

Running Head: CONSTRUAL, RELEVANCE & SYSTEM INFORMATION

Challenging the Status Quo: When People Become Open to Negative System Information

A Senior Honors Thesis

Presented in Partial Fulfillment of the Requirements for graduation with research distinction in
Psychology in the undergraduate colleges of The Ohio State University

by

Terri Marie Mangano

The Ohio State University

June 2010

Project Advisor: Dr. Kentaro Fujita, Department of Psychology

Abstract

People often resist change to their social systems, even when the failings of these systems are readily apparent (e.g., US healthcare). We propose that system information search comprises a self-control conflict between two motives: a short-term system-justification motive that is associated with enhancement of positive affect, and a long-term system-assessment motive that is concerned with seeking diagnostic information with which to improve the system. This conflict should only be evident when the system is of relevance to the individual. The level of abstraction at which people construe events may impact decisions in such self-control dilemmas. Higher-level construals lead people to focus on more long-term goals (accurate assessment of the system) over short-term ones (avoiding the discomfort of learning one's system is flawed). This study examined construal-level as an important psychological determinant of openness to change in system information search. Construal-level and system relevance were manipulated between our participants who were then given a choice of reading about system strengths (which serve system-justification motives) or weaknesses (which serve system-assessment motives). We predicted that participants in the high-construal/high-relevance condition would be most open to system weaknesses. In contrast to predictions, our results revealed that low-level construal individuals preferred weaknesses more than high-level construal individuals. We speculate that our participants may have been less invested in change, and that justifying the system in the face of negative information may have been the more pressing concern. Consistent with this interpretation, we found that individuals who believed change was a responsible thing to do, and is possible, preferred to receive system weaknesses to strengths at high-level construals.

Acknowledgements

I would first like to thank my advisor, Kentaro Fujita, for his tireless enthusiasm and support of my research and academic endeavors. In addition to his tremendous direction in developing this project, Ken Fujita has contributed immensely toward my growth as a professional researcher, and as an individual. I would also like to thank the graduate student who has assisted me with this project, Karen MacGregor. Karen made sure that she was always readily available for guidance in all aspects of my thesis, from the pilot studies to the final editing process. For this I have greatly benefited and am truly grateful. Additionally, I would like to express my gratitude to every member of the Fujita Lab, who were always willing to offer clarifications and helpful suggestions when I needed them. I also wish to acknowledge the gracious funding I received from The Ohio State University's College of Honors Arts and Sciences, Social and Behavioral Sciences, and Psychology Department, without which this project could not have taken place.

Table of Contents

	Page
Abstract.....	3
Acknowledgments.....	4
Table of Contents.....	5
List of Figures.....	7
Introduction.....	8
System Justification Theory.....	9
Self-Relevant Information Search.....	11
Construal Level Theory and Self-Control.....	12
Necessity of Desire to Improve and Relevance.....	14
The Present Research.....	15
Hypotheses.....	16
Overview.....	16
Method.....	16
Participants.....	16
Materials & Procedure.....	17
Laboratory Setting.....	17
Construal Level Manipulation.....	17
System Relevance Manipulation.....	18
Dependent Measure.....	20
Other measures I: Current system knowledge.....	21
Other measures II: Amount of time spent participating in REP.....	21
Other measures III: Reported value of REP.....	21
Other measures IV: The importance of improving REP.....	23
Other measures V: Perceived possibility of REP/university change & improvement.....	23
Other measures VI: Evaluation of change in regards to others.....	24
Other measures VII: Personal evaluation of improvement.....	25
Other measures VIII: Demographic.....	25
Other measures IX: Information selection check.....	26
Results & Discussion.....	26
Main Analysis.....	26
Ancillary Analyses.....	27
Relevance.....	27
Construal.....	28
Information Selection Check.....	32
General Discussion.....	33
Limitations.....	36
List of References.....	42

Appendices:

Appendix A: High-level construal manipulation..... 45

Appendix B: Low-level construal manipulation.....46

Appendix C: Relevant system scenario & dependent measure 49

Appendix D: Irrelevant system scenario & dependent measure..... 50

Appendix E: Knowledge of the Communications & Psychology REP system.....51

Appendix F: Amount of time spent in REP..... 52

Appendix G: REP Value index..... 53

Appendix H: Importance of REP Improvement index..... 54

Appendix I: Perceived Possibility index..... 55

Appendix J: Other measures of REP not included in analyses..... 57

Appendix K: Evaluation of Others’ Change index..... 58

Appendix L: Evaluation of Self Change index..... 59

Appendix M: Personal evaluation of change items not included in analyses..... 60

Appendix N: Demographic items..... 61

Appendix O: Information selection check..... 62

Figure Captions.....63

Figures.....64

List of Figures

Figure		Page
1	Univariate ANOVA of interaction of construal and relevance on dependent measure.....	64
2	Linear Regression of construal and Importance of REP Improvement index on the dependent measure	
3	Linear Regression of construal and belief that university is committed to change on the dependent measure	64
4	Linear Regression of construal and belief that changing the status quo is responsible on the dependent measure	65
5	Linear Regression of construal and Personal Evaluation of Improvement index on the dependent measure	64

Introduction

Social systems organize our social lives. The term “social system” can be used to classify any institutionalized group of people and processes that serve a specific function and help to organize our lives. From the economy to religion, from politics to education, social systems are ubiquitous and they affect every individual in society. When these systems’ processes are closely inspected, one may be hard-pressed to find one that, while possibly serving beneficial functions much of the time, is altogether devoid of dysfunction. Although it may be argued that there is no such thing as a perfect system, one that functions flawlessly and discriminates against no one, it is still perplexing when an obviously broken system is maintained with little or no effort to improve it.

System members often resist change, even when the failings of their system are very apparent, in order to avoid the costs associated with recognizing these negative features. The costs involved in this type of situation are cognitive, in that learning negative information about one’s system provides evidence of a deficiency in one’s life, and affective as such deficiencies may arouse doubt and distress. Furthermore, there is a great deal of uncertainty associated with any type of change, so people may choose to validate a broken system simply to avoid the terrifying unknowns of system change. To elucidate this phenomenon, consider the US health care system. As of 2008, more than 46 million people in the United States were uninsured because they could not afford health insurance (DeNavas-Walt, et al., 2009). Although the Obama Administration has initiated a change in this system (presumably for the better), there are individuals who continue to believe that US health care is working just fine and should be left alone. Many of these individuals are clearly disadvantaged by the current system, yet they still support maintenance of the status quo. Such individuals, who support the current healthcare

system despite its undeniable shortcomings in regard to their lives, appear to be very uncomfortable with change, even if it may be for the better. Another prime example of this dilemma is the American economic system. While providing opportunities for upward mobility for some, our economic system has allowed the wealthiest 1% of the population to control almost half of the country's wealth. While the middle class is shrinking and the gap between the rich and poor grows, people not only fail to see this as a threat to the legitimacy and stability of the capitalist system, but many find ways to tolerate and justify these disparities as fair, legitimate, necessary, and inevitable (Jost & Hunyady, 2002).

With these examples in mind, it becomes clear that people often try to resist system change because they are wary of the uncertainty that accompanies change. However, as in the case of US healthcare, there are also those who desire and pursue system change and improvement. The present research attempts to understand what circumstances are necessary for individuals to become willing to recognize negative aspects about a relevant social system, and to strive for improvement.

System Justification Theory

System justification theory can explain why individuals are not willing to recognize negative information about a group or system to which they belong (Jost & Hunyady, 2002; Jost & Hunyady, 2005). Jost and Hunyady (2002) posit that system-justifying ideologies help people to feel better about their place in an unequal system and serve as a coping mechanism. When people justify their broken social systems, they prevent psychological stress by maintaining beliefs that their situation is understandable, predictable, meaningful, and fair. These ideologies allow individuals to cope with the injustices they experience from their social systems by fostering a sense of control and hope despite circumstances they cannot change. System

justification theorists argue that, while much of the previous research on intergroup behavior has focused on ego-justifying motives (i.e., motives to enhance self-esteem) and group-justifying motives (i.e., maintaining collective self-esteem and/or positive group distinctiveness), there is an additional, system-justifying motive (Jost & Hunyady, 2002). The system-justifying motive encourages people to seek information that supports the system, even when their immediate, personal interests are at stake. Kay et al. (2002) supported this claim with a study demonstrating that people rationalize the existing state of affairs even when they do not hold any personal responsibility for bringing it about and regardless of whether they stand to gain or lose. The higher the likelihood provided for an event (in this study, participants were told that the election of either George W. Bush or Al Gore was more likely), the more desirable it became to all participants, regardless of political party affiliation (Kay, et al., 2002; Jost & Hunyady, 2002).

Although system justification theory provides an explanation as to *why* people sometimes prefer not to seek negative information about their social systems, it remains silent as to *when* people become open to system change, and willing to recognize negative aspects of the system in order to achieve improvement. Research on the self may provide some insight into this question. Specifically, research on self-relevant information search has revealed that although under most conditions, people prefer positive over negative information about themselves, under certain conditions, they will strive for self-improvement and seek out negative diagnostic information (Trope & Neter, 1994; Freitas, et al., 2001). Thus, it may prove fruitful to draw on the self-relevant information search literature in order to address the question of which circumstances are necessary for people to become open to system change and improvement.

Self-Relevant Information Search

People are generally driven to understand themselves, including both their strengths and their weaknesses (Trope & Neter, 1994; Sedikides & Strube, 1997). Evaluative feedback in a variety of domains, whether from bosses, teachers, friends, or even online tests, is one means by which individuals can learn about themselves. Often, this evaluative feedback is positive and bolsters one's confidence by focusing attention on one's strengths. Alternately, as no one is perfect, the feedback received also has the potential to be negative, and though one does not always feel good about this kind of information, it can still be beneficial by focusing attention on areas that need improvement. Trope and Neter (1994) have suggested that there are two motives that people use to navigate situations in which they must seek evaluative feedback about themselves. The first is an accurate self-assessment motive that guides people to seek diagnostic information about themselves to promote self-improvement, or a positive change. The second is a self-enhancement motive that guides people to seek only positive information about themselves to maintain positive self-views and to avoid negative self-views (Trope & Neter, 1994; Freitas, et al., 2001; Sedikides & Gregg, 2008).

Although there are short-term gains associated with avoiding negative self-relevant information (e.g. blissful ignorance of problems and positive affect), there are also long-term benefits associated with self-improvement that can be attained from actually considering this negative information. For example, consider a person who believes that she is a very eloquent speaker, but consistently avoids feedback that says that her speaking ability is actually pretty terrible. While this person may attain immediate benefits from maintaining a positive self-view, the benefits would be even greater in the long run if she were able to improve upon her speaking skills so that she actually become an eloquent speaker. However, acknowledging one's

weaknesses is often unpleasant. It takes an act of will to expose oneself to the negative emotions that accompany the negative feedback necessary to achieve self-improvement.

