

The Relevance of Context to Decision Making Styles

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Abstract

This study was designed to empirically examine experienced or perceived regret in two different decision domains, economic and relationship. Measures of regret were correlated in the two domains with self-efficacy, gender, and decision making styles (intuitive, analytical, regret-avoidant). Introductory psychology students took both the Decision-Making Styles Inventory (DMI) and a survey that was designed to induce regret in economic or relationship decision situations. Results indicated that males and females did not differ in their regret patterns in relationship situations, with the exception that females felt more regret in a roommate disagreement scenario. Females were also found to be higher in regret in two of the economic situations. Analytical decision making style was correlated with perceived regret in four of the decision situations (one economic and three relationship) whereas self-efficacy was correlated with regret in the other four situations (three relationship and one economic). This research suggests the need for a new regret scale that takes into account gender and different realms of regret.

The Relevance of Context to Decision Making Styles

Regret is an emotion that every person feels at some point in their lives. In fact, it influences decisions made by every kind of person in every realm of everyday life. It reaches decisions made in the consumer market as well as decisions made in the home. Yet in the field of psychology there is little research concerning regret. Currently there is one prominent regret scale (a subscale of the DMI) and one narrow scale that deals with regret in medical decisions (Brehaut, 2003). The latter scale was produced because researchers felt that the current scales in place had not been proven to be reliable or valid. Also, many of the scales had situation specific aspects, which made them impossible to generalize and lastly, most of the scales were developed for use in consumer satisfaction and tested only in laboratory settings (Brehaut, 2003). Regret research done in cancer studies has even suggested that a new regret scale is needed, that “Regret scales currently used in assessing treatment-related regret in cancer patients will need further development to reflect the multiplicity of regret types” (Connolly & Reb, 2005). These scales lump everyone together in how regretful they are in any situation; even if they completely differ in sex, decision making styles, self-esteem, and or self efficacy (Brehaut, 2003).

In modern research, there is the basic question of what exactly is regret? Various researchers have studied regret, stating that it is: “a negative emotion predicated on an upwards, self-focused, counterfactual inference” (Zeelenberg, 1999). Or perhaps, “Regret is a more or less painful cognitive and emotional state of feeling sorry for misfortunes, limitations, losses, transactions, shortcomings or mistakes (Landman, 1993, p.36). Or maybe regret is “a psychological reaction to making the wrong decision” (Bell, 1985, p. 118). Or even, “negatively, cognitively, determined emotion that we experience when realizing or imagining that our present

situation would have been better had we acted differently” (Zeelenberg et al. 1996, p. 6). Notice that even the same researcher (Zeelenberg) cannot settle on simply one definition of regret. Even a simple dictionary definition of regret, “to feel sorry, disappointed, or distressed about: to remember with a feeling of loss or sorrow; mourn” (Regret, *The American Heritage® Dictionary of the English Language, Fourth Edition*) seems contradictory. Is it the original feeling or is it how one feels after something goes terribly awry? Is it the same in every situation for every person? Once again, the whole concept of regret seems unclear, which seems to be a call to the researching world to take another look at such a strong emotion that affects so many people everyday in so many different ways.

In order to understand what little has been studied about regret in the field of psychology, a basic knowledge of regret theory is helpful. Regret theory (Loomes & Sugden, 1982) has two basic premises. One is that people compare the actual outcome of their decision with the outcome had they chosen a different outcome(s). People tend to regret when the outcome for their choice is worse than the other possible outcome(s). The second basic premise is that the anticipated emotional consequences of making a decision affect the decision.

Another popular regret theory is known as the decision justification theory (Connolly & Zeelenberg, 2002). The idea behind the theory is that people ask themselves if a decision or the process that led up to it was justified after a poor outcome. If the decision was slightly or completely unjustified then a person feels regret. The intensity of the regret is dependent upon the seriousness of the outcome. That is, the more negative and serious the outcome, the more regret is felt. It is unknown if this idea holds true for all people in all spheres of life.

Recent research has also been done on which areas of life people regret the most. In a meta-analysis done by Roese and Summerville (2005), it was found that in general, people regret

the most in education (32.2%), career (22.3%), romance (14.8%), parenting (10.2%), self (5.47%) and leisure (2.55%). However, it should be noted that in this meta-analysis, women were over represented. Seventy-three percent of the participants in the study were women. It is questionable, then, whether these numbers are representative of the population. Is it possible that there was a gender bias in these results? It would appear so. When this meta-analysis of areas of regret was done with college students, the results were slightly different. Romance was regretted the most (26.7%), followed by friends (20.3%), followed by education (16.7%), followed by leisure (10%), followed by self (10%) and lastly career (6.7%). This study yet again, had an unequal number of men and women (70 women, 49 men and two unspecified). These studies were positive in that they really started looking at what areas people tend to feel regret. Yet, they have no predicative value from person to person. They cannot identify what kind of person is more likely to regret a decision in the relationship sphere versus the economic sphere. They can only identify that a college student is, on average, more likely to regret a relationship (romantic decision) than a more economic (education) decision.

The thesis of my project is that individual differences in experienced regret exist. That is, people do not regret in the same way, to the same extremes, or when placed in different situations. I hypothesize that when placed in different situations, such as, personal relationships (family, friends and significant others) and economic situations (personal financial responsibility, company responsibility, familial financial responsibility) persons that use different decision making styles (intuitive, analytical and regret-based) and that are different genders will handle regret differently. I also hypothesize that self-efficacy plays a large role in regret.

In order to understand my hypotheses, an understanding of The Decision-Making Styles Inventory (DMI) is needed. The DMI has previously had some interesting correlations that led

me to my hypotheses. First off, however, it is very important to note that the DMI is an individual differences measure. That is, it is not an analytical measure of whether or not someone is an analytical, intuitive or regretful decision maker, but rather a self report measure (how someone sees themselves, not exactly how they actually are). However, the correlations between the type of decision maker someone self reports that they are and the type that the DMI shows them to be, are very high (Nygren & White, 2002) (See Table 1).

Nygren's correlational studies using the DMI have shown that people who are more analytical are more likely to be more rational, less impulsive, and endorse a need for cognition. More initiative decision makers, however, are more likely to be experiential, risk-taking, impulsive, higher in self-esteem, and believe in luck. Analytical decision makers tend to spend much of their time and effort planning out decisions, while intuitive decision makers tend to make their decisions quickly, with little effort exerted (Nygren & White 2002). Thus I hypothesize that people that follow a mostly analytical decision-making style would have a higher amount of regret than those who followed a mostly intuitive decision making style.

Those that endorse a regret avoidance decision making style are more likely to avoid harm, be risk-averse, have lower self-esteem, high self-deception, and high personal self-doubt, high judgment self-doubt, and feel depressed (Nygren & White 2002). Self efficacy "refers to beliefs in one's capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands" (Woods & Bandura, 1989). That is, self-efficacy is confined to a specific category, such as math, whereas self-esteem is one's opinion of oneself averaged over all categories of life. Based on Nygren and White's correlation research, I expect self-efficacy to be context-specific in that a low (high) self-efficacy in one area may or may not necessarily correlate positively with a low (high) amount in another area. I also expect that low

(high) self efficacy in one area would correlate strongly to a high (low) amount of regret in that area.

