.1%	0.997	-0.3%
Gender	1.052	5.2%	1.047	4.7%
Education	1.182	18.2%	1.188	18.8%
Income	1.342**	34.2%	1.337*	33.7%

Constant	0.016**		0.005***
Nagelkerke R^2		0.055	0.054
N		507	507

Notes: *p<.10; **p<.05;***p<.01

The logistic equation results demonstrate that none of the personality variables explain whether a person will respond as making the risky or sure choice when receiving the gain or loss frames first. However, two control variables are significant. When exposed to the gain frame first (Table 7), those with higher income levels are over thirty percent more likely to choose the risky option than lower income levels for both Big Five measurements, which goes against what is expected from prospect theory. However, this variable loses significance when the loss frame is given first. Instead, gender becomes the only significant predictor of risky choice. Table 6 demonstrates that women are about 66 percent more likely to choose the risky option when the loss frame is presented first in both Big Five scale measurements. This supports what is expected from prospect theory – when options are placed in a loss frame, people are more likely to choose the risky option. The final two tables present the same dependent variables with personality typologies and demonstrate the same statistical significant variables.

Discussion

Before moving on, two main problems must be actively discussed. The first is the sample. Because the data comes from a hereditary study, it is composed of only monozygotic and same sex dizygotic twins and not a random sample within the population as a whole. Second, the people within the sample only come from Minnesota and the frequencies demonstrate that it does not depict the general population. This is especially true for race, where less than 2 percent were not white. The notion that all 44

BFI items do not load onto the traditional 5 factors supports the idea that the sample is not representative of more random ones. These problems must be kept in mind when interpreting the results.

The second problem is that there is only one prospect theory question used for the analysis. With multiple items dealing with prospect theory, a better understanding of how people make choices would be available. A fuller understanding of whether and how preference change occurs may be more accessible with several different problem sets offering different preferences for each. Not only that there is one set of prospect theory items and framing theory more generally, but prospect theory is considered somewhat different than other types of frames (Levin et al. 1998; 2002). Equivalency framing has examples in the political world, for example the death tax versus the inheritance tax. However, frames often consist of more substantial content differences, such as how Iyengar (1991) describes news coverage as being episodic and dealing with the context of one event or thematic, emphasizing the underlying concepts of an event. Therefore, framing studies using prospect theory may result in different findings when other types of frames are used. Changes in content beyond one or two words (most likely used to induce emotion) or manner of information is likely to induce more variance than what is seen in prospect theory. The larger variance and nuances that are found in the real political world will allow research to better understand personality's role in the framing effect.

These two problems may have resulted in the inability of the study to replicate what Levin et al. (2002) did in terms of personality traits and risky framing effects. Where Levin and colleagues found a preference change in magnitude of choice between

risky and risk averse options, this study only found significance for agreeableness. Even when the models looked at one sided frame options, initial exposure to the gain or loss frame, none of the personality factors were found to be significant in understanding variance between those choosing the sure or risky option. However, Levin's (2002)study used a prospect theory item that was worded to make the issue close to them personally: what medical option would the person choose for their parents when faced with a serious cholesterol problem. In addition, the respondent had a choice on a scale of one to seven. Therefore, not only is there information on whether he/she changed preference, the researcher also has a change in magnitude even if the actual preference does not change. These smaller changes in magnitude may be more important to understand, because the research can begin to understand the turning points. To what degree does the frame have to push in order for it to change someone's preference? The study by Levin et al. (2002) were able to have a more precise measure of the dependent variable which may also lead to more reliable information.

Although there are the above problems, this thesis demonstrates that the BFI scale can be used to create similar cluster typologies found using other five factor models, such as the California Q Sort (York and John, 1992; Asendorpf et al. 2001; Robins et al. 1996) and the NEO-PI-R (Pulkkinen 1996; Asendorpf et al. 2001), both of which are much longer and more detailed inventories. Although it may make intuitive sense to look at a person's personality in its entirety, rather than the different trait scale variables individually, this study does not find that there is any value in doing so in the context of understanding prospect theory framing effects. If the above problems were addressed, the typological method may prove itself to be important to political scientists. People are

not made of one trait, but many (in similar) combinations. People are not the same as one

trait and each trait does not evenly affect a person. Based on personality typology

literature, there is promise in understanding a person through sets of traits. The above

research shows promise for at least an inquiry into the effects of typologies based on the

fact that they seem to have the same controlling dynamics as the trait models. More

emphasis on typologies may lead to an understanding of what traits win out when it

comes to the framing effect. The importance of trait typologies Mondak and colleagues

as well as Gerber and co-authors have been prevalent in recent studies on personality

traits and their influence on political variables. Mondak (2010; Mondak et al. 2010) has

looked at external influences that influence the connection between politics and such

things as political participation but none of the work concerning political behavior has

attempted to look at combinations of traits to determine their influence. The data here

suggests that solely looking at traits does not give a full picture of what is going on.