Construal Level Theory & Self-Control

A self-control conflict is created when an individual is given an opportunity to receive accurate, yet negative information about themselves. In this situation, the short-term benefits of avoiding negative information (achieved by using the self-enhancement motive) oppose the long-term benefits of self-improvement (achieved by using the accurate self-assessment motive). If individuals are motivated to obtain realistic assessments of themselves and are open to the possibility of improvement through change, they need to exert self-control in order to overcome the painful affective costs of receiving negative feedback (e.g. thinking, “I’m not as good as I thought”) in order to benefit through improvement. Trope and Neter (1994) assert that, though positive feedback enhances self-esteem and may provide realistic self-assessment, negative feedback can be even more valuable than positive feedback. In addition, unlike positive feedback negative feedback can allow individuals to learn what skills they need to improve or acquire (Trope & Neter, 1994; Bayer & Gollwitzer, 2005).

The way people negotiate self-control conflicts is influenced by the abstractness of their mental representations of the conflict situation (Fujita et al., 2006; Fujita, 2008). Construal level theory asserts that in a self-control conflict, individuals using a higher level of abstraction (i.e., a high-level construal) to represent the conflict will pursue the goals most valuable and cross-situationally desirable to them, while using a more concrete representation (i.e., a low-level construal) will enhance pursuit of situation-specific, immediately salient goals (Trope & Liberman, 2003; Fujita, et al., 2006; Trope et al., 2007; Freitas, et. al., 2008). From this perspective, self-control can be conceptualized as making decisions and behaving in agreement

to global, high-level construal of the situation rather than local, low-level construal of the situation (Fujita, et al., 2006). To elucidate this concept, consider a college student named Frances. Frances' primary goal is to succeed academically, but she feels great when focusing solely on her strengths and her accomplishments. In her public speaking class, Frances has been given the opportunity to meet with her professor to discuss either her weaknesses or her strengths in the class, whichever she prefers. Frances feels conflicted because she knows that if she chooses to discuss her weaknesses, it would give her the opportunity to improve upon her speaking skills, but she would also like to hear what her strengths are in order to feel good about herself. If Frances were to construe this choice at a lower, more concrete level, she would find it difficult to maintain motivation to improve her skills because she would be more likely to consider the immediately salient, situation specific rewards associated with learning about one's strengths and avoiding information about weaknesses. If Frances were construing the upcoming discussion at a higher, more abstract level, however, she would be more likely to maintain self-control by resisting the temptation to temporarily bolster her self-esteem. This is because she would perceive the situation as an opportunity to attain the cross-situationally valuable goal of self-improvement.

According to Freitas, et al. (2001), feedback accuracy is commonly believed to be the most desirable outcome in a self-relevant information search, while the preference for positive feedback is somewhat less desirable and motivated by feasibility. In a self-relevant feedback setting, then, the primary goal is to assess oneself accurately, while avoiding the costs involved in receiving negative feedback is a more peripheral goal. Because higher abstraction assists individuals in maintaining self-control and to pursue their primary goals, an individual using a high-level construal to represent a situation in which they have the opportunity to receive self-

relevant feedback should find that the desirability of using the accurate self-assessment motive outweighs the more feasible processes involved in using the self-enhancement motive to seek information about themselves. In contrast, individuals using a low-level construal to represent the same self-relevant feedback situation should prefer to use the self-enhancement motive to pursue the secondary goal of receiving positive feedback, regardless of its accuracy, relative to those using high construal.

Freitas, et al. (2001) found evidence to support these predictions in a study that examined the way in which construal levels affected a self-relevant feedback situation. In this particular study, both temporal distance and feedback valence were manipulated. Temporal distance is one way of manipulating construal (Trope & Liberman, 2003). It has been shown that distal events are construed with more abstract representations while proximal future events are construed in more concrete terms (Fujita, 2008; Trope & Liberman, 2003). Participants were asked to rate their interest in using a new career service in the proximal future in the low level condition (or distal in the high-level condition) in order to receive feedback about their liabilities (or strengths) in future careers (Freitas, et al., 2001). Results showed that those viewing the opportunity in more abstract terms (the distal future condition) were more interested in receiving liability feedback than information about their strengths. The reverse was true for those using a low-level of abstraction (the proximal future condition), who were more interested in hearing about their strengths than liabilities (Freitas, et al., 2001).

Necessity of Desire to Improve and Relevance

The desire to improve plays a central role in the self-control conflict fundamental to choosing between receiving positive versus negative feedback (Freitas, et al., 2001). When it is understood that improvement can be achieved by focusing on one's liabilities rather than

strengths, those who are driven to achieve improvement should be expected to opt for feedback that can lead to positive change rather than feedback that can lead to immediate benefits (Freitas, et al., 2001). It is also important to note that a self-control conflict is only present when an individual perceives the topic of feedback available to them as relevant and important (Fujita, et al., 2006). In their study, Raghunathan and Trope (2002) found that the emotional costs associated with receiving negative feedback would not be present if the feedback did not matter to the individual. For example, if an individual who does not think math is important were offered feedback about their math proficiency, they would be emotionally unaffected by the results whether they were positive or negative, and thus a self-control conflict would not be present.

The Present Research

The current study is intended to model openness to change at the system-level based on the research on openness to change at the self-level. The conflict involved in choosing to focus on the strengths versus the weaknesses of one's social system is one of self-control, in that a person must choose either to justify the system in order to feel positively about it, or to assess that system accurately to improve it. We believe that these motives parallel the self-enhancement and accurate self-assessment motives evident in the self-relevant information search literature; for this reason they will be referred to as the "system-justification" and "accurate system-assessment" motives. When people are given the opportunity to recognize accurate, yet negative information about their system, the two motives are discordant and the individuals must exert self-control to overcome the immediate emotional costs of learning how their system is failing in order to gain the long-term benefits of improving it.

Hypotheses

We propose that how abstractly or concretely people construe events will impact how they resolve the self-control conflict between system-justification and system-assessment. We predict that more abstract construals will promote accurate system-assessment motives and greater openness to negative system information. In addition, we predict that this should be particularly true when systems are more relevant to the individual. Only when systems are relevant should people be concerned about accurate assessment with an eye toward improvement.

Overview

The present study was a 2 x 2 between-subjects design conducted using a paper & pencil questionnaire administered to undergraduates at The Ohio State University during the Autumn Quarter of 2009. Construal-level and system relevance were manipulated so that participants received a packet that contained one of the following sets of conditions: high construal & high relevance; high construal & low relevance; low construal & high relevance; low construal & low relevance. One dependent variable was included following the manipulations, which was an assessment of the type of system information participants wished to receive. In addition, there were several scales of items that may have served as moderators to the dependent variable.

Method

Participants

Subjects were 110 undergraduate students enrolled in an introductory psychology course at The Ohio State University. These students had the opportunity to involve themselves in the Psychology Department research experience program (REP), where they participated in various research studies in return for partial course credit. Two individuals failed to follow instructions

for the construal manipulation task and were not included in analyses. An additional two individuals did not provide answers for several important items. We also excluded ten participants whose first language was not English, as the construal manipulation in our study heavily depended on a sound understanding of the English language. A total of 96 participants were included in final statistical analyses. Subjects were male ($n = 30$) and female ($n = 66$) whose ages ranged from 18 to 24 ($M = 18.72$).

Materials & Procedure

Laboratory setting. Subjects were brought into the room in which they would be completing the experiment, were seated, and informed of the voluntary and confidential nature of the study. Next, subjects were told that they would be filling out several questionnaires pertaining to their opinions about university systems, particularly REP. Subjects were each seated at their own table with an experimental packet (randomized before the session) and a pen. All study materials were contained within the paper packet, from which students read the instructions and completed the entire study.

Construal-level manipulation. Participants were randomly assigned to one of two conditions in which they were induced to interpret events either at high or at low-level construals using methods validated in previous research (Fujita et al., 2006). This task was described ostensibly as a thought exercise that would help people think about their life goals and ultimately improve their life satisfaction. Those assigned to the high construal level condition were presented with the question “Why do I engage in recycling?”, and were given a diagram of vertically aligned boxes that began at the bottom of the page and were connected by upward arrows that were labeled “Why?”. The box at the very bottom of the diagram was filled in with the statement, “Recycle” (see Appendix A). Participants were instructed to provide a response in

the box immediately above the bottom one, answering the question why they would recycle. After providing their first answer, they were asked to provide a second response in the box immediately above the one they had just completed, responding to the question “why” they would engage in their initial response. For example, a participant might have answered the question “Why do I recycle?” by writing, “To help preserve the environment.” The diagram would then prompt them to ask themselves, “Why do I want to preserve the environment?” Upon completing that answer, participants were then prompted again by the diagram to ask themselves why they might engage in their response. Participants provided four responses in this manner.

Those assigned to the low construal level condition were presented with the question, “How do I engage in recycling?” As with the high construal level condition, participants were then given a diagram of vertically aligned boxes. These boxes, however, began at the top of the page, and were connected by downward arrows labeled “How?” The box at the very top of the diagram was filled in with the statement, “Recycle” (see Appendix B). Participants were instructed to provide a response in the box immediately below the top one, answering the question how they would recycle. After providing their first answer, the diagram prompted participants to provide a second response in the box immediately below, asking themselves the question “how” they would engage in their initial response. For example, participants might have responded to the question “How do I recycle” by writing, “Separate my trash.” The diagram would then prompt them to ask, “How does one separate their trash?” Upon completing a second response, the diagram would then prompt them again to ask how they would engage in their second response. As with the high level manipulation, participants provided four responses.

System relevance manipulation. Following the construal level manipulation, participants

were randomly assigned to read either a system-relevant scenario or a system-irrelevant scenario. It is important at this point to explain what the Research Experience Program (REP) system is. Researchers in the Psychology Department use this system to recruit Psychology 100 students as subjects in their studies on campus. Students in Psychology 100 have a research requirement in which they can choose between writing summaries of seven psychological research articles and participating in REP. Although many students prefer participation in REP to the essay requirement (making a plentiful subject pool for researchers), they are expected to invest a significant amount of time in REP. Most REP studies are worth 0.5 credit hours and students must acquire seven hours by the end of the quarter. In addition to the participation itself, students are entirely responsible for finding experiments that work with their schedule and showing up to the correct waiting area on time. If a student misses an experiment they have signed up for, researchers have the discretion to “debit” them - adding more hours to their requirement. As with any system, REP has its downsides, and we expect the students who use this system to be particularly aware of these flaws.