I also hypothesize the stereotypical idea that men are more regretful in economic contexts, whereas women are more regretful in relationship contexts. This hypothesis is based upon basic social norms in this exploratory experiment. This is the first time this idea will be explored. I believe that a valid regret scale needs to take into account all of these differences (self efficacy, gender, realm, decision making style) in order to be of greater prediction use.

The results of this experiment provide potential distinctions in experienced regret between context and types of individuals. I expect that my results will be consistent with my hypothesis that there will be differences in amount of regret and in the areas of regret depending upon gender and decision-making styles. I expect to find differences in the contexts in which people regret. That is, I expect some people to regret decisions made in both the economic and relationship realms, some to regret decisions made in one or the other and others to regret little in either realm. This study is indeed an exploratory study. There is no guarantee that any effects would be found, but the use of the DMI which has already been found to have the correlations mentioned above, will hopefully provide some insight. Clearly, this type of study, that looks at regret (which itself is unclearly defined in today's psychological literature) is a new study, one that has never been done before. Thus, some predictions that I made have little research basis. This exploratory study will at least hopefully make some headway in the understudied realm of regret. I hope that my results will eventually call for a new regret scale that will take into account the different aspects that are involved in the feeling of regret.

Method

Participants

One hundred and twenty-one introductory psychology students (34 female, 87 males) participated in this study. Each participant received research credit for their participation. Groups of fifteen to twenty-five were tested within each study session.

Materials

Each participant completed the Decision-Making Inventory (DMI). This scale was composed of fifteen items that assessed an analytical decision making style, fifteen items that assessed an intuitive decision making style and fifteen items that assessed decision making on a regret-based scale (See Appendix 1).

Each participant also completed the Generalized Self-Efficacy Scale (Appendix 2) which had seventeen items that were designed to give a basic measure of self-efficacy.

Participants also answered questions that induce regret from both an economical and a relationship standpoint. Each participant read and answered questions from four economic scenarios and four relationship scenarios. An example of an economic scenario was, "Early in the month, you had a little too much fun out one night with your friends. Whether you spent too much of your money dining out, shopping, or partying, the fact remains that you made a decision to spend more money than you planned to. Your finances for the rest of the month suddenly seem very tight and you realize that you will be on an extremely strict budget for the remainder of the month." An example of a valid relationship situation was, "You call your parents on a Friday afternoon. They ask you what you are doing for the weekend and you sprout off various plans with friends, none of which involve studying. You and your parents get into a big fight because they think you are not spending enough time studying."

They remind you how much your education costs. Your parents threaten to quit paying for your schooling unless you study more and have less fun. You decide to refuse to apologize and tell them they are being unreasonable and hang up on them.” Each scenario was followed by the same sixteen questions. Eleven of the questions tested for regret, while five of the questions tested for self-efficacy. All of these questions were based upon a six point rating scale (one being no regret and 6 feeling much regret, see Appendix 3). There was a final open-ended question regarding regret after the final scenario.

Design and Procedure

To investigate my hypotheses, each of the participants was asked to complete the Decision-Making Inventory (DMI). This inventory assesses which decision making style a person endorses (intuitive, analytical or regret-avoidant). Each participant took a self-efficacy and self-esteem inventory in order to assess their position in each of those categories as well. Each participant then read eight different hypothetical decision-making situations (four relationship and four economic). After reading each situation, participants were asked questions pinpointing the possible different areas in which one can regret and to what extent. The questions were identical for each situation. The order of the different context specific areas (relationships and economics) was changed in order to minimize order effects. These results were then compared between decision contexts (economic and relationship) and related to the participants' gender, decision-making styles and self-efficacy ratings.

The study was formed around a two-between, one-within 2 x 3 x 8 mixed ANOVA design. The between subjects variables of the ANOVA were gender and self-efficacy levels (low, medium and high). The within subjects variable was scenario type and included the eight economic and relationship situations. Significant main effects were found. First, the eight

scenarios produced different amounts of regret, $F(7, 770) = 20.873$, $p < .001$. This matched the hypothesis that people would regret differently in different situations to different extents. I also found a main effect in the gender differences; that is, each gender felt different amounts of regret in each situation (see figure 2), $F(1, 110) = 4.705$, $p = .032$. I also found a main effect for self-efficacy, $F(2, 110) = 6.501$, $p = .002$. That is, perceived regret in the scenarios did increase with decreased self-efficacy.

I also found three interactions. Gender and self-efficacy had an interaction (see Figure 1); that is, gender did play a role with self-efficacy levels in influencing regret scores, $F(2, 110) = 4.771$, $p < .010$. In general, females had a lower overall self-efficacy mean score of 38.158, whereas the average male mean was 40.859. This follows my hypothesis that in general, people with higher combined regret scores (found to be women) would have lower self-efficacy on the average. Also it follows that men, with lower combined regret scores on the average, would have higher self-efficacy. However, I also found that high self-efficacy women, in general, had less regret in all eight situations (low and medium self-efficacy women tended to have about the same amount of regret across the scenarios). Men, however, regardless of their self-efficacy level, tended to regret somewhat equally across all scenarios.

I found a sex x scenario interaction as well, $F(7, 770) = 1.949$, $p = .059$. That is, males and females had different combined regret scores in different scenarios. It is interesting to note however, that the highest mean regret score for both sexes was found in scenario six (a significant other fight). The mean in this scenario for males was 45.525 while the mean for females was 45.376. Across situations and sexes the pattern of results was somewhat steady however. In general, situations one and two had somewhat medium regret scores, situations three and four tended to have low combined regret scores. Situations five and six tended to have

high regret scores, with six being the peak for both sexes and then seven and eight tended have more medium regret scores. Thus, people, on the average, regretted the most in the significant other fight, regardless of sex.

The third and last interaction I found was that of scenario x self-efficacy, $F(14,770) = 1.693, p = .052$. That is, as noted above, self-efficacy levels tended to vary across scenarios (this time regardless of sex). I did not find a significant three-way interaction between scenarios, sex and self-efficacy.

Pearson correlations were also computed among the measures. I summed the responses across the eleven questions that were asked following each situation in order to find an overall, combined regret score. I then did the same thing with the five self-efficacy questions, combining them together to form an overall self-efficacy score. General regret from the DMI did correlate with the situation specific regret in each situation and was significant to a $p = .01$ level (r 's were: situation 1 was .656, situation 2 was .277, situation three was .474, situation four was .418, situation five was .512, situation six was .439, situation seven was .492, situation eight was .511).