Agreeableness is found to be significant as a predictor of preference change when looked

at alone, but when put into a person-centered model, agreeableness falls back and none of

the models show significant results. Therefore, the power of agreeableness is contained

by other trait levels.

Part of the problem of working within the typology realm is that it is plagued by

many of the problems seen with work on the five factor models years ago (Robins et al.

1998) where researchers are talking past each other rather than working together to create

a set of consistent typologies and what they consist of in the general population. This is

evident from the different labels given to the factors. In addition, there is clearly less

research altogether of typologies than there is of the Big Five taxonomy. As more and

more research is done, the theoretical basis and understanding of how traits work together to create behavior will be much more influential. This thesis is only the beginning in understanding how personality, not only by using individual trait measures but with typologies as well, influences the framing effect.

Getting to the main finding of the study, agreeableness is the only personality trait, in the two models demonstrating a significant effect on preference change. Not only is it significant and in the proper direction according to the hypothesis, but it has a large effect at around 116 percent. This goes back to the trusting nature of those who score high on agreeableness (Costa and McCrae 1995) which may signify that they are not reflecting the context of the message beyond what is there – they trust what they are told. However, it is important to keep in mind that the level of statistical significance for agreeableness in both Table 4 and Table 5 is p<.10, suggesting caution in the interpretation of the external validity of these results.

The only other significant variable is the dummy variable used to indicate which set of problems the participant received first. When someone received the loss frame first, they were over 50 percent less likely to change their preferences. Once people were initially exposed to the negative frame, they continued to either choose the risky option or the sure option. This finding leads back to the research indicating the strength negative frames have on people (e.g. Druckman 2004; Erison, Lodge and Tabor 2007). The power of negative frames to influence the consistency of decision choices has important implications for those attempting to define an issue. Based on the current findings, if one can formulate a risky choice problem in a negative or loss light first, they may be able tomaintain a consistent level of preference for an issue for a certain amount of time.

Last, when attempting to understand whether the loss frame or gain frame induces people to make a sure or risky choice is explained by personality factors, none of the coefficients for the independent variables are significant. Control variables turn out to be the ones that matter in the initial preference and it is a separate variable different for the gain than the loss condition. The only variable that achieves significance in the gain frame is income. The logistic regression results for Table 7 and Table 9 show that people with higher income levels are less likely to make a choice supported by prospect theory by being more likely to choose the risky option in a gain framed problem. This may be an artifact of the amount of money in the problems ($3,000 and $4,000) not being as valuable to those that make more money. Second, with only looking at those who received the loss frame first, gender is the only significant variable in the equation. Women were found to be much more apt to choosing the risky option in the loss frame, which corresponds with the literature on choices in prospect theory, in Table 6 and Table 8. Therefore, personality cannot explain the willingness to take the risky option in gain or loss conditions.

With such little significance in explaining preferences and their changes through personality, one must ask what does make almost 80 percent of the people change their preference for a risky choice versus a sure one? Although the work of Tversky and Kahneman (1989; Kahneman and Tversky 1979) does not explicitly say so, their writing suggests that this is a human universal, which other research points to the possibility that it has been selected for at some point in our history based on the need to survive (McDermott, Fowler, and Smirnov 2008). In addition, research on neuroimaging suggests that when people go with the framing effect, only certain parts of the brain -

many of which deal with emotions - is aroused (DeMartino et al. 2006). This notion corresponds with the work of Druckman and McDermott (2008) who find that emotional variables influence the framing effect using prospect theory. With these studies in mind, and the multitude of other studies which find significance in emotions and attitude change (e.g. Mayer and Tormala 2010; Brader 2005; Gross and Brewer 1999). Preference change, with prospect theory, appears to not be explained by individual variance but as a universal phenomenon with the changing context is what causes the effect in its entirety.

This brings us to the last point, the lack of context in the study. Because this is a survey, the context of the frame is limited to two options dealing with money. Druckman (2001b; 2004) discusses the potential erroneous results that come out of equivalency framing studies, such as those using prospect theory frames. The problem with it is that reality is not reflected in making a choice between prospect theory options. For instance, would people change their preference if it was the government getting/losing money or what the government was going to do with the money gained or what they have to cut in order to accommodate the money lost? The answer is probably yes. The question then repeats itself. Is there a personality difference among those that do make a preference change and those that do not when these political factors are put into context?