The system relevant scenario (see Appendix C) led participants to believe that the Ohio State Psychology Department’s REP system had recently undergone review, which had brought to light both positive and negative aspects about the system. Intense discussion among faculty within the department had ensued about the possibility of a change to REP that would take effect during the current quarter and would directly impact the REP students reading the scenario. Three possibilities were listed (“*A large reduction of the number of research hours and essays Psychology 100 REP students are required to complete*”; “*A 10 -essay requirement without the experimental option*”; and “*Another alternative that is still under review*”). The first of these options was meant to seem like a positive change, the second was meant to seem like a negative

change, and the third was meant to maximize participants' uncertainty about the possible change to REP (potentially prompting an affective concern to justify the system). Participants went on to read that because this decision would directly affect them, they had the opportunity to contribute their opinion to the department in order to help determine what action to take. However, before giving their input, they would need to read some information about how the current REP system is working. Participants were informed that they had time to read only one of two kinds of information in this session ("*Weaknesses about the current REP system*" or "*Strengths about the current REP system*"). This study was run within the first two weeks of the quarter in which our participants were using REP. For this reason, they should assume they would have to experience any change to the system for at least four to six weeks.

The system irrelevant scenario (see Appendix D) was very similar to the system-relevant scenario, except instead of the Ohio State Psychology Department's REP system, the Ohio State School of Communication's REP system was used (which would have an effect on the current Communications REP students). Participants were asked to provide their opinion because, as REP students themselves, they could provide valuable insight into this matter. The scenario ended with the option of reading one of two kinds of information ("*Weaknesses about The School of Communication's current REP system*" or "*Strengths about The School of Communication's current REP system*").

Dependent measure. After participants in the system relevant conditions were exposed to the manipulations, they were asked to choose which type of information they would like to receive about their current REP system (see Appendix C). Participants in the system irrelevant conditions were asked to choose which type of information they would like to receive about the School of Communication's current REP system (see Appendix D). The information choice was

made on a Likert-type scale (1 = “Weaknesses” to 7 = “Strengths”).

To test our assumption that REP is a relevant system to students, a pilot study was run in which forty-five Psychology REP students were given a questionnaire to rate their opinions about the REP system. We tested our assumption that the REP system was considered relevant to our participants by asking them whether they believed that it was valuable and that they were invested in it. If people do not consider a system worthwhile and do not consider themselves to be very involved in it, they will not have a vested interest to see that system improve. All items were rated with a Likert-type scale (1 = “Not at all” to 7 = “Extremely”). Students perceived the REP system as valuable; “*To what extent would you feel you were ‘losing’ or ‘missing out on’ something valuable if REP were eliminated?*” ($M = 5.11$, $SD = 1.64$), and they believed they had put forth a good deal of effort into the system; “*How much effort do you feel you have put into the REP system?*” ($M = 5.93$, $SD = 12.29$).

We also tested our intuition that people will generally choose weakness information when system improvement is their primary goal and strength information when system maintenance is their primary goal in the same aforementioned pilot study (within subjects; $n = 45$). Two items of particular importance were given to participants (“*Imagine there have been criticisms about REP and you would like to improve it. Which kind of information would you prefer to receive?*” and “*Imagine there have been criticisms about REP, but you believe that the system is working fine how it is and would like to keep it the same. Which kind of information would you prefer to receive?*”). These items were provided on a Likert-type scale (1 = “Weaknesses” to 7 = “Strengths”). We conducted a within-subjects paired-samples t-test to compare these two items on the information scale. Results revealed a significant difference in the scores of the system-improvement item ($M = 2.87$, $SD = 1.9$) and the system-maintenance item ($M = 4.47$, $SD = 2.13$),

$t(44) = 4.38, p < .01$. These data support our prediction that students preferred weakness information when improvement was their goal and strength information when they were prompted to keep the system the same.

Other measures I: Current system knowledge. Once participants made their selection of what type of system information they wished to receive, they filled out several more short questionnaires within their packet. We first measured participants' current knowledge of both REP systems included across the conditions of our study (see Appendix E). It should be noted that The School of Communications does not have an REP system exactly like the Psychology Department's as we suggest in our scenario, but it does have a similar subject pool. If our participants believed that they currently possessed more knowledge about The School of Communication than the Psychology Department, our system relevance manipulation would be problematic. To measure participants' perceived knowledge of these systems, we asked how much they already knew about The School of Communication REP system's strengths and weaknesses, and how much they already knew about the Psychology Department REP system's strengths and weaknesses on a Likert-type scale (1 = "Nothing" to 7 = "Very much").

Other measures II: Amount of time spent participating in REP. The amount of REP experiments our subjects had participated in to date was likely to vary. This variance could possibly moderate participants' desire to improve REP because a higher investment in REP (defined by more experiments the participant had engaged in) may result in a stronger likelihood to justify, rather than change, the system. To measure REP investment, we included one free-response item that asked participants how many experiments they had participated in to date (see Appendix F). Scores ranged from 1 to 16 ($M = 6.92, SD = 3.62$).

Other measures III: Reported value of REP. In order for our participants to desire an

improvement in their REP system, it was necessary for them to perceive REP as a valuable system to which they belong. We assume that if REP were not considered valuable, students would be unmotivated to seek a positive change in the system because they would be indifferent to any change to a system that was not considered worthwhile in the first place. To evaluate participants' perceived value of REP, we constructed a seven-item questionnaire for them to rate their opinions of REP, which we will call REP Value (see Appendix G). Each item was rated on a Likert-type scale (anchors varied; 1 = least agreement to 7 = most agreement). Responses were summed to create a single index, which ranged from 7 to 48 ($M = 33.53$, $SD = 7.16$, Cronbach's $\alpha = .87$). Items included, "*How much do you enjoy participating in REP studies?*"; "*How much do you think you have learned while participating in REP?*" and "*To what extent do you feel that you are making a valuable contribution to science by participating in REP?*"

Other measures IV: The importance of improving REP. To obtain our expected results, it was also necessary for participants to believe that an improvement to REP is a desirable outcome. If improvement were perceived as undesirable, the proposed self-control conflict between information-seeking motives would not be present, thus causing our dependent measure to be uninformative. We constructed a three-item measure, which was designed to measure how important an improvement of REP is to them, and we will refer to as Importance of REP Improvement (see Appendix H). Each item was rated on a Likert-type scale (1 = "*Not at all*" to 7 = "*Extremely*"). Responses were summed to create a single index that ranged from 3 to 21 ($M = 13.60$, $SD = 3.23$, Cronbach's $\alpha = .68$). Items included, "*How important is it to you that REP improves?*"; "*How important is it to you that REP is functioning at the best of its ability?*" and "*Do you think that improvement of REP should be sought after, even if it entails a drastic change?*".

Other measures V: Perceived possibility of REP/university change & improvement.

Similar to the perception that system improvement is important, it was also essential for participants to believe that change and improvement to their experience was possible. Even if students did believe that improvement is very important, if they also believe that it cannot be achieved, it is less likely that they will pursue a change. In this measure, we combined two items about the possibility of a positive change in REP specifically (e.g. “*How possible do you think it is that any of the potential changes to the current REP system can improve your REP experience?*” and “*To what extent do you feel that students’ opinions about REP will impact the final outcome of this decision?*”) with a nine-item (four of which were reverse-scored) index used to assess participants’ perception of the possibility of change and improvement in the university in general (e.g. “*This university is committed to change*”), totaling eleven combined items. We will refer to this index as Perceived Possibility (see Appendix I). Items were rated on a Likert-type scale (1 = “*Not at all*” to 7 = “*Extremely*”). Responses to these items were summed to create a single index that ranged from 35 to 71 ($M = 55.83$, $SD = 7.08$, Cronbach’s $\alpha = .70$).

Other measures VI: Evaluation of change in regards to others. Another potential moderator of participants’ rating on the dependent measure is how they generally view others who promote change. This is essentially an indirect measure of how comfortable participants are with questioning the status quo. If a person is very uncomfortable with someone who promotes change, it is unlikely that they will do so themselves. Participants were given a six-item measure, which asked them to rate others who question the status quo; three of these items had positive connotations and three had negative ones (e.g. “*Is someone who questions the status quo a responsible citizen?*” and “*Is someone who questions the status quo a trouble-maker?*”). All

items were rated on a Likert-type scale (1 = “*Not at all*” to 7 = “*Extremely*”) and after reverse-scoring the items with negative adjectives, were adequately correlated (Cronbach’s $\alpha = .68$).

Responses were summed to create a single index, which ranged from 23 to 42 ($M = 33.10$, $SD = 4.27$). We will refer to this index as Evaluation of Others’ Change (see Appendix K).

Other measures VII: Personal evaluation of improvement. This measure was designed to assess how subjects evaluate change and improvement when it involves them, personally. The degree to which the participant believes that change toward improvement is, generally speaking, desirable, may impact their desire for a change in their REP system as well. It would be understandable to find students who are generally uncomfortable with improved changes in their life to avoid a change in REP, regardless of the potential for improvement by such a change. We included a measure, which we refer to as Personal Evaluation of Improvement, designed to measure participants’ preference for change and improvement in general (see Appendix L). The index consisted of five items (e.g. “*How much do you agree with the statement, ‘There is always room for improvement?’*”; “*To what extent do you think that improvement should be sought after even if it entails a drastic change?*”; “*How important is it to you that your social systems strive to be the best they can be?*”), all of which were rated on a Likert-type scale (1 = “*Not at all*” to 7 = “*Extremely*”). Scores were summed to create a single index and ranged from 21 to 35 ($M = 30.08$, $SD = 3.25$, Cronbach’s $\alpha = .74$).

Other measures VIII: Demographic. Following these questionnaires, participants were asked to share several demographic details about themselves (see Appendix N). Items included were age, major, gender, first language, and political orientation (Likert-type scale with 1 = “*Conservative*” and 7 = “*Liberal*”). We measured political orientation because there has been evidence that people with a conservative political ideology use system justification to a greater

extent than those with a liberal political ideology, which may have a moderating effect on our dependent measure (Jost, et al., 2003).

Other measures IX: Information selection check. Finally, we measured the way in which participants chose information based on different goals, similar to the items in our pilot study (see Appendix O). We included four items, all of which were rated on a Likert-type scale (1 = “Weaknesses” to 7 = “Strengths”). The first two questions were focused on satisfaction with REP (“If you are happy with the way REP is functioning, what kind of information would be best to receive?” and “If you are unhappy with the way REP is functioning, what kind of information would be best to receive?”), and the last two were goal-centered (“If you want to keep REP the same, what kind of information would be best to receive?” and “If you want to change REP, what kind of information would be best to receive?”).