I also found that the general regret scores correlated strongly with analytical decision making style, .398 (significant at the .01 level). That is, more analytical decision makers (as opposed to intuitive or regret-based decision makers) tended to be higher in general regret. Conversely, people who were low in analytical decision making tended to be lower in regret. There was no significant correlation for intuitive decision makers. That is, an intuition style did not seem to matter when it came to general regret or situational regret.

Gender had a strong correlation with regret in scenario one (spending too much) at .283, situation two (forgetting to pay the rent) at .244, and situation seven (roommate fight) at .221.

All were significant to the .01 level. Thus women were found to regret more than men in those three situations. In general, women were found to have a stronger correlation to regret in general (.337, significant to the .01 level). Also, the average regret score for men was 38.158 and the average regret score for women was 40.859.

I found that in situation one (recall the situations 1-4 are economic situations) that an analytical decision-making style had a correlation of .347 ($p < .01$). I found this pattern of correlation also in situation five (parental fight), six (significant other fight), and situation seven (roommate fight). In situation five the correlation with analytical decision making style was found to be .251 ($p < .01$). In situation six the correlation was found to be .442 ($p < .01$) and for situation seven was found to be .401 ($p < .01$).

The other four situations were found to have a high a high correlation with self-efficacy but not with analytical decision-making style. Situation two (forgetting to pay the rent) was found to correlate with self-efficacy .347 ($p < .01$). Situation three (being laid off from a job) was found to correlate with self-efficacy at .317 ($p < .01$). Situation four (volunteering) was found to correlate with self-efficacy at a .357 ($p < .01$). Situation eight (facebook breakup) was found to correlate with self-efficacy by .256 ($p < .01$). These results clearly show a pattern of differential perceived regret. In some situations regret is clearly related to analytical decision style; in other decision style does not matter. It is only self-efficacy for the decision context that matters.

Discussion

The results of this study raised many interesting questions. To recall the results, let us examine each of the hypotheses separately. First, it was hypothesized that men would regret more in economic scenarios and women would regret more than men in relationship scenarios.

From the results of this experiment we know that in general, those stereotypes did not hold true. Women regretted more in two of the economic scenarios, spending too much at the beginning of the month and neglecting to pay the rent. They also regretted more in the roommate fight in the relationship situation. However, overall there was no sweeping trend. Economically, this could mean that the stereotype of women being ignorant of economic matters is completely untrue in the modern world. This makes sense as women are often engaged in the workforce and control their own finances more than they would have perhaps fifty years ago. Relationship wise, this could discredit the stereotype that women regret more in relationships and are more involved in them. The fact that both sexes had the highest amount of regret in the significant other disagreement seems to say that men and women both are capable of highly regret in that relationship situation. That is, men are equally susceptible as women to relationship regret as women. This particular finding also helped to replicate the evidence found in the Roese and Summerville (2005) study. Recall that they found college students regretted the most in romantic situations (26.7%), followed by friends (20.3%), followed by education (16.7%), followed by leisure (10%), followed by self (10%) and lastly career (6.7%). This also might help to explain why the lowest levels of regret were found in the situations that concerned jobs and internships. At this point in their lives, college students seem to find relationships ranking above their possible future careers in areas of importance and thus regret. Of course the Roese and Summerville study also looked at an older sample of people and that in general, people regret the most in education (32.2%), career (22.3%), romance (14.8%), parenting (10.2%), self (5.47%) and leisure (2.55%). This seems to mean that in order to make generalizations about the general population outside of college students, this study would have to be replicated throughout that population.

The second hypothesis studied was that those that endorsed a more analytical decision-making style would have higher reported regret. Conversely, those that endorsed an intuitive decision making style would have less reported regret. From the results of the study we found that an analytical decision making style did indeed correlate with having higher regret. However, intuitive endorsing an intuitive decision making style did not at all correlate with regret. Thus, people that tend to think over their decisions did have high amounts of regret. This seems to imply that the more we consider our options, the more likely we could lean toward regret, the matter what the income. This fits in nicely with regret theory (Loomes & Sugden 1982), which states that sometimes we regret more when our results do not turn out like we hoped they would. That in fact, they turned out worse than expected and we wonder if we should have made a different decision to begin with.

The third hypothesis that was studied in this experiment was that people with high self-efficacy would experience lower regret and that people with low self-efficacy would experience higher regret. This hypothesis also turned out to be true for both genders. In general, people with high self-efficacy did indeed tend to have to have lower regret. That is, people who were confident in their lives tended to regret less across various relationship and economic situations. Conversely, people that lacked confidence in their lives tended to regret more across various relationship and economic situations.

For the field of psychology, this study of regret has opened many doors related to the clinical area of study. If people can be classified as analytical decision makers, clinicians can have an idea that these people might be more inclined to regret. Thus they can help them reduce their regret. Depression is a large area of research in clinical psychology. Perhaps if we better understand regret, we can better understand depression and how to treat it better. More research

on the link between regret and depression is an option that this study opens up to the community of researchers. It may also help clinicians to know that women do tend to regret more than men, even in economic situations and that men and women regret similarly in relationship situations. If the old stereotypes can be thrown out, people can better understand themselves and clinicians can better understand people and thus help them cope better with their own lives. This study also gives the clinical option of trying to increase someone's self-efficacy in various areas in order to possibly decrease their regret. These clinical applications of course would need further research but this study opens the door for them.

Outside of the field of clinical psychology, it is always helpful to realize more about the self. If the general population can better understand themselves and how they regret, they may be able to avoid or better cope with various situations of regret in their lives. All in all, who would not want to cope better with regret in their lives?

Further research needs to be done on the similarity of the four situations that were tied together by a high correlation between situational regret and analytical decision making. Recall, situation one was about spending too much, situation five was a parental fight, situation six was a significant other fight, and situation seven was a roommate fight. For some reason, people in these particular situations that were more likely to endorse an analytical decision making style yet there was no correlation to self-efficacy. Does this mean that people that report themselves to endorse a highly analytical decision making style are not confident? What it really seems to insinuate is that these situations were situations in which the participant did have control. Contrarily, in the remaining situations, (situation two was forgetting to pay the rent, situation three was job layoff, situation four was a volunteer layoff and situation eight was a Facebook breakup), there was a high correlation to situational regret and overall self-efficacy from the

DMI. Does that mean these people, who are not highly correlated with an analytical decision making style, have a high self efficacy? That is, would a tendency to be an analytical decision making style person mean a lack of overall self-efficacy? Conversely, that a high amount of self-efficacy is not related to analytical decision making? Perhaps, but what is clear is that in these decision participants had very little control over the situation. It seems that the difference between the situations was not so much relationship and economic, but rather having control and lacking control. Clearly more research needs to be done in order to more fully understand this pattern.