This is the next step. Explaining framing effect variance cannot be understood without adding context. While the risk of losing/gaining money in a non-realistic option set creates somewhat of a universal change in people, personality traits and typologies may create significant difference when one must address confounding circumstances.

Personality research can extend what has already been looked at with framing studies and may help alleviate some of the controversies found in the literature. For instance, high agreeableness may create a large framing effect based on source cues because it creates higher levels of trusting in individuals. How information in frames is conveyed to people also might be a factor. With lengthy frames, those with low levels of conscientiousness or higher levels of neuroticism may not be able to weed out what is important and succumb to the framing effect based on the work of Heinström (2003) but may not when the frame is presented in a short and direct manner. These are only partial hypotheses that may come out of looking at frames with more political context. In developing full hypotheses on how personality traits may affect preferences tied to framing effects, it is important to look at how these personality traits interact with each other too. Source clues are likely to play a role in resisting framing effects for overcontrollers who tend to be distrustful (Block 1971). Using frames that depict the political world and previous framing literature opens the door for how personality may affect preference change.

Conclusion

The ease of preference change induced by frames can be traced back to Converse's (1964) conclusion that people do not have coherent beliefs that allow for coherent opinions. Although Converse's main argument deals with the ability to align one's beliefs on a political continuum identifiable by being conservative or liberal, it highlights the point of how frames are able to easily adjust a preference. People were found to be unable to place themselves on the same side of an issue on repeated

occasions. If there is no coherent opinion on political topics and arguments, it is quite easy for people to change preferences based on a frame.

Newer research also demonstrates how frames may potentially affect preference change. Mutz (2006) argues people are no longer having discussion with people of opposing viewpoints and the findings suggest that news sources use a partisan filter in the news (Baum and Groeling 2008), that people are aware of potential slants in the news and use them to make opinions (Turner 2007) and people's television habits are largely based on their previous political preferences (Prior 2007; Iyengar and Hahn 2009). These findings pooled together indicate that people are only being exposed to one set of frames which is dangerous according to Druckman's (2004) "double-edged sword" where confidence in a frame-based preference is heightened and group think becomes prominent.

The contemporary argument that people are able to expose themselves to one side and, limit exposure to opposing frames, and the more historical argument that people can change their stance on the issue because there is no coherent opinion poses strong evidence that frames potentially have a large effect on people's preferences. Frames can create opinion with either argument, one never interrupts a continuous set of way of thinking and the other creates preference changes relatively easily and quickly.

How people perceive the world is dependent on their personality – it causes someone to be trusting of information or critical of it; and it induces people to seek challenges to what they know or confirm their knowledge; it changes preferences and it maintains preferences in light of new information. Understanding how perceptions of the

political world are altered through frames will only help researchers to understand whether a "good" frame exists or it is contingent on an individual.

The thesis presented here attempts to understand how people react differently under prospect theory choices to which they were exposed in order to uncover whether preference change is mediated by personality or if it is common across all types of people. Findings presented here indicate agreeableness as the only personality variable causing variance in preference change. However, moving away from prospect theory and into the world of political rhetoric may change the results here.

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Appendix A Big Five Inventory

Here are a number of characteristics that may or may not apply to you. For example, do

you agree that you are someone who likes to spend time with others? Please write a

number next to each statement to indicate the extent to which you agree or disagree with

that statement.

Disagree Strongly	Disagree a Little	Neither Agree nor Disagree	Agree a Little	Agree Strongly
1	2	3	4	5

I see Myself as Someone Who...
___1. Is talkative
___2. Tends to find fault with others
___3. Does a thorough job
___4. Is depressed, blue
___5. Is original, comes up with new ideas
___6. Is reserved
___7. Is helpful and unselfish with others
___8. Can be somewhat careless
___9. Is relaxed, handles stress well
___10. Is curious about many different things
___11. Is full of energy
___12. Starts quarrels with others
___13. Is a reliable worker
___14. Can be tense
___15. Is ingenious, a deep thinker
___16. Generates a lot of enthusiasm
___17. Has a forgiving nature
___18. Tends to be disorganized
___19. Worries a lot
___20. Has an active imagination
___21. Tends to be quiet
___22. Is generally trusting
___23. Tends to be lazy
___24. Is emotionally stable, not easily upset
___25. Is inventive
___26. Has an assertive personality
___27. Can be cold and aloof

___28. Perseveres until the task is finished
___29. Can be moody
___30. Values artistic, aesthetic experiences
___31. Is sometimes shy, inhibited
___32. Is considerate and kind to almost everyone
___33. Does things efficiently
___34. Remains calm in tense situations
___35. Prefers work that is routine
___36. Is outgoing, sociable
___37. Is sometimes rude to others
___38. Makes plans and follows through with them
___39. Gets nervous easily
___40. Likes to reflect, play with ideas
___41. Has few artistic interests
___42. Likes to cooperate with others
___43. Is easily distracted
___44. Is sophisticated in art, music, or literature

Appendix B Control Variables

Income

Respondents were asked the following question and given the stated choices to determine his/her level of income. The coding used in the models of the thesis is identical to the number associated with the response. Higher data points indicate higher income levels. The response, "Don't wish to say," was coded as missing in the models.