Results & Discussion

Main analysis

The primary analysis was performed using a 2 (construal: high-level vs. low-level) x 2 (system relevance: relevant vs. irrelevant) between-subjects univariate analysis of variance (ANOVA) on the continuous dependent measure of system information choice (1 = “REP Weakness Information” to 7 = “REP Strength Information”). Although there was not a significant main effect of system relevance $F(1, 92) = .16, p = .69$, or a significant interaction between system relevance and construal $F(1, 92) = .26, p = .62$ (see *Fig. 1*), there was a main effect of construal $F(1, 92) = 5.05, p = .03$. This main effect went in the opposite direction from what we had expected, with the system information choice higher ($M = 4.39, SD = .27$) when participants were induced to a high construal and lower ($M = 3.54, SD = .27$) when participants

were induced to a low construal.

Figure 1

Ancillary analyses

Relevance. Our next step was to consider why relevance did not have an effect on system information choice. The manipulation of relevance depended on the assumption that Psychology REP students would have more knowledge and experience with their system versus The School of Communication. If they were more informed about the irrelevant condition, it may explain why we did not see an effect of relevance in the main analysis. To test this explanation, we conducted a within-subjects paired-samples t-test to compare scores of how much our participants knew about the strength information of each department's REP system. Results revealed a significant difference between knowledge about the strengths of the Communication REP ($M = 1.82, SD = 1.16$) and the Psychology REP ($M = 3.59, SD = 1.53$), $t(95) = 11.18, p < .01$. Similarly, we conducted a within-subjects paired-samples t-test to compare scores of how much participants knew about the weaknesses of each department's REP system. As predicted, our results revealed significant differences between how much participants knew about the weaknesses of the Communication REP ($M = 1.63, SD = .97$) and how much they knew about Psychology REP weaknesses ($M = 2.62, SD = 1.30$), $t(94) = 7.15, p < .01$. Therefore, we can assume that participants' level knowledge about the two systems involved in our study did not cause lack of effect of the relevance manipulation in the main analysis.

It is also possible that our participants had invested a large amount of time in the REP system (participation in many experiments), resulting in a stronger preference to justify, rather

than change, the system. To find some support for this explanation we looked to our item that assessed participants' investment in the system (how many experiments participants had volunteered in to date). We might predict that the more studies subjects had participated in, the more likely they would be to justify the system. After mean-centering the "amount" item, it was regressed with relevance and construal (and all possible interactions) on the dependent measure (information choice scale). Although there was a main effect of construal ($b = .43$, $SE = .19$, $p = .03$), we did not find any significant interactions in this analysis.

Another possibility as to why relevance did not have an effect is that participants did not find REP to be a valuable system, and therefore, not relevant to their interests. We tested this explanation re-analyzing our data by incorporating our REP Value index. We might predict that as the value of the REP system increased, the effect of relevance might become more apparent. We mean-centered our REP Value index and regressed it onto information choice, with relevance and construal (and all interactions) as additional predictor variables. Results revealed a significant effect of construal ($b = .42$, $SE = .19$, $p = .03$), but no interaction.

Our analyses here did not support any of the above variables as possible moderator variables to account for the failure to produce an effect of relevance in our main analysis. It is possible that our measures did not sensitively assess the conceptual variables they were designed to, or that additional variables that we did not measure may be at play. We discuss this further in our *Limitations* section.

Construal. We then attempted to explain why construal-levels had the opposite effect from what we had expected. For the analyses that follow, we focus specifically on those participants in the high-relevance condition, as our primary hypotheses were concerned with how the high-relevance groups responded on the dependent measure. Specifically, we predicted construal-

levels to affect system information selection only for those who feel that the system is relevant to them. It is important to remember that high-level construals should lead people to pursue more long-term goals. Note, too, that preliminary findings indicated that in this study, participants under high-level construals preferred to receive more strength information about the REP system (a finding in contradiction to our predictions). We included a number of indices that could have potentially affected the way our participants responded on our system information scale. These indices theoretically might moderate our predicted effect, thus making it apparent under some conditions, but not others.

First, we assessed whether our Psychology REP knowledge items (knowledge of current Psychology REP strengths and weaknesses) could have served as proxies for system relevance. To test this possibility, we mean-centered and regressed both items with construal on the dependent measure of information choice. There were no significant results from these analyses.

Another possibility why higher level construals led to results that were opposite of what we predicted is that perhaps our subjects did not believe that the current REP system was valuable enough to them to bear the costs of improvement. To test this explanation, we regressed the mean-centered REP Value index with construal on the dependent measure of information choice. Results of this analysis did not support the explanation that value moderated the effect of construal level on information search as there was neither an effect of construal ($b = .27, SE = .27, p = .34$), nor a significant interaction between construal and perceived value of REP ($b = .01, SE = .03, p = .76$).

Participants might not be expected to seek out negative system information under higher-level construals if they did not value system improvement. To test this possible explanation, we regressed our Importance of REP Improvement index, mean-centered, with construal on the

dependent measure of information choice. There was no significant effect of construal but there was a marginally significant interaction between construal and importance of REP improvement ($b = -.13, SE = .08, p = .13$). Here, like the main analysis, all participants using low-level construals displayed a stronger preference for system weakness information than those using high-level construals (*see Fig. 2*). However, in our high-level construal participants, those who believed improving REP was more important showed a slightly stronger preference to read about system weaknesses than those who believed it was less important.

Figure 2

It is also possible that participants' would not seek weakness information because they do not believe that such system improvement is possible. If system improvement is not possible, then there is no reason to bear the costs of negative system information. To examine this possibility, we looked at our Perceived Possibility index, which summed two items assessing participants' belief that the change to REP is possible with nine items about the possibility of change at the university level. This item was mean-centered and regressed with construal on the dependent measure, resulting in a non-significant effect of construal ($b = .32, SE = .28, p = .26$) and interaction ($b = -.01, SE = .04, p = .71$).

Interestingly, however, one item on this index ("*How committed is this university to change*"), when mean-centered ($M = 5.01, SD = 1.08, scores ranging from 2 - 7$) and regressed with construal on the dependent measure did reveal significant interaction between belief of university commitment and construal ($b = -.46, SE = .22, p < .05$), although there was no effect of construal (*see Fig. 3*). This finding reveals that when participants believe that the university is

committed to change, thus believing that change is *possible*, high-level construals will lead them to seek out more weakness information about their REP system.

Figure 3

It was also possible that, if participants believed that questioning the status quo is something negative, they would be less willing to challenge the REP system by seeking weakness information. We tested this explanation by mean-centering our Evaluation of Others' Change index and regressing it with construal on the dependent measure. There was no main effect of construal ($b = .31, SE = .40, p = .44$), nor a significant interaction between this index and construal ($b = -.08, SE = .09, p = .41$), but we did find interesting results with one item on this index. When the item "*Is someone who questions the status quo a responsible citizen*" was mean-centered ($M = 5.16, SD = 1.04, scores ranging from 2 to 7$) and regressed with construal on the dependent measure, results revealed a marginal effect of construal ($b = .37, SE = .26, p = .16$) that was qualified by a significant interaction between this item and construal ($b = -.59, SE = .24, p = .02$) (see *Fig. 4*). Again, lower-level construals led to a significant preference for system weaknesses. Still, these results show that when participants believe that questioning the status quo is a responsible behavior, a high construal promotes them to question the status quo themselves, in this case by choosing to seek weakness information about their REP system.

In addition, we wanted to know if the extent to which participants were comfortable with improvement in other areas had an effect on the type of information they chose about REP. It is possible that subjects' would be less motivated to seek out system weaknesses to improve the

Figure 4

REP system if they were generally uncomfortable with change and improvement. We tested this possibility by mean-centering our Personal Evaluation of Improvement index and regressing it with construal on the dependent measure. Results of this analysis revealed a marginally significant effect of construal ($b = .35, SE = .27, p = .20$), as well as a marginally significant interaction between construal and a general desire for change and improvement ($b = -.12, SE = .08, p = .15$). Again, all participants using low-level construals displayed an overall preference for reading about the current REP system's weaknesses. However, our marginal interaction revealed that, in our high-level construal participants, those who believed that general improved change is more desirable expressed a higher preference to read about system weaknesses than those who believed general improved change was less desirable (*see Fig 5*).

Figure 5

Information Selection Check. Finally, it was possible that our participants' understanding of the implications of each type of system information (weaknesses vs. strengths) did not match up with our assumptions. Although we tested a similar assumption in our pilot study (*see Methods*), if participants in this study felt that they could achieve system change with strength information rather than weakness information, and system maintenance with weakness information rather than strength information, the results of our main analysis where subjects preferred strengths to weaknesses in the high construal/high relevance condition would make

better sense. To test this possibility, we turned to our information selection check items and conducted a within-subjects paired-samples t-test to compare scores of what kind of information participants wished to receive if they wanted to change a system vs. keep it the same (both items rated on a Likert-type scale where 1 = “*Weaknesses*” and 7 = “*Strengths*”). The results of this test revealed that participants shared our perspective, as there was a significant difference between the information chosen to change a system ($M = 2.82, SD = 1.90$) and the information chosen to keep a system the same ($M = 5.55, SD = 1.41$), $t(93) = 10.47, p < .01$.

Similarly, the results of our main analysis may be explained to some extent if our participants preferred system weakness information when they were happy with its functioning and system strength information when they were unhappy with its functioning. We conducted a within-subjects paired-samples t-test to compare our participants’ information selection when they are happy with a system’s functioning vs. unhappy (both items rated on a Likert-type scale where 1 = “*Weaknesses*” and 7 = “*Strengths*”). Interestingly, the results of this analysis did not reveal a significant difference between the information chosen when happy ($M = 4.52, SD = 2.02$) and unhappy ($M = 4.19, SD = 2.18$) with a system’s functioning, $t(93) = .83, p = .41$. This finding implies that students’ preference for system information is not a function of their own personal happiness with the system, but more directly about whether they have committed to change the system or not.

General Discussion

We proposed that in system-relevant information search people desire both to justify their system and to assess it accurately, and that these two motivations, like in a self-relevant information search, are in conflict with one another. Our hypotheses were that, people can

become open to negative system (REP) information if it is accurate and the individual desires improvement to the system; high-level construals should lead people to strive for this long-term goal of improvement by seeking information about REP's weaknesses more than its strengths; and only those participants for whom the system was relevant would care enough under high-level construals to seek an improvement through the acquisition of negative information.

The results of our main analysis did not support our hypotheses. Relevance did not have an effect on the dependent measure of system information choice. Moreover, those using low-level construals, not high-level construals as we expected, chose to read about REP weaknesses more than those using high-level construals.

We had hoped to find an answer as to why system relevance did not have the expected effect by performing additional analyses on the items intended to measure the relevance of REP to participants, but did not find any significant results. As noted earlier, it is possible that our measures did not sensitively assess the conceptual variables they were designed to, or that additional variables that we did not measure might be affecting our results. We discuss this issue further in the *Limitations* section.