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Figure 1

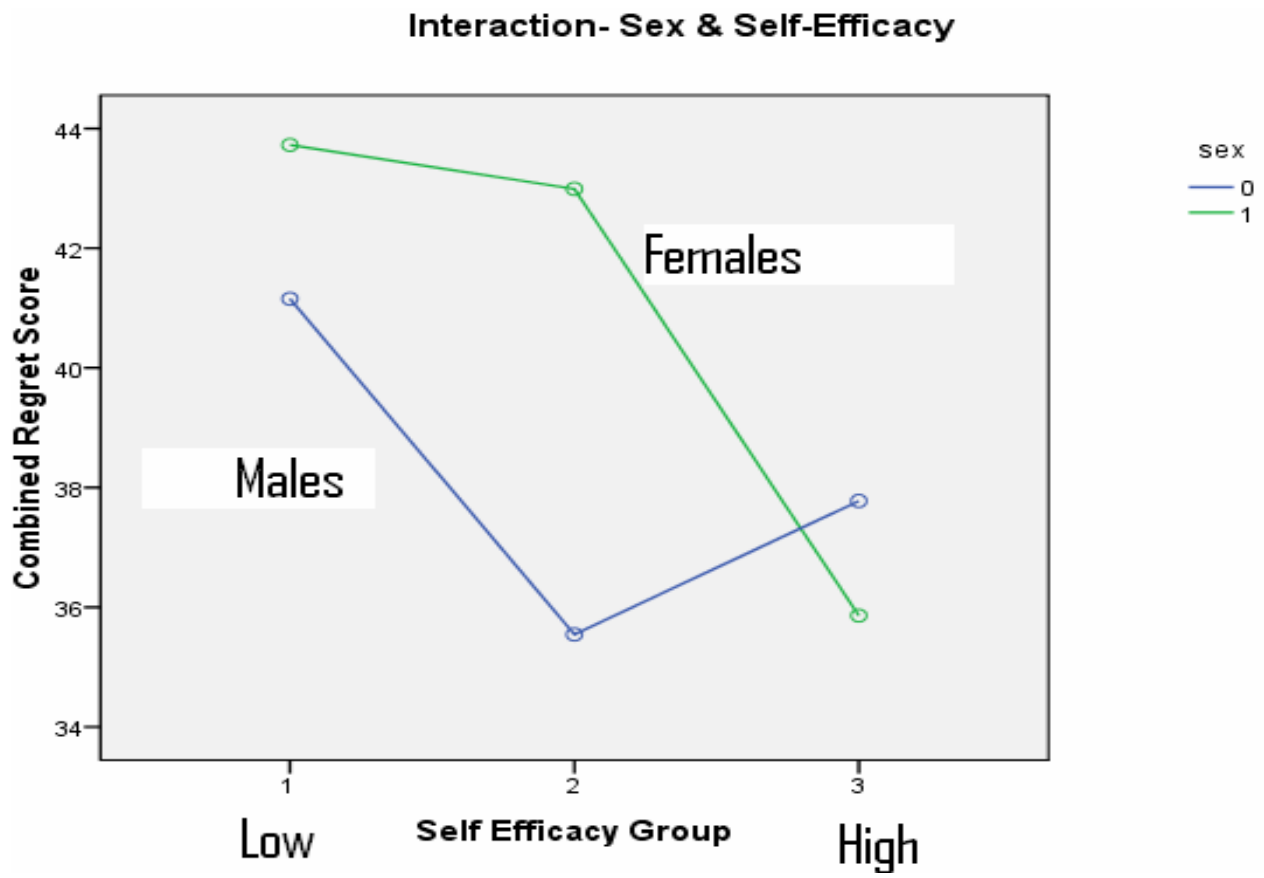


Figure 2

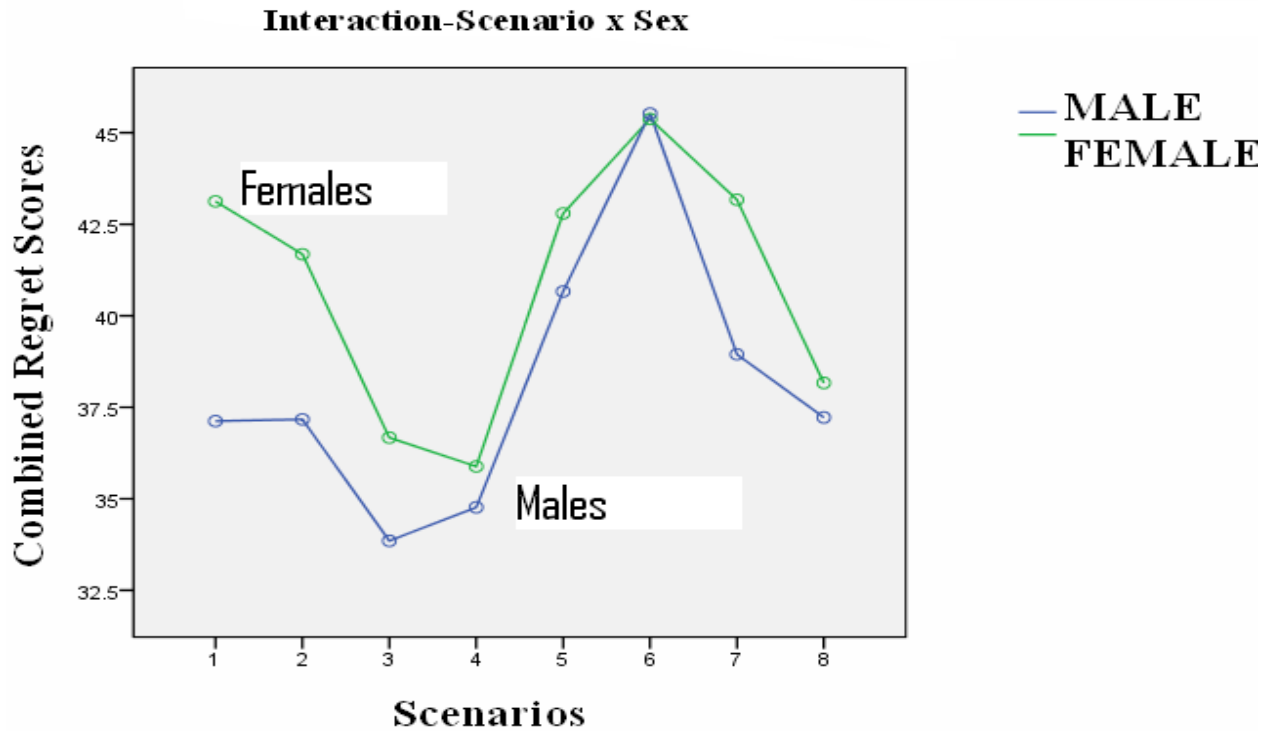


Figure 3

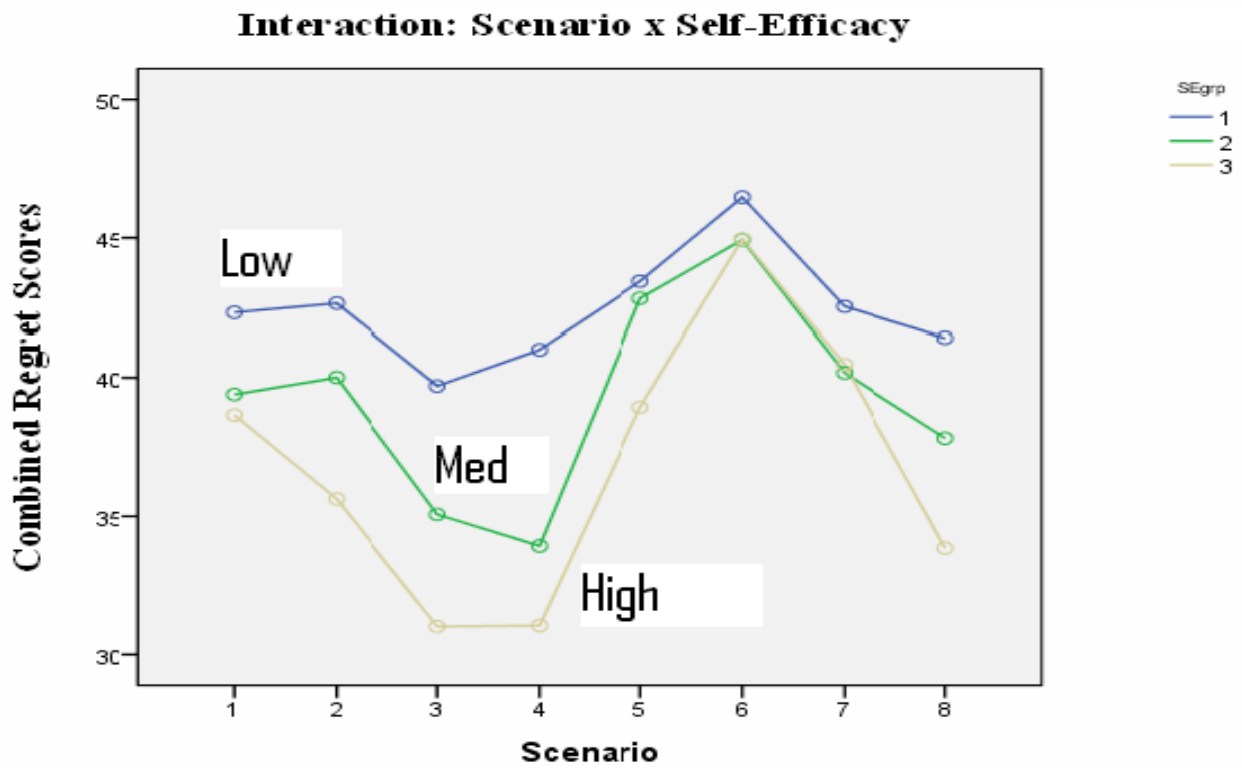


Figure 4

Table of Correlations

Scale	DMI Analytical	DMI Intuitive	DMI Avoid / Regret	N
DMI Intuitive Style	-.047			1154
DMI Avoidance / Regret Style	.280	-.180		1154
Rational Experiential Inv. – Rational (S. Epstein, 1996)	.333	.111	-.241	1154
Rational Experiential Inv. – Experiential (S. Epstein, 1996)	-.124	.640	-.261	1154
Jackson Personality Inventory – Risk Taking (D. Jackson)	-.214	.245	-.303	1130
Personality Research Form – Impulsivity (D. Jackson)	-.394	.320	.148	182
Self – Doubt (K. Oleson, 2002)	-.045	-.179	.463	451
Decisional Self Doubt (H. Mirels & P. Greblo, 1994)	-.001	-.099	.658	180
Rosenberg Self Esteem (S. Rosenberg, 1965)	.148	.250	-.387	509
Belief in Luck (P. Darke & J. Freedman, 1997)	-.084	.274	-.128	1117
Need for Cognition (J. Cacioppo & R. Petty, 1993)	.281	-.018	-.142	793
Cognitive Dysorganization (Mirels, unpublished)	-.165	-.174	.161	332
Gender	.002	.047	.225	1154

Appendix 1-DMI

Subject ID # _____

Age _____ Male / Female _____ College Major _____

We are interested in how you typically go about making decisions. Think about different situations and contexts where you have made decisions recently. Then for each statement below indicate the degree to which you agree or disagree with that statement. Keep in mind that there are no right or wrong answers to any of these items, because there is no single “best” way to make every decision. It is important that you try to answer all questions. However, if you feel uncomfortable with any item, you may choose to omit it. Use the following rating scale for each statement.

1	2	3	4	5	6
Strongly	Moderately	Slightly	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree	Agree	Agree	Agree

- 1 ____ I feel that if I plan my decisions carefully I will make good decisions.