What was your annual family income for 2007?
1 – Under $20,000
2 - $20,000 to under $40,000
3 - $40,000 to under $60,000
4 - $60,000 to under $80,000
5 - $80,000 to under $100,000
6 - $100,000 or more
7 – Don't wish to say

Education

Participants were asked the following question and given the stated choices to determine his/her education level. The coding used in the models of the thesis is identical to the number associated with the response. Higher data points indicate higher education levels. "Other" responses were coded as missing in the models.

1 – Grades 1-12, did not graduate from High School
2 – High School Graduate
3 – Some trade or technical training after High School
4 – Some college or A.A. degree
5 – College degree
6 – Professional or graduate training or degree after college
7 – Other

Gender

Respondents were asked, "What is your gender?" This was a required question in the survey. The data was originally coded as 1 = male and 2 = woman. However, the models use a recoded version so that females = 1 and male = 0.

Frame Order Dummy Variable

This variable codes whether the participant received the gain or the loss framed first. The original data set supplied by Kevin Smith and John Hibbing held four sets of prospect theory problems, two being gain framed problems and two being loss framed problems. The data was organized in this way because it was randomized on whether the participant received the gain or loss frame first.

Therefore, one set of participants received the first two of the four prospect theory problems, where the gain frame was first, followed by the loss frame. The other participants received the second set of problems, where the loss frame was first, followed by the gain frame. Those that answered the problems for the first set of problems (gain first) are coded as 0 and those respondents receiving the second set of problems (loss frame first) are coded as 1.

Appendix D Factor Analysis of Personality Trait Scales

Table C.1 Factor Analysis for Logged BFI Items

BFI Scale Items	Factors							
	1	2	3	4	5	6	7	8
Item 1	0.761							
Item 2				0.535				
Item 3							0.604	
Item 4			0.558					
Item 5		0.717						
Item 6	0.743							
Item 7				0.547				
Item 8					0.608			
Item 9			0.740					
Item 10		0.584						
Item 11	0.368							
Item 12				0.487				
Item 13							0.714	
Item 14			0.649					
Item 15		0.706						
Item 16	0.542							
Item 17				0.636				
Item 18					0.760			
Item 19			0.741					
Item 20		0.693						
Item 21	0.836							
Item 22				0.559				
Item 23					0.555			
Item 24			0.639					
Item 25		0.777						
Item 26	0.603							
Item 27				0.532				
Item 28					0.506			
Item 29			0.526					
Item 30						0.710		
Item 31	0.748							
Item 32				0.697				
Item 33					0.585			
Item 34			0.621					
Item 35								0.595
Item 36	0.755							
Item 37				0.608				

Item 38				0.609	
Item 39		0.724			
Item 40	0.714				
Item 41					0.743
Item 42			0.585		
Item 43				0.626	
Item 44					0.724

Appendix E Descriptive Statistics

Variable	N	Min	Max	Mean (s.d.)
		Dependent		
Preference Change	1316	0	1	.72 (.448)
		Controls		
Sex	1349	0	1	.63 (.484)
Income	1025	1	6	4.03 (1.549)
Education	1312	1	6	3.99 (1.367)
		Raw Score BFI Scales		
Extroversion	1333	1	5	3.29 (.851)
Agreeableness	1333	2	5	4.18 (.545)
Conscientiousness	1333	1	5	4.19 (.569)
Neuroticism	1333	1	5	2.58 (.801)
Openness	1333	1	5	3.44 (.683)
		Logged Score BFI Scales		
Extroversion	1333	0.00	1.00	.459 (.227)
Agreeableness	1333	0.00	1.00	.665 (.204)
Conscientiousness	1333	0.00	1.00	.683 (.204)
Neuroticism	1333	0.00	1.00	.290 (.177)
Openness	1333	0.00	1.00	.471 (.194)
		Typologies		
Cluster 1	1333	0.00	1.00	.058 (.233)
Cluster 2	1333	0.00	1.00	.742 (.438)
		First Condition (1=risky choice)		
Gain	654	0	1	.06 (.243)
Loss	670	0	1	.70 (.457)

Table E. Descriptive Statistics