Similarly, we tried to explain the opposite effect of construal levels by analyzing ancillary items that may have moderated participants' response on the dependent measure. Except for two specific cases, these analyses also produced non-significant results, encouraging the consideration of further alternative explanations. It is possible that, in contrast to the assumption that seeking information that will lead to REP improvements takes self-control, perhaps it actually takes an act of will to justify the REP system. REP students may generally believe that the effort needed to bring forth an improvement would be significantly more uncomfortable and undesirable over the long-term than leaving a potentially broken system alone. If this were the

case, their self-control conflict would involve a primary goal of system-maintenance and a secondary, less important goal of system improvement. Thus, a high-level construal would lead them not to seek information that would lead to improvement, but that which would lead to system-maintenance.

In the analyses of our information selection check items, we found that our participants did have a general understanding that in order to change a system, it is best to seek out information about its weaknesses. However, in contrast to our assumptions, we also found in these analyses that students did not believe that system weaknesses should be sought out when they are unhappy with the way the system is functioning. This finding suggests that just because people are unhappy with the status quo, it does not necessarily mean system-change concerns kick in. It lends credibility to our idea that our participants had to use self-control to justify the system, even if it left them dissatisfied. It is possible that the measures we used to assess these system improvement concerns did not adequately tap participants' goals related to the REP system.

Our results did reveal some interesting findings that add valuable insight as to when people do become open to negative system information. While low-level construals led to a general preference for system weaknesses in all circumstances, those participants using high-level construals who reported a strong belief that the university itself is committed to change sought system weakness information more than those who scored lower on this measure. Similarly, those using high-level construals who reported a strong belief that questioning the status quo is a responsible act were also more likely to seek weakness information as compared to those who did not share this belief.

We also found two marginally significant interactions that were in line with our predictions. Again, it is important to note that participants using lower-level construals

displayed a stronger preference for system weakness information than those who used higher-level construals in these analyses. In our higher-level construal participants, those who perceived an improvement to the REP system to be important displayed a slightly stronger preference for system weakness information than those who perceived improvement as less important. This finding lends some support to our assumption that, in order to pursue information that can facilitate system-change, one must believe that improvement is desirable. Additionally, those participants who used a higher-level of construal and reported a personal positive evaluation of improved change displayed a slightly higher preference for system weakness information than those who reported a more negative evaluation of improvement. This suggests that if a person generally desires improved change, they may be more likely to pursue system-change.

Thus, in system information search, not only should system relevance motivate people to seek information that can lead to improvement, but it is also necessary for people to believe that change is possible and that it is a responsible thing to pursue. In addition, our results suggest that individuals must first believe that system-improvement is important before taking action to make it happen. It may also be beneficial to hold the general belief that change and improvement are desirable and comfortable before pursuing it. When these factors are present, a high-level construal should lead individuals to pursue system information that is conducive to improvement.

Limitations

As mentioned earlier, we feel that we may not have included adequate measures with which to explain why system relevance did not produce the results that we expected in our

experiment. All items on the questionnaire relating to REP were created for this specific study, so it is very possible that important ways to assess whether or not students truly felt that the REP system was relevant to them were overlooked. For example, participants responded to questions asking how many REP experiments they had participated in and how much effort they believed they had put forth in this system. Perhaps these items merely measured the extent to which students spent time in this system, rather than how relevant they actually felt it was to their lives. It may have been more useful to directly ask participants how relevant they felt the REP system was to their life right now, rather than trying to obtain this measure indirectly.

It is also possible that our relevance manipulation itself was insufficient. We assumed that the School of Communication's REP system would be adequately unfamiliar and removed from our participants' experience to serve as an irrelevant system for them. However, because the School of Communications is a part of Ohio State, perhaps its connection to the university made this system still somewhat relevant to our participants. As there seems to be a large amount of "school spirit" on campus, it is likely that anything associated with Ohio State is meaningful for students, to some degree. If this were the case, it could explain why our relevance manipulation did not have an effect in the main analysis. Because we did not include any items that could have supported this assumption, we cannot rule this possibility out. Including items that measured how meaningful, and relevant, these two systems were to our participants would have allowed us to compare scores and determine if there was a meaningful difference. Furthermore, it may be that REP in general was not relevant to our participants. Surely, students do not have intense conversations about REP with friends and family outside of school, and it does not have a significant impact on their lives. It would have been beneficial to take more time prior to running our main study to determine which of the social systems students are involved in are the

most important to them.

It would have also have been beneficial to include a construal level manipulation check in our materials. Because we did not have a way to check our participants' level of construal, we do not have a way of knowing if the construal they were using to think about the REP scenario was indeed what we intended them to have. The construal-level manipulation was intended to produce a comparative difference in construal between the two conditions. Though the method used to manipulate construal levels has been shown to produce this effect (see Freitas et al., 2004; Fujita et al., 2006 for a review), it may be that our participants did not sufficiently internalize the way in which we prompted them to think. As we did not include a manipulation check for construal, this possibility cannot be ruled out. One such manipulation that we could have included is the Behavior Identification Form (BIF; Vallacher & Wegner, 1989). The BIF is a dichotomous-response questionnaire that assesses how individuals perceive a variety of behaviors – in terms of its high-level, utilitarian features or its low-level, implemental features. The questionnaire consists of twenty-five actions that have two options with which to identify them, alternating high and low-level identifications in the first option to control for selection bias. To elaborate, for “*eating*” one can choose either “*getting nutrition*” (high-level construal) or “*chewing and swallowing*” (low-level construal) to identify the action. Similarly, “*locking a door*” may be seen as “*putting a key in a lock*” (low-level construal) or “*securing the house*” (high-level construal) (Vallacher & Wegner, 1989). Liberman and Trope (1998) have shown that individuals induced to use higher-level construals make more high-level responses on the BIF, and those induced to lower-level construals make more low-level responses.

Another limitation is that the present study is based on a recently developed literature in the field of social psychology, and we may have underestimated the complexities involved in this

research. For instance, the literature on system justification is fairly new (see Jost, et al., 2004 for a review), so the psychological mechanisms underlying system justification may not yet be fully understood. Similarly, mapping the psychological processes involved in a self-relevant information search onto a system-relevant search ventures into uncharted territory. The self-control conflict found in an information search concerning the self may be much stronger for an individual than that found in an information search regarding a relevant social system. This could be due to the fact that it is unlikely that a system can ever be as relevant to a person as his or her own traits and abilities. It could also be that it's even scarier to change one's system than to change one's self. Thus, it may be more complicated than anticipated to match the processes involved in a self-relevant information search to a system-relevant information search.

A final limitation to our study, and one that is beyond our control, is the current political and economic climate of the United States. To explain, throughout his campaign, President Obama's message to the country was centered on the promotion of change aimed to "fix" the problems that the Bush administration had created. The fact that Barack Obama eventually succeeded in becoming the president of the United States is a message in itself that change should be sought after in order to achieve an improved system. Similarly, the current debate over the development of a changed US health care system is focused on (at least on one side of the debate) improving a broken system. However, since his election, the change that Obama had promised has been slow coming. When our experiment was carried out the health care bill still had not passed, and other aspects of society seemed to have remained stagnant. Furthermore, the recent decline in the US economy has brought to light numerous failures of social systems, the banking industry in particular, which could likely have been prevented with closer attention to the "bigger picture". The resulting bailouts of these corporations were disheartening for many

because in light of the “change” that had been advertised, rewarding these broken systems seemed counterproductive.

In sum, our participants are living at a time where *change* is a very salient concept, especially in regard to social systems, but not often taking place. It is possible that this environment has influenced individual’s goals. Recall that our participants preferred system information that would help to maintain the current system when using high-level construals (and thus, should be pursuing their primary goal). Perhaps these individuals feel so discouraged by the lack of materialization of the change that has been promised to them, their central goal is to now *support* their social systems, regardless of how they believe they are functioning. This would explain why it seems that system justification was the primary motivation for our participants using a high-level construal. Of course we cannot support this explanation in our study, but this could prove to be an interesting future line of research.

This study was designed to determine when individuals are willing to question the status quo by means of becoming open to negative system information. We predicted that people who are unhappy with the way their social system is functioning would be more apt to seek out information that could lead to system-improvement than system enhancement when using a more abstract perspective. We found, contrary to our predictions, that system-dissatisfaction alone did not promote more concern for system-improvement any more than satisfaction with one’s system. Participants using a low-level construal displayed an overall preference for system weaknesses in all cases.

However, we also found that those who believed that questioning the status quo is a responsible action to take and that system-change is possible *did* seek out negative system-information when they used an abstract perspective to think about the situation. Additionally,

individuals who believed that system-improvement was important and reported a personal desire for improved change displayed a slight preference for system weakness information than those who did not, respectively. Therefore, we conclude from our findings that not only system-dissatisfaction should be present before becoming open to system-change, but people must feel that the action of making the change is responsible and possible. Moreover, it would likely be beneficial to believe that improved change in general is desirable, and that system-improvement is important. In future research, it would be interesting to manipulate these beliefs in participants in order to garner support for these predictions.

References

- Bayer, U. C., & Gollwitzer, P. M. (2005). Mindset effects on information search in self-evaluation. *European Journal of Social Psychology, 35*, 313 – 327.
- DeNavas-Walt, C.; Proctor, B. D. & Smith, J. C. (2009, September). *Income, poverty, and health insurance coverage in the united states: 2008*. Retrieved December 10, 2009, from U. S. Census Bureau Web Site: <http://www.census.gov/prod/2009pubs/p60-236.pdf>
- Freitas, A. L., Langsam, K. L., Clark, S. & Moeller, S. J. (2008). Seeing oneself in one's choices: Construal level and self-pertinence of electoral and consumer decisions. *Journal of Experimental Social Psychology, 44*, 1174 – 1179.
- Freitas, A.L., Gollwitzer, P. M., & Trope, Y. (2004). The influence of abstract and concrete mindsets on anticipating and guiding others' self-regulatory efforts. *Journal of Experimental Social Psychology, 40*, 739-752.
- Freitas, A. L., Salovey, P. & Liberman, N. (2001). Abstract and concrete self-evaluative goals. *Journal of Personality and Social Psychology, 80*, 410-424.
- Fujita, K., Trope, Y., Liberman, N. & Levin-Sagi, M. (2006). Construal levels and self-control. *Journal of Personality and Social Psychology, 90*, 351-367.
- Fujita, K. (2008). Seeing the forest beyond the trees: A construal-level approach to self-control. *Social and Personality Compass, 2* (3), 1475-1496.
- Jost, J. T., & Hunyady, O. (2005). Antecedents and consequences of system-justifying ideologies. *Current Directions in Psychological Science, 14*, 260 – 265.