- 2 ____ In spontaneous decision situations I usually find that I have good intuitions.
- 3 ____ I think that I could keep myself from worrying later if I had made a bad decision.
- 4 ____ In making decisions I first try to make a mental list of all the factors or attributes that will be important to my decision.
- 5 ____ I can get a good “feeling” for most decision situations very quickly.
- 6 ____ I sometimes spend too much time hesitating before making decisions.
- 7 ____ Before I make a decision, I like to figure out the most efficient way of studying it.
- 8 ____ I feel that I have a knack for making good, quick decisions.
- 9 ____ Before I make a decision, I think about whether others will approve or disapprove of it.
- 10 ____ I’m very rational when it comes to evaluating risky options.
- 11 ____ I think that relying on one’s “gut feelings” is a sound decision making principle.
- 12 ____ I tend to be someone who worries a lot over decisions I’ve made.
- 13 ____ In making decisions I first make a careful initial estimate of the situation.
- 14 ____ There are many common sense “rules-of-thumb” that I know of that usually lead to good decisions.
- 15 ____ After making a decision, I find that I often go back and re-evaluate the situation.
- 16 ____ I try to pay attention to past information in making new decisions.
- 17 ____ Sometimes decisions, even important ones, are not difficult to make because they just “feel” right.
- 18 ____ I have trouble putting the results of disappointing decisions I’ve made behind me.
- 19 ____ A good rule of thumb is that the more information I have in making a decision, the better that decision will be.
- 20 ____ Simple decision rules usually work best for me.
- 21 ____ I rarely rethink old decisions I’ve made.
- 22 ____ In making decisions I try to evaluate the importance of each piece of information in the decision process.
- 23 ____ When forced to make a quick decision, I find that information that readily comes to mind is usually the most useful in making a choice.