- Jost, J. T., Banaji, M. R. & Nosek, B. A. (2004). A decade of system justification theory: Accumulated evidence of conscious and unconscious bolstering of the status quo. *Political Psychology, 25* (6), 881 – 919.
- Jost, J. T.; Glaser, J.; Kruglanski, A. W. & Sulloway, F. J. (2003). Political conservatism as motivated social cognition. *Psychological Bulletin, 129* (3), 339 – 375.
- Jost, J. T. & Hunyady, O. (2002). The psychology of system justification and the palliative function of ideology. *European Review of Social Psychology, 13*, 111 – 153.
- Kay, A. C., Jimenez, M. C. & Jost, J. T. (2002). Sour grapes, sweet lemons, and the anticipatory rationalization of the status quo. *Personality and Social Psychology Bulletin, 28*, 1300 – 1312.
- Liberman, N., & Trope, Y. (1998). The role of feasibility and desirability considerations in near and distant future decisions: A test of temporal construal theory. *Journal of Personality and Social Psychology, 75*, 5 – 18.
- Raghunathan, R. & Trope, Y. (2002). Walking the tightrope between feeling good and being accurate: Mood as a resource in processing persuasive messages. *Journal of Personality and Social Psychology, 83*, 510 – 525.
- Sedikides, C. & Gregg, A. P. (2008). Self-enhancement: Food for thought. *Perspectives in Psychological Science, 3*, 102 – 115.
- Sedikides, C. & Strube, M. J. (1997). Self-evaluation: To thine own self be good, to thine own self be sure, to thine own self be true, and to thine own self be better. *Advances in Experimental Social Psychology, 29*, 209 – 269.

Trope, Y., Liberman, N. & Wakslak C. (2007). Construal levels and psychological distance:

Effects on representation, prediction, evaluation, and behavior. *Journal of Consumer*

Psychology, 17, 83 – 95.

Trope, Y. & Liberman, N. (2003). Temporal construal. *Psychological Review*, 110, 403 – 421.

Trope, Y. & Neter, E. (1994). Reconciling competing motives in self-evaluation: The role of

self-control in feedback seeking. *Journal of Personality and Social Psychology*, 66, 646 –

657.

Vallacher, R. R., & Wegner, D. M. (1989). Levels of personal agency: Individual variation in

action identification. *Journal of Personality and Social Psychology*, 57 (4), 660 – 671.

Appendix A: High-level construal manipulation

“Why Do We Do the Things We Do?”

For every thing we do, there always is a reason why we do it. Moreover, we often can trace the causes of our behavior back to broad life-goals that we have. For example, you currently are participating in a psychology experiment. Why are you doing this? Perhaps to satisfy a course requirement. Why are you satisfying the course requirement? Perhaps to pass a psychology course. Why pass the course? Perhaps because you want to earn a college degree. Why earn a college degree? Maybe because you want to find a good job, or because you want to educate yourself. And perhaps you wish to educate yourself or find a good job because you feel that doing so can bring you happiness in life.

Research suggests that engaging in thought exercise like that above, in which one thinks about how one’s actions relate to one’s ultimate life goals, can improve people’s life satisfaction. In this experiment, we are testing such a technique. This thought exercise is intended to focus your attention on why you do the things you do.

For this thought exercise, please consider the following activity: “Recycling.”

1a. In the space below, please list one way in which recycling could help you meet an important life goal that you have.



1b. How much will recycling help you meet this important goal? *Please circle one:*

A little Somewhat Pretty Much Very Much Very, Very Much

2a. In the space below, please list one way in which recycling could help you meet another important life goal that you have.



2b. How much will recycling help you meet this important goal? *Please circle one:*

A little Somewhat Pretty Much Very Much Very, Very Much

3a. In the space below, please list one way in which recycling could help you meet another important life goal that you have.

3b. How much will recycling help you meet this important goal? *Please circle one:*

A little

Somewhat

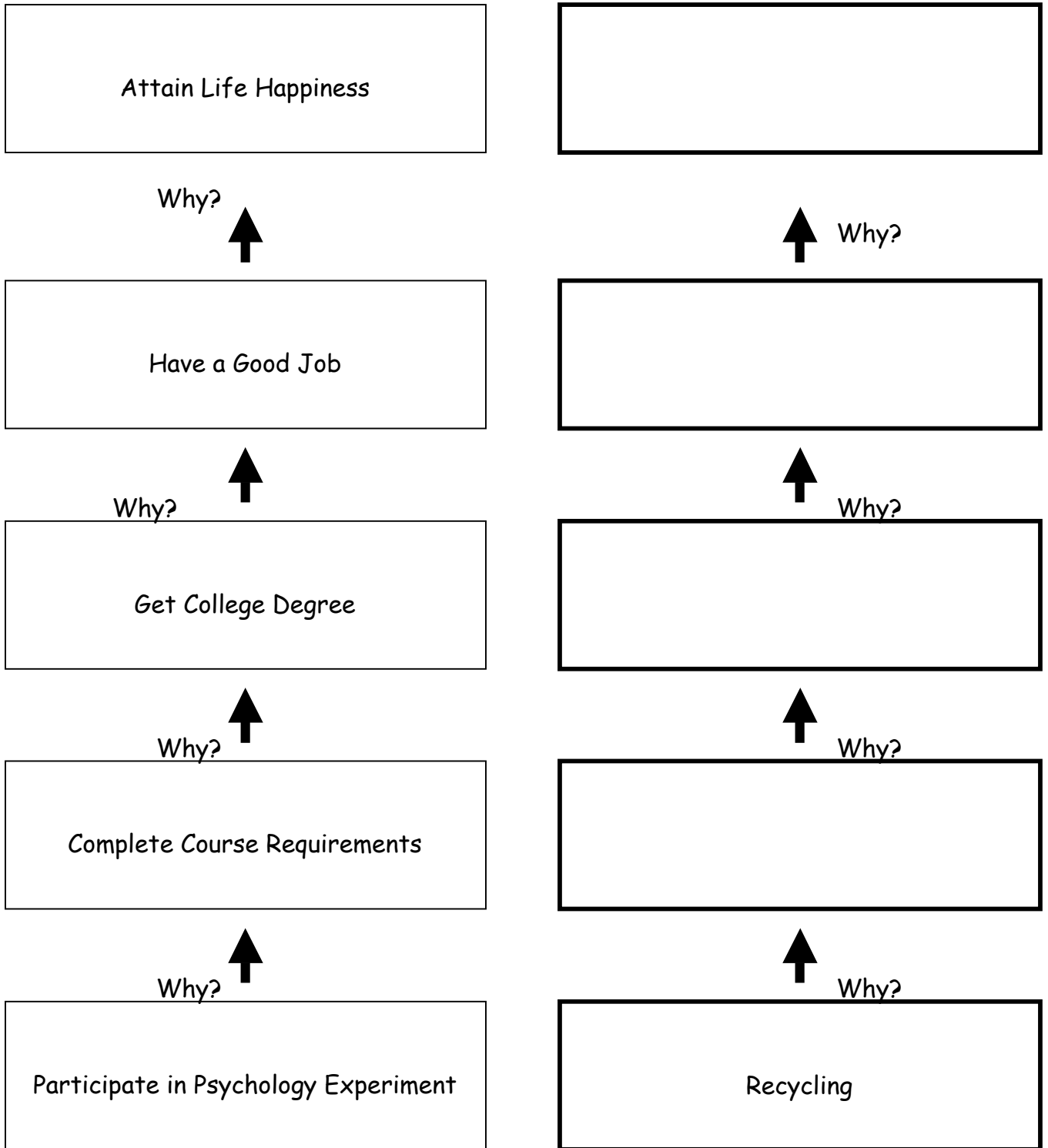
Pretty Much

Very Much

Very, Very Much

To show how the activity of “improving and maintaining your recycling levels” can help you meet important life goals that you have, please fill in the 4 blank boxes below, in the series on the right. Beginning in the lowest blank box (the one just above the box labeled “Improve and Maintain Recycling Levels”), fill in each box by answering the question “Why do I engage in the behavior described in the immediately lower box?”

To help you with this exercise, the rectangles on the left show how our example, participating in a psychology experiment, can be linked to important life goals.



Appendix B: Low-level construal manipulation

“How Do We Do the Things We Do?”

For everything we do, there always is a process of how we do it. Moreover, we often can follow our broad life-goals down to our very specific behaviors. For example, like most people, you probably hope to find happiness in life. How can you do this? Perhaps finding a good job, or being educated, can help. How can you do these things? Perhaps by earning a college degree. How do you earn a college degree? By satisfying course requirements. How do you satisfy course requirements? In some cases, such as today, you participate in a psychology experiment.

Research suggests that engaging in thought exercise like that above, in which one thinks about how one’s ultimate life goals can be expressed through specific actions, can improve people’s life satisfaction. In this experiment, we are testing such a technique. This thought exercise is intended to focus your attention on how you do the things you do.

For this thought exercise, please consider the following activity: “Recycling.”

1a. In the space below, please list something you could do in order to reach the goal of recycling.

1b. How much will engaging in this activity help you to reach the goal of recycling?

Please circle one:

A little Somewhat Pretty Much Very Much Very, Very Much

2a. In the space below, please list something else you could do in order to help you reach the goal of recycling.

2b. How much will engaging in this activity help you to reach the goal of recycling?

Please circle one:

A little Somewhat Pretty Much Very Much Very, Very Much

3a. In the space below, please list something else you could do in order to reach the goal of recycling.

3b. How much will engaging in this activity help you to reach the goal of recycling?