- | 1 | 2 | 3 | 4 | 5 | 6 |
|------------------------------|--------------------------------|------------------------------|---------------------------|-----------------------------|---------------------------|
| Strongly
Disagree | Moderately
Disagree | Slightly
Disagree | Slightly
Agree | Moderately
Agree | Strongly
Agree |
- 24___ Worrying about future decisions that I have to make is something I often do.
- 25___ I always try to be fully prepared before I begin working on making a decision.
- 26___ My first reaction to a decision situation usually turns out to be the best one.
- 27___ Many times when I look back on a choice I've made, I wish that I would have put more effort into evaluating the alternatives.
- 28___ In making decisions I try to examine the importance of the good and bad points of each alternative.
- 29___ If I can't decide what to do, I go with my "best guess".
- 30___ When I find out that I've made a bad decision I feel a lot of regret.
- 31___ I like to take a rational, systematic approach to making decisions.
- 32___ When making decisions, my first instinct usually turns out to be best.
- 33___ If I were gambling at a casino I would prefer to play simpler games like slot machines where you don't have to concentrate on playing complex strategies.
- 34___ My best decisions are those for which I've carefully weighed all of the relevant information.
- 35___ I let my intuition play a big part in most decisions I make.
- 36___ I generally don't make very good decisions under time pressure.
- 37___ I generally rely on careful reasoning in making up my mind.
- 38___ I often rely on my first impression when making a decision.
- 39___ I sometimes get "butterflies" in my stomach when I have to make decisions.
- 40___ I like to make decisions in an orderly manner.
- 41___ I rely on my intuition in making many of my personal decisions.
- 42___ After making a decision I sometimes worry about the regret I'll feel if it the outcome turns out to be a bad one.
- 43___ Most important decisions in life are complex and need to be evaluated in a systematic way.
- 44___ I find that my best decisions usually result from using the "quick and easy" approach rather than the "slow but sure" method.
- 45___ Unexpected bad outcomes have a greater impact on me than do unexpected good outcomes.
- 46___ I waste a lot of time on trivial matters before getting to the final decision.
- 47___ Even after I make a decision I delay acting upon it.
- 48___ I don't make decisions unless I really have to.
- 49___ I delay making decisions until it's too late.
- 50___ I put off making decisions.
- 51___ A quick, intuitive decision rule usually works best for me.
- 52___ I make my best choices when I have to make quick, instinctive decisions.

- 53 ____ Taking an action that could result in a bad outcome would be worse than taking no action at all.
- 54 ____ I tend to remember bad decisions I've made.
- 55 ____ Before I make a decision, I think about whether I might regret it later.

Appendix 2 Self-Efficacy

1	2	3	4	5	6
Strongly	Moderately	Slightly	Slightly	Moderately	Strongly
Disagree	Disagree	Disagree	Agree	Agree	Agree

1. ____ When I make plans, I am certain I can make them work.
2. ____ One of my problems is that I cannot get down to work when I should.
3. ____ If I can't do a job the first time, I keep trying until I can.
4. ____ When I set important goals for myself, I rarely achieve them.
5. ____ I give up on things before completing them.
6. ____ I avoid facing difficulties.
7. ____ If something looks too complicated, I will not even bother to try it.
8. ____ When I have something unpleasant to do, I stick to it until I finish it.
9. ____ When I decide to do something, I go right to work on it.
10. ____ When trying to learn something new, I soon give up if I am not initially successful.
11. ____ When unexpected problems occur, I don't handle them well.
12. ____ I avoid trying to learn new things when they look too difficult for me.
13. ____ Failure just makes me try harder.
14. ____ I feel insecure about my ability to do things.
15. ____ I am a self-reliant person.
16. ____ I give up easily.
17. ____ I do not seem capable of dealing with most problems that come up in life.

Appendix 3

QUESTIONNAIRE

Subject ID # _____

1. Take a minute to imagine yourself in the following situation.

“Early in the month, you had a little too much fun out one night with your friends. Whether you spent too much of your money dining out, shopping, or partying, the fact remains that you made a decision to spend more money than you planned to. Your finances for the rest of the month suddenly seem very tight and you realize that you will be on an extremely strict budget for the remainder of the month.” **Please answer the following questions.**

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

1. _____ I would be very upset with my decision to spend that much money.
2. _____ I would regret making the decision to spend that much money.
3. _____ Although I made this bad decision to spend that much money, I believe that I could keep myself from worrying later.
4. _____ I feel like I would have hesitated too long before making this decision to spend that much money.
5. _____ Before I made this decision to spend that much money, I would have thought about whether others approved or disapproved of it.
6. _____ After making this decision to spend too much money, I would worry a lot about it.
7. _____ After making this decision to spend this much money, I would have gone back and replayed the whole scenario in my head again, re-thinking it numerous times.
8. _____ I would have trouble putting the results of this disappointing decision of spending too much money behind me
9. _____ I never rethink my decisions, regardless of their outcomes
10. _____ After you made the decision to spend that much money, I felt uneasy that I was able to make the best decision.
11. _____ After you made this decision to spend that much money, I felt confident that I was able to make the best economically sound decision.

1	2	3	4	5	6
Not Confident	Moderately Less Confident	Slightly Less Confident	Slightly Confident	Moderately Confident	Strongly Confident

12. _____ How confident would you be that you that you weighed all the options when you decided to spend that much money?
13. _____ How confident would you be that you made a good and reasonable decision to spend that money?
14. _____ When you made this economic decision to spend that much money, how confident would you be that you made the best decision?
15. _____ How confident are you that you would be able to recover from this decision to spend that much money?
16. _____ How confident are you that you handled this situation the best way you possibly could?

2. Take a minute to imagine yourself in the following situation.

“You live in an apartment or house with several roommates. It is your responsibility to make the actual payment of the rent and you paid it for this month. However, you check your bank account online only to realize that you accidentally forgot to deposit your roommates’ checks into your account first before you wrote your check and paid the landlord. By making the decision to not deposit your roommates’ checks first, your checking account is overdrawn and you have to pay an additional \$30 finance charge.” **Please answer the following questions.**

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

1. _____ I would be very upset with my decision to not deposit their checks first.
2. _____ I would regret making the decision to not deposit their checks.
3. _____ Although I made this bad decision to not deposit the checks, I believe that I could keep myself from worrying later.
4. _____ I feel like I would have hesitated too long before making this decision to not deposit their checks.
5. _____ Before I made this decision to not deposit their checks, I would have thought about whether others approved or disapproved of it.
6. _____ After making this decision to not deposit the checks, I would worry a lot about it.
7. _____ After making this decision to not deposit the checks, I would have gone back and replayed the whole scenario in my head again, re-thinking it numerous times.
8. _____ I would have trouble putting the results of this disappointing decision of not depositing the checks behind me
9. _____ When you made this decision to not deposit the checks, how confident would you be that you were able to make the best economically sound decision.
10. _____ After you make this decision to not deposit the checks, you felt uneasy that you were able to make the best decision.
11. _____ I never rethink my decisions, regardless of their outcomes.