Please circle one:

A little

Somewhat

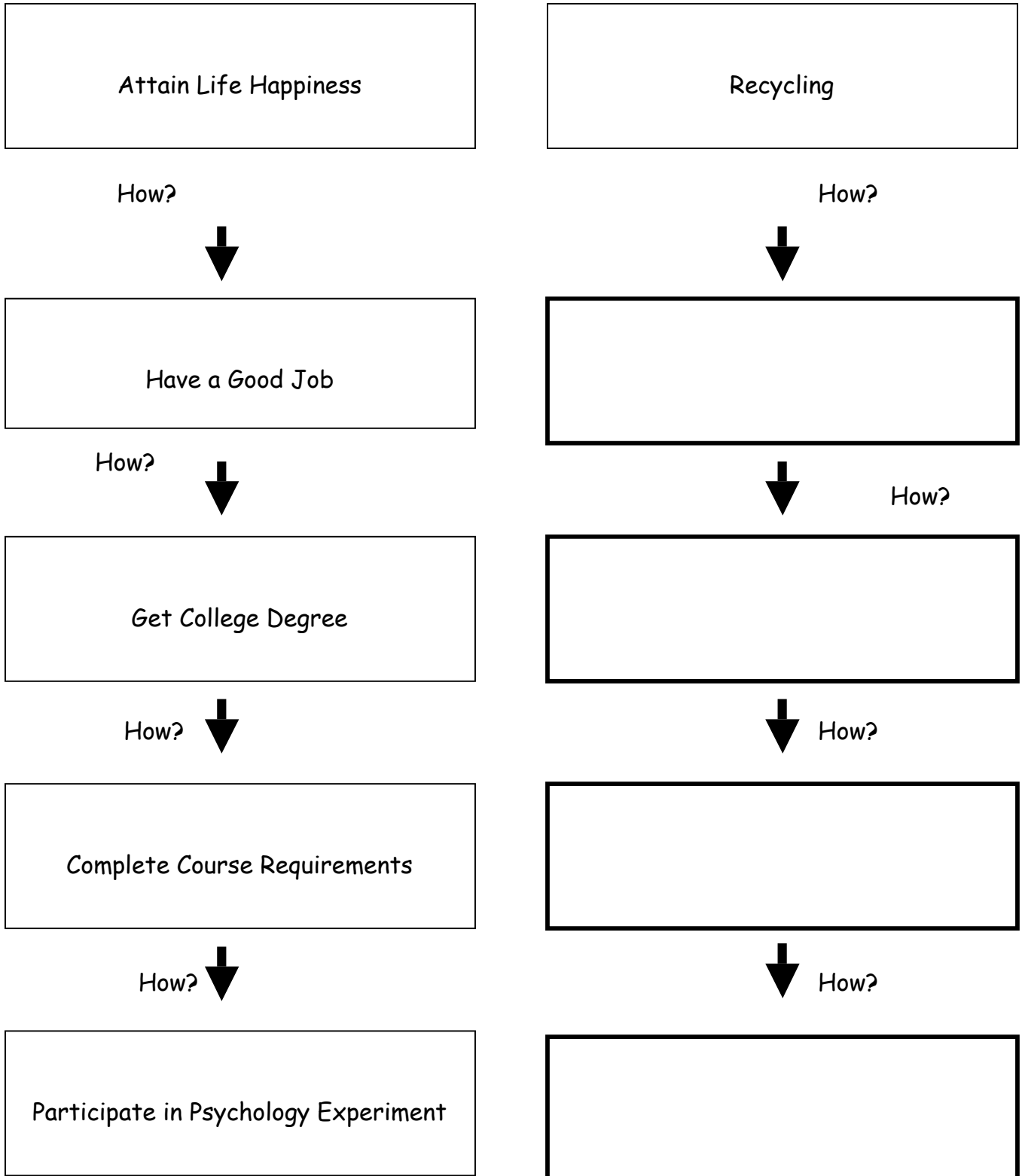
Pretty Much

Very Much

Very, Very Much

To show how the goal of “recycling” can be met through specific activities, please fill in the 4 blank boxes below, in the series on the right. Beginning in the highest blank box (the one just below the box labeled “Recycling”), fill in each box by answering the question “How I can meet the goal described in the immediately higher box?”

To help you with this exercise, the boxes on the left show how our example, attaining life happiness, can be linked to specific activities.



Appendix C: Relevant system scenario & dependent measure

Please take a moment to carefully read the scenario below and provide your responses to the questions that follow:

The current REP system has recently undergone review by The Ohio State Psychology Department. These analyses have brought to light both positive and negative aspects of the current system. This has prompted intense discussion on whether it would be in Psychology 100 students’ and the department’s best interests to change the current system, or to keep things the same. **Any change will entail one of the following:**

A large reduction of the number of research hours and essays Psychology 100 students are required to complete, a 10-essay requirement without the experimental option, or another alternative that is still under review.

If a change were instituted, this change would take place this quarter and would have an impact on your REP experience.

A decision has not been made yet, and because it may directly affect current REP students, you have the opportunity to contribute your opinion to help determine what to do. Before giving your input, you will need to read some information about how the current REP system is working. However, in this session, you will only be able to read either:

Weaknesses about the current REP system

OR

Strengths about the current REP system

****Please keep in mind the faculty wants to hear your opinion, and will use it to determine what steps to take with the REP system. ****

1. Please use the following scale to indicate the degree to which you would like to receive one type of information about the current REP system over the other:

Weaknesses

1

2

3

4

5

6

7

Strengths

2. Which type of information would you like to receive about the current REP system?

a.) Weaknesses

b.) Strengths

Appendix D: Irrelevant system scenario & dependent measure

Please take a moment to carefully read the scenario below and provide your responses to the questions that follow:

The School of Communication’s REP system is identical to the Psychology Department’s REP system here at OSU. Recently, The School of Communication’s current REP system has undergone review. These analyses have brought to light both positive and negative aspects of their current system. This has prompted intense discussion on whether it would be in Communication undergraduate students’ and the department’s best interests to change the current system, or to keep things the same. **Any change will entail one of the following:**

A large reduction of the number of research hours and essays Communications REP students are required to complete, a 10-essay requirement without the experimental option, or another alternative that is still under review.

If a change were instituted, this change would take place this quarter and would have an impact on their REP experience.

A decision has not been made yet, and because Ohio State’s REP students can provide valuable insight into this matter, you have the opportunity to contribute your opinion to help determine what to do. Before giving your input, you will need to read some information about how the current REP system is working. However, in this session, you will only be able to read either:

Weaknesses about The School of Communication’s current REP system
OR
 Strengths about The School of Communication’s current REP system

****Please keep in mind the faculty wants to hear your opinion, and will use it to determine what steps to take with the REP system. ****

3. Please use the following scale to indicate the degree to which you would like to receive one type of information about The School of Communication’s current REP system over the other:

Weaknesses							Strengths
1	2	3	4	5	6	7	

4. Which type of information would you like to receive about The School of Communication’s current REP system?

- a.) Weaknesses
- b.) Strengths

Appendix E: Knowledge of the Communications & Psychology REP system

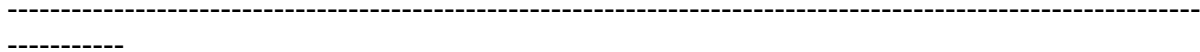
Please note that the following questions pertain to the School of Communication's REP system.

5. How much do you know about The School of Communication REP system's current strengths?

Nothing **Very much**
 1 2 3 4 5 6 7

6. How much do you know about The School of Communication REP system's current weaknesses?

Nothing **Very much**
 1 2 3 4 5 6 7



Please note that the rest of the questions pertain to the Psychology Department's (your) REP system.

7. How much do you already know about your REP's current strengths?

Nothing **Very much**
 1 2 3 4 5 6 7

8. How much do you already know about your REP's current weaknesses?

Nothing **Very much**
 1 2 3 4 5 6 7

Appendix F: Amount of time spent in REP

1. How many REP studies have you participated in, including this session?

Appendix G: REP Value index

1. How much do you enjoy participating in REP studies?

Not at all **Extremely**
 1 2 3 4 5 6 7

2. How much do you think you have learned while participating in REP?

Nothing **Very much**
 1 2 3 4 5 6 7

3. To what extent do you feel that you are making a valuable contribution to science by participating in REP?

Not at all **Extremely**
 1 2 3 4 5 6 7

4. From your experience and knowledge, how well do you think REP is currently working?

Very badly **Very well**
 1 2 3 4 5 6 7

5. Ignoring the negative features, how positively do you feel about REP?

Not at all **Extremely**
 1 2 3 4 5 6 7

6. Ignoring the positive features, how negatively do you feel about REP?

Not at all **Extremely**
 1 2 3 4 5 6 7

Appendix H: Importance of REP Improvement index

1. How important is it to you that REP improves?

Not at all **Extremely**
 1 2 3 4 5 6 7

2. Do you think that improvement of REP should be sought after, even if it entails a drastic change?

Not at all **Extremely**
 1 2 3 4 5 6 7

3. How important is it to you that REP is functioning at the best of its ability?

Not at all **Extremely**
 1 2 3 4 5 6 7

Appendix I: Perceived Possibility index

1. How possible do you think it is that any of the potential changes to the current REP system can improve your REP experience?

Not at all **Extremely**
 1 2 3 4 5 6 7

2. To what extent do you feel that students' opinions about REP will impact the final outcome of this decision?

Not at all **Extremely**
 1 2 3 4 5 6 7

The following statements pertain to The Ohio State University. Please indicate the degree to which you agree with the statements below by circling the most correct response.

1. This university welcomes change.

Not at all **Extremely**
 1 2 3 4 5 6 7

2. This university embraces new ideas.

Not at all **Extremely**
 1 2 3 4 5 6 7

3. This university is not open to new suggestions.

Not at all **Extremely**
 1 2 3 4 5 6 7

4. This university is receptive to substantial changes.

Not at all **Extremely**
 1 2 3 4 5 6 7

5. In this university, major change is resisted.

Not at all **Extremely**
 1 2 3 4 5 6 7

6. Talk of change in this university is strong, but actual change is questionable.

Not at all **Extremely**
 1 2 3 4 5 6 7

7. This university would rather fight to keep current policies than switch to new ones.

Not at all **Extremely**
 1 2 3 4 5 6 7

8. This university relishes innovation.

Not at all **Extremely**
 1 2 3 4 5 6 7

9. This university is committed to change.

Not at all **Extremely**
 1 2 3 4 5 6 7

Appendix J: Other measures of REP not included in analyses

1. How would you feel if REP was eliminated and an essay-only requirement was implemented instead?

Very negatively

Very positively

1 2 3 4 5 6 7

2. How uncomfortable would you be if REP were changed into something that is unfamiliar to you?

Not at all

Extremely

1 2 3 4 5 6 7

3. To what extent would you feel you were “losing” or “missing out on” something valuable if REP were eliminated?

Not at all

Extremely

1 2 3 4 5 6 7

Appendix K: Evaluation of Others' Change index

1. Is someone who questions the status quo a responsible citizen?

Not at all **Extremely**
 1 2 3 4 5 6 7

2. Is someone who questions the status quo a heretic?

Not at all **Extremely**
 1 2 3 4 5 6 7

3. Is someone who questions the status quo an irrational individual?

Not at all **Extremely**
 1 2 3 4 5 6 7

4. Is someone who questions the status quo an innovator?

Not at all **Extremely**
 1 2 3 4 5 6 7

5. Is someone who questions the status quo a trouble-maker?

Not at all **Extremely**
 1 2 3 4 5 6 7

6. Is someone who questions the status quo an open-minded individual?

Not at all **Extremely**
 1 2 3 4 5 6 7

Appendix L: Personal Evaluation of Improvement index

1. How important is it to you that your social systems function at the best of their ability?

Not at all **Extremely**
 1 2 3 4 5 6 7

2. How important is it to you that social systems strive to be the best they can be?

Not at all **Extremely**
 1 2 3 4 5 6 7

3. How much do you agree with the statement, “There is always room for improvement”?

Not at all **Extremely**
 1 2 3 4 5 6 7

4. How much do you agree with the statement, “Universities should always strive to improve their policies”?

Not at all **Extremely**
 1 2 3 4 5 6 7

5. To what extent do you think that improvement should be sought after, even if it entails a drastic change?

Not at all **Extremely**
 1 2 3 4 5 6 7

Appendix M: Personal evaluation of change items not included in analyses

1. How comfortable are you with change?

Not at all **Extremely**
 1 2 3 4 5 6 7

2. How much do you value routine?

Not at all **Extremely**
 1 2 3 4 5 6 7

3. How often do you wonder if the “way things are” should be different?

Not at all **Extremely**
 1 2 3 4 5 6 7

4. Would you participate in a student-run organization whose focus is to promote improved, but very different, university policy if you were able to?

Not at all **Extremely**
 1 2 3 4 5 6 7

5. Do you prefer to focus on strengths or weaknesses of the social systems that affect you?

Not at all **Extremely**
 1 2 3 4 5 6 7

Appendix N: Demographic items

1. How old are you?

2. What is your major?

3. What is your gender?

a. Male

b. Female

4. Is English your first language?

a. Yes

b. No

5. How would you describe your political orientation?

Conservative

1

2

3

4

5

6

7

Liberal

Appendix O: Information selection check

1. If you are happy with the way REP is functioning, what kind of information would be best to receive?

Weaknesses							Strengths
1	2	3	4	5	6	7	

2. If you are unhappy with the way REP is functioning, what kind of information would be best to receive?

Weaknesses							Strengths
1	2	3	4	5	6	7	

3. If you want to keep REP the same, what kind of information would be best to receive?

Weaknesses							Strengths
1	2	3	4	5	6	7	

4. If you want to change REP, what kind of information would be best to receive?

Weaknesses							Strengths
1	2	3	4	5	6	7	

Figure Captions

Figure 1. Univariate ANOVA of interaction between construal level and system relevance. Use of system motive was determined by a scale of preferred system information of 1 (*current system weaknesses*) to 7 (*current system strengths*).

Figure 2. Linear Regression of construal, mean-centered Importance of REP Improvement index, and the interaction of construal and the index onto the scale of preferred system information of 1 (*current system weaknesses*) to 7 (*current system strengths*).

Figure 3. Linear Regression of construal, mean-centered item of belief that “*This university is committed to change*”, rated on a scale of 1 (*not at all*) to 7 (*extremely*), and the interaction of construal and the university commitment item onto the scale of preferred system information of 1 (*current system weaknesses*) to 7 (*current system strengths*).

Figure 4. Linear Regression of construal, mean-centered item of belief that “*A person who questions the status quo is a responsible citizen*”, rated on a scale of 1 (*not at all*) to 7 (*extremely*), and the interaction of construal and the responsible item onto the scale of preferred system information of 1 (*current system weaknesses*) to 7 (*current system strengths*).

Figure 5. Linear Regression of construal, mean-centered Personal Evaluation of Improvement index, and the interaction of construal and the index onto the scale of preferred system information of 1 (*current system weaknesses*) to 7 (*current system strengths*).

Figure 1

Effect of construal $F(1, 92) = 5.05, p = .03$

Interaction between system relevance and construal $F(1, 92) = .26, p = .62$

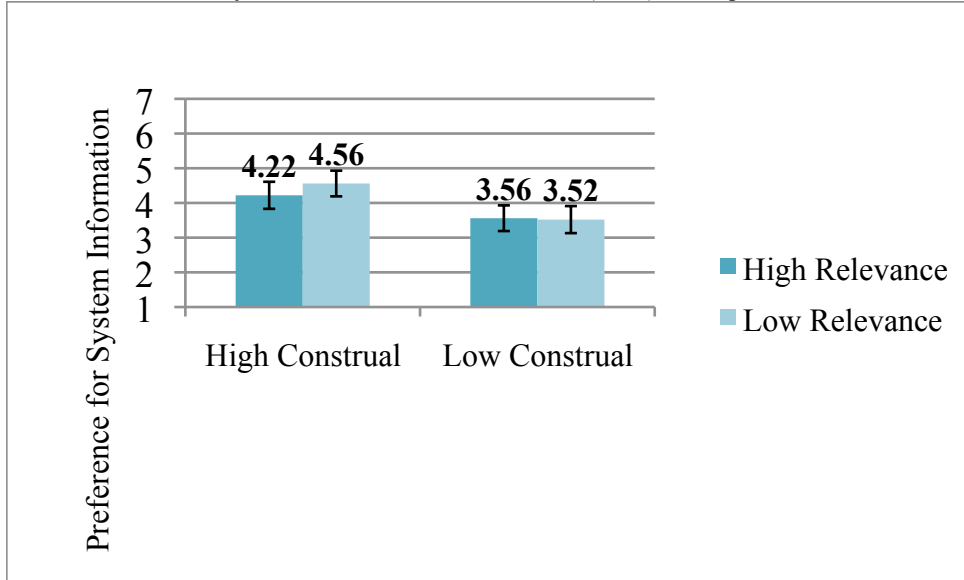


Figure 2

Interaction between construal and importance of REP improvement ($b = -.13, SE = .08, p = .13$)

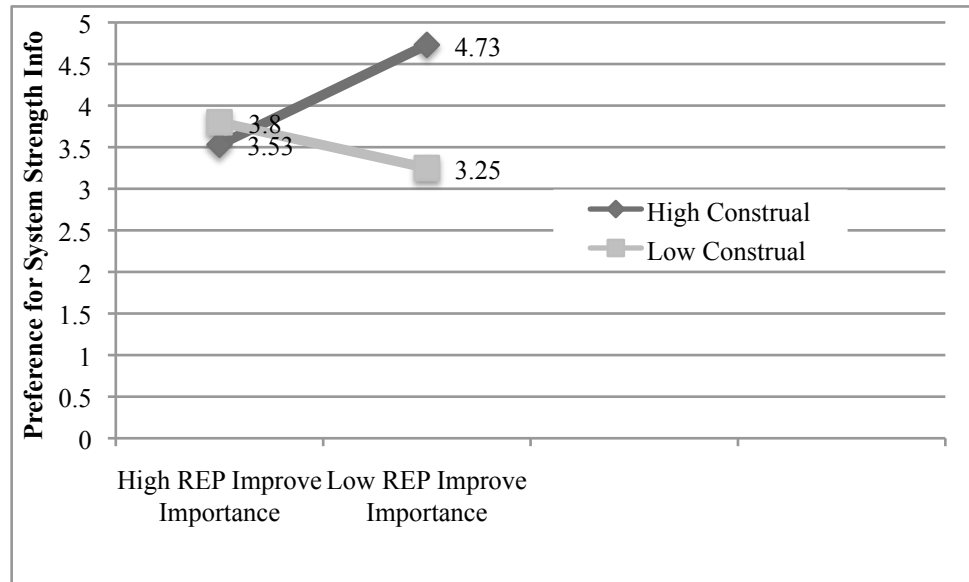


Figure 3

Interaction between belief of university commitment and construal ($b = -.46, SE = .22, p < .05$)

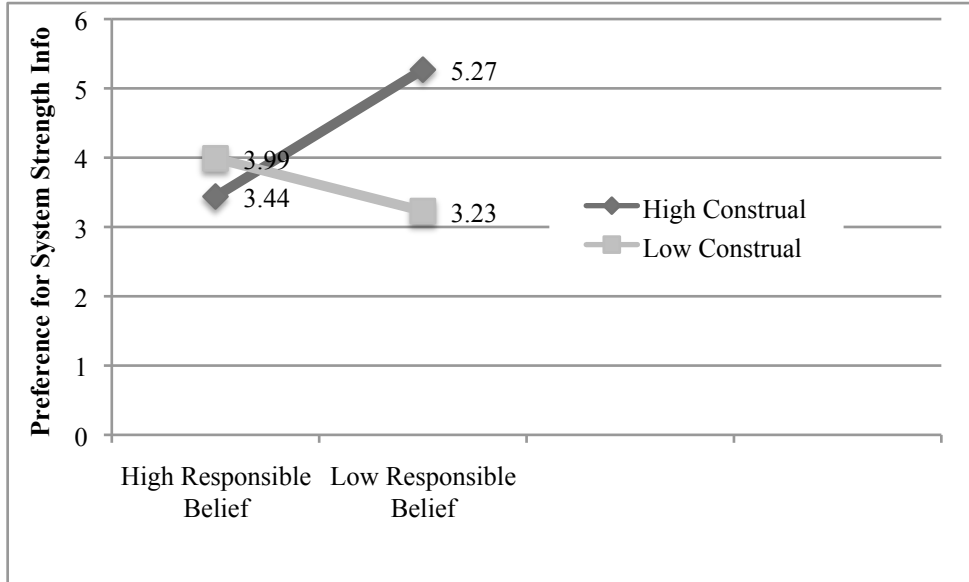


Figure 4

Effect of construal ($b = .37, SE = .26, p < .16$)

Interaction between belief questioning the status quo is responsible and construal ($b = -.59, SE = .24, p = .02$)

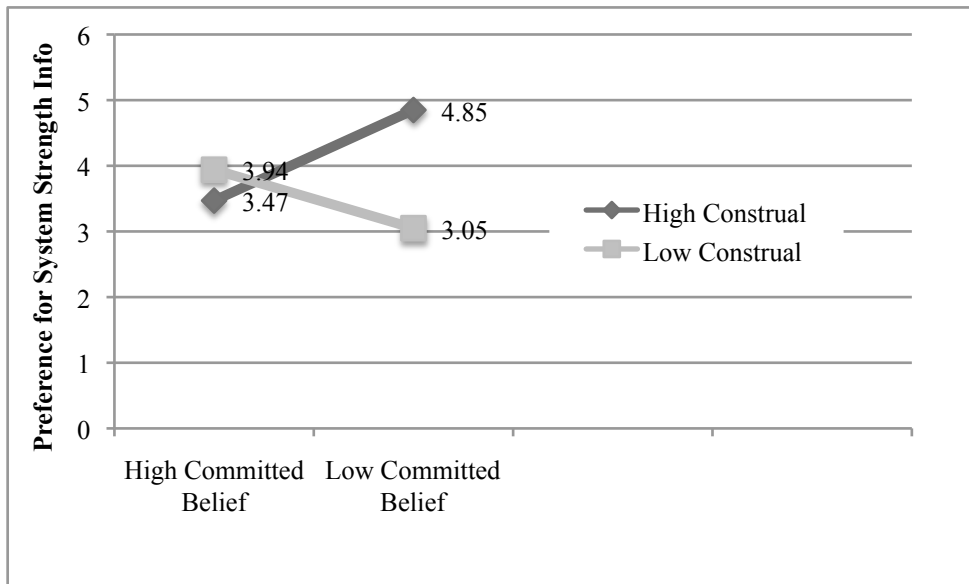


Figure 5

Effect of construal ($b = .35, SE = .27, p = .20$)

Interaction between construal and a general desire for change and improvement ($b = -.12, SE = .08, p = .15$)