1	2	3	4	5	6
Not Confident	Moderately Less Confident	Slightly Less Confident	Slightly Confident	Moderately Confident	Strongly Confident

12. _____ How confident would you be that you that you weighed all the options when you decided not deposit those checks?
13. _____ How confident would you be that you made a good and reasonable decision to not deposit the checks?
14. _____ When you made this economic decision to not deposit the money, how confident would you be that you made the best decision?
15. _____ How confident are you that you would be able to recover from this decision to not deposit the checks?
16. _____ How confident are you that you handled this situation the best way you possibly could?

3. Take a minute to imagine yourself in the following situation.

“You are offered an attractive job that should be secure the entire time you are in school. It pays well, and by taking the job, you will be able to pay all of your tuition and living expense costs while in college and would not have to take out any loans. However, taking the job does mean that not only must you give up almost all of your Friday and Saturday nights throughout the entire school year but your Spring Break plans as well. You decided to take the job, but ended up getting laid off, through no fault of your own, in May – only a week after OSU’s Spring Break.”

Please answer the following questions.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

1. _____ I would be very upset with my decision to take the job.
2. _____ I would regret making the decision to take the job.
3. _____ Although I made this bad decision to take the job, I believe that I could keep myself from worrying later.
4. _____ I feel like I would have hesitated too long before making this decision to take the job.
5. _____ Before I made this decision to take the job., I would have thought about whether others approved or disapproved of it.
6. _____ After making this decision to take the job, I would worry a lot about it.
7. _____ After making this decision to take the job, I would have gone back and replayed the whole scenario in my head again, re-thinking it numerous times.
8. _____ I would have trouble putting the results of this disappointing decision of taking the job behind me
9. _____ I never rethink my decisions, regardless of their outcomes
10. _____ After you made this decision to take the job, you felt uneasy that you were able to make the best decision.
11. _____ After you made this decision to take the job, you felt confident that you were able to make the best economically sound decision.

1	2	3	4	5	6
Not Confident	Moderately Less Confident	Slightly Less Confident	Slightly Confident	Moderately Confident	Strongly Confident

12. _____ How confident would you be that you that you weighed all the options when you decided take the job ?
13. _____ How confident would you be that you made a good and reasonable decision to take the job?
14. _____ When you made this economic decision to take the job, how confident would you be that you made the best decision?
15. _____ How confident are you that you would be able to recover from this decision to take the job?
16. _____ How confident are you that you handled this situation the best way you possibly could?

4. Take a minute to imagine yourself in the following situation.

“You are offered a volunteer year-long internship position in a very well known company. You decide to take this position for several reasons: although you can’t get paid, if you complete the program you can get some college credit in your major, the internship will give you good experience and help you build important contacts, and it is related to the kind of job you’d like to have in the future. You are trained over a four-month period for about fifty hours. After you finally complete the training, you learn that the company is cutting back on resources and the volunteer position has been cancelled. You are not able to use your training.” **Please answer the following questions.**

- | | 1 | 2 | 3 | 4 | 5 | 6 |
|-----|------------------------------|--|------------------------------------|-------------------------------|---------------------------------|-------------------------------|
| | Strongly
Disagree | Moderately
Disagree | Slightly
Disagree | Slightly
Agree | Moderately
Agree | Strongly
Agree |
| 1. | _____ | I would be very upset with my decision to accept the position. | | | | |
| 2. | _____ | I would regret making the decision to accept the position. | | | | |
| 3. | _____ | Although I made this bad decision to accept the position, I believe that I could keep myself from worrying later. | | | | |
| 4. | _____ | I feel like I would have hesitated too long before making this decision to accept the position. | | | | |
| 5. | _____ | Before I made this decision to accept the position, I would have thought about whether others approved or disapproved of it. | | | | |
| 6. | _____ | After making this decision to accept the position, I would worry a lot about it. | | | | |
| 7. | _____ | After making this decision to accept the position, I would have gone back and replayed the whole scenario in my head again, re-thinking it numerous times. | | | | |
| 8. | _____ | I would have trouble putting the results of this disappointing decision of accepting the position behind me | | | | |
| 9. | _____ | I never rethink my decisions, regardless of their outcomes. | | | | |
| 10. | _____ | After you made this decision to accept the position, you felt uneasy that you were able to make the best decision. | | | | |
| 11. | _____ | After you made this decision to accept the position, you felt confident that you were able to make the best economically sound decision. | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 |
| | Not
Confident | Moderately
Less Confident | Slightly
Less Confident | Slightly
Confident | Moderately
Confident | Strongly
Confident |
| 12. | _____ | How confident would you be that you that you weighed all the options when you decided to accept the position? | | | | |
| 13. | _____ | How confident would you be that you made a good and reasonable decision to accept the position? | | | | |
| 14. | _____ | When you made this economic decision to accept the position, how confident would you be that you made the best decision? | | | | |
| 15. | _____ | How confident are you that you would be able to recover from this decision to accept the position? | | | | |
| 16. | _____ | How confident are you that you handled this situation the best way you possibly could? | | | | |

5. Take a minute to imagine yourself in the following situation.

“You call your parents on a Friday afternoon. They ask you what you are doing for the weekend and you sprout off various plans with friends, none of which involve studying. You and your parents get into a big fight because they think you are not spending enough time studying. They remind you how much your education costs. Your parents threaten to quit paying for your schooling unless you study more and have less fun. You decide to refuse to apologize and tell them they are being unreasonable and hang up on them.” **Please answer the following questions.**

- | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------------------|----------------------------|---|-----------------------|-------------------------|-----------------------|
| Strongly Disagree | Moderately Disagree | Slightly Disagree | Slightly Agree | Moderately Agree | Strongly Agree |
| 1. | _____ | I would be very upset with my decision to refuse to apologize and what I said to my parents. | | | |
| 2. | _____ | I would regret making the decision to refuse to apologize and say what I said to my parents. | | | |
| 3. | _____ | Although I made this bad decision, I believe that I could keep myself from worrying later. | | | |
| 4. | _____ | I feel like I would have hesitated too long before making this decision. | | | |
| 5. | _____ | Before I made this decision I would have thought about whether others approved or disapproved of it. | | | |
| 6. | _____ | After making this decision, I would worry a lot about it. | | | |
| 7. | _____ | After making this decision, I would have gone back and replayed the whole scenario in my head again, re-thinking it numerous times. | | | |
| 8. | _____ | I would have trouble putting the results of this disappointing decision behind me | | | |
| 9. | _____ | I never rethink my decisions, regardless of their outcomes. | | | |
| 10. | _____ | After you made this decision, you felt uneasy that you were able to make the best decision. | | | |
| 11. | _____ | After you made this decision, you felt confident that you were able to make the best relationship decision. | | | |

- | 1 | 2 | 3 | 4 | 5 | 6 |
|----------------------|----------------------------------|--|---------------------------|-----------------------------|---------------------------|
| Not Confident | Moderately Less Confident | Slightly Less Confident | Slightly Confident | Moderately Confident | Strongly Confident |
| 12. | _____ | How confident would you be that you that you weighed all the options when you decided to refuse to apologize and what you said to your parents | | | |
| 13. | _____ | How confident would you be that you made a good and reasonable decision? | | | |
| 14. | _____ | When you made this relationship decision, how confident would you be that you made the best decision? | | | |
| 15. | _____ | How confident are you that you would be able to recover from this decision? | | | |
| 16. | _____ | How confident are you that you handled this situation the best way you possibly could? | | | |

6. Take a minute to imagine yourself in the following situation.

“You and your boyfriend/girlfriend get into a big disagreement about what to do on your anniversary. You really want to go to dinner at an Italian restaurant and then dancing downtown. He/she wants to make dinner at home together and watch a rented movie. You cannot agree and argue for over an hour. You decide to throw a fit and inform him/her that you are going out dancing with your friends instead. You leave fuming. ” **Please answer the following questions.**

- | 1 | 2 | 3 | 4 | 5 | 6 |
|--------------------------|----------------------------|--------------------------|-----------------------|-------------------------|-----------------------|
| Strongly Disagree | Moderately Disagree | Slightly Disagree | Slightly Agree | Moderately Agree | Strongly Agree |
1. _____ I would be very upset with my decision to throw a fit.
 2. _____ I would regret making the decision to throw a fit.
 3. _____ Although I made this bad decision, I believe that I could keep myself from worrying later.
 4. _____ I feel like I would have hesitated too long before making this decision.
 5. _____ Before I made this decision I would have thought about whether others approved or disapproved of it.
 6. _____ After making this decision, I would worry a lot about it.
 7. _____ After making this decision, I would have gone back and replayed the whole scenario in my head again, re-thinking it numerous times.
 8. _____ I would have trouble putting the results of this disappointing decision behind me
 9. _____ I never rethink my decisions, regardless of their outcomes.
 10. _____ After you made this decision, you felt uneasy that you were able to make the best decision.
 11. _____ After you made this decision, you felt confident that you were able to make the best relationship decision.
- | 1 | 2 | 3 | 4 | 5 | 6 |
|----------------------|----------------------------------|--------------------------------|---------------------------|-----------------------------|---------------------------|
| Not Confident | Moderately Less Confident | Slightly Less Confident | Slightly Confident | Moderately Confident | Strongly Confident |
12. _____ How confident would you be that you that you weighed all the options when you decided throw a fit?
 13. _____ How confident would you be that you made a good and reasonable decision?
 14. _____ When you made this relationship decision, how confident would you be that you made the best decision?
 15. _____ How confident are you that you would be able to recover from this decision?
 16. _____ How confident are you that you handled this situation the best way you possibly could?

7. Take a minute to imagine yourself in the following situation.

“You and your roommate make a cleaning list in the beginning of the year. Near winter break the house/apartment is an absolute mess. Neither of you are adhering to the list. You are both stressed out about finals and neither of you has any time to clean. Both sets of your parents are coming directly after finals are over. You get into a screaming match in the kitchen amid overflowing trash, a sink full of dishes, and takeout bags all over the floor. You both leave slamming doors, swearing to never speak to each other again.” **Please answer the following questions.**

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

1. _____ I would be very upset with my decision to argue with my roommate.
2. _____ I would regret making the decision to argue with my roommate.
3. _____ Although I made this bad decision, I believe that I could keep myself from worrying later.
4. _____ I feel like I would have hesitated too long before making this decision.
5. _____ Before I made this decision I would have thought about whether others approved or disapproved of it.
6. _____ After making this decision, I would worry a lot about it.
7. _____ After making this decision, I would have gone back and replayed the whole scenario in my head again, re-thinking it numerous times.
8. _____ I would have trouble putting the results of this disappointing decision behind me
9. _____ I never rethink my decisions, regardless of their outcomes.
10. _____ After you made this decision, you felt uneasy that you were able to make the best decision.
11. _____ After you made this decision, you felt confident that you were able to make the best relationship decision.

1	2	3	4	5	6
Not Confident	Moderately Less Confident	Slightly Less Confident	Slightly Confident	Moderately Confident	Strongly Confident

12. _____ How confident would you be that you that you weighed all the options when you decided argue with your roommate?
13. _____ How confident would you be that you made a good and reasonable decision?
14. _____ When you made this relationship decision, how confident would you be that you made the best decision?
15. _____ How confident are you that you would be able to recover from this decision?
16. _____ How confident are you that you handled this situation the best way you possibly could?

8. Take a minute to imagine yourself in the following situation.

“You and your significant other of a long time decide to go to different colleges. You notice after a few months he/she becomes very close friends with a member of the opposite sex. At first, you feel uneasy about their relationship, but over time you tell yourself you are overreacting. You decide to trust your significant other. A few weeks later your significant other calls you and breaks up with you. That weekend via Facebook, you find out your ex-significant other is ‘in a relationship’ with his/her former close friend.” **Please answer the following questions.**

- | 1
Strongly
Disagree | 2
Moderately
Disagree | 3
Slightly
Disagree | 4
Slightly
Agree | 5
Moderately
Agree | 6
Strongly
Agree |
|------------------------------------|--------------------------------------|---|---------------------------------|-----------------------------------|---------------------------------|
| 1. | _____ | I would be very upset with my decision to go to different colleges. | | | |
| 2. | _____ | I would regret making the decision to go to different colleges. | | | |
| 3. | _____ | Although I made this bad decision, I believe that I could keep myself from worrying later. | | | |
| 4. | _____ | I feel like I would have hesitated too long before making this decision. | | | |
| 5. | _____ | Before I made this decision I would have thought about whether others approved or disapproved of it. | | | |
| 6. | _____ | After making this decision, I would worry a lot about it. | | | |
| 7. | _____ | After making this decision, I would have gone back and replayed the whole scenario in my head again, re-thinking it numerous times. | | | |
| 8. | _____ | I would have trouble putting the results of this disappointing decision behind me | | | |
| 9. | _____ | I never rethink my decisions, regardless of their outcomes. | | | |
| 10. | _____ | After you made this decision, you felt uneasy that you were able to make the best decision. | | | |
| 11. | _____ | After you made this decision, you felt confident that you were able to make the best relationship decision. | | | |

- | 1
Not
Confident | 2
Moderately
Less Confident | 3
Slightly
Less Confident | 4
Slightly
Confident | 5
Moderately
Confident | 6
Strongly
Confident |
|--------------------------------|--|---|-------------------------------------|---------------------------------------|-------------------------------------|
| 12. | _____ | How confident would you be that you that you weighed all the options when you decided go to different colleges? | | | |
| 13. | _____ | How confident would you be that you made a good and reasonable decision? | | | |
| 14. | _____ | When you made this relationship decision, how confident would you be that you made the best decision? | | | |
| 15. | _____ | How confident are you that you would be able to recover from this decision? | | | |
| 16. | _____ | How confident are you that you handled this situation the best way you possibly could? | | | |

Recall all the scenarios you just read. Is there any part of any of the scenarios that you regretted in particular? Why or why not?