The Consequences of Social Exclusion on Women's Negative Emotions and Self-Regulation of Unhealthy Eating

Caitlin Shaw

California State University - San Bernardino

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THE CONSEQUENCES OF SOCIAL EXCLUSION ON WOMEN’S NEGATIVE
EMOTIONS AND SELF-REGULATION OF UNHEALTHY EATING

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Psychological Science

by
Caitlin Marie Shaw
June 2020
THE CONSEQUENCES OF SOCIAL EXCLUSION ON WOMEN’S NEGATIVE EMOTIONS AND SELF-REGULATION OF UNHEALTHY EATING

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Approved by:

Dr. Donna M. Garcia, Committee Chair, Psychology

Dr. Miranda McIntyre, Committee Member

Dr. Ismael Diaz, Committee Member
ABSTRACT

Social exclusion can be psychologically harmful. Two known consequences of social exclusion are increased negative emotions (Williams, Cheung, & Choi, 2000) and a lowered ability to self-regulate eating behaviors (Baumeister, DeWall, Ciarocco, & Twenge, 2005). These effects have been shown for both individual exclusion (due to a person’s unique characteristics or attributes) and group exclusion (due to a person’s social identity such as gender or ethnicity). Typically, individual social exclusion is elicited through methods such as “life alone” or the “no one chose you” paradigms. Because both of these forms of individual exclusion suggest the person has enduring undesirable traits, the exclusion is likely seen by participants as legitimate. Group exclusion, on the other hand, tends to be elicited through exposing participants to a discriminatory outcome. Because by definition discrimination entails unfair exclusion based on (typically) enduring social identities (e.g., gender or ethnicity), group exclusion is likely experienced by participants as illegitimate. To my knowledge, there has been no research that has directly compared the two types of exclusion or disambiguated the effects of exclusion legitimacy, or fairness. I propose that both forms of exclusion are equally harmful for emotional experiences and self-regulation, although under different circumstances of fairness. Individual versus group exclusion can have different implications for the perceived threat of future exclusion depending on whether the exclusion is fair or unfair. Individual exclusion that is fair (e.g., because of low ability) might be perceived as a more
pervasive threat (i.e., more likely to recur) because it is due to an enduring personal trait. Group exclusion, however, might be perceived as a more pervasive threat when it is unfair because it reminds people that they face future exclusion because of their enduring social identity. With this research project, I aim to isolate the effects of individual versus group exclusion on negative emotion and self-regulation by examining whether these effects vary depending on whether or not the exclusion is legitimate (fair) or illegitimate (unfair). I hypothesize that participants who experience individual exclusion that is fair or group exclusion that is unfair will report greater negative emotions than those who experience individual exclusion that is unfair and those who experience group exclusion that is fair. I additionally hypothesize that participants in the individual fair condition and the group unfair condition will also consume more calories on average compared to those in the individual unfair and group fair conditions, demonstrating lowered self-regulation abilities. Finally, I predict that the interactive effect of legitimacy (fair vs. unfair) and exclusion type (individual vs. group) will influence self-regulation indirectly through negative emotions.
ACKNOWLEDGEMENTS

This research was funded by grants awarded to Caitlin M. Shaw and Dr. Donna M. Garcia by California State University, San Bernardino’s Office of Student Research and Associated Students Incorporated. The online “CSUSB Survivor” program was conceptualized by Dr. Donna M. Garcia and developed by Humberto Romo.
# TABLE OF CONTENTS

ABSTRACT ................................................................................................................................. iii

ACKNOWLEDGEMENTS ........................................................................................................ v

CHAPTER ONE: AN INTRODUCTION TO SOCIAL EXCLUSION ............................................ 1

   Effects of Social Exclusion on Negative Emotions and Self-Regulation .... 1

      Negative Emotions ........................................................................................................... 1

      Self-Regulation .............................................................................................................. 2

   Types of Social Exclusion ................................................................................................. 3

      Individual Exclusion ..................................................................................................... 5

      Group Exclusion .......................................................................................................... 6

   Exclusion, Identity, and Fairness ..................................................................................... 7

   The Influence of Negative Affect on Self-Regulation ..................................................... 9

   Overview of Present Research ......................................................................................... 10

CHAPTER TWO: METHOD ...................................................................................................... 13

   Participants ....................................................................................................................... 13

   Materials and Procedure .................................................................................................. 13

   Preliminary Survey .......................................................................................................... 14

      The Cover Story ........................................................................................................... 14

   Survivor Program ............................................................................................................. 15

   Primary Survey ............................................................................................................... 18

   Self-Regulation Measure (Via M&M Consumption) ...................................................... 19

   Final Survey ..................................................................................................................... 21

   Manipulations .................................................................................................................. 21
CHAPTER ONE
AN INTRODUCTION TO SOCIAL EXCLUSION

Social exclusion is psychologically harmful. Experiencing social exclusion can result in several consequences including feelings of negative affect (Williams, Cheung, & Choi, 2000), anxiety (Leary, 1990), lowered self-esteem (Leary, Tambo, Terdal, & Downs, 1995), and impaired self-regulation (Baumeister, DeWall, Ciarocco, & Twenge, 2005). Social exclusion is an aversive experience for humans because social belonging is a fundamental human need (Baumiester & Leary, 1995). To meet this need, people strive to establish social connections and achieve feelings of belonging within social groups (Leary et al., 1995). When people experience social exclusion, their belonging needs are thwarted and they are prone to experience negative psychological outcomes (Baumiester, et al., 2005; Leary, et al., 2005). Although social exclusion can produce several forms of psychological harm, I am particularly interested in the effects of exclusion on emotional well-being and the ability to self-regulate eating impulses.

Effects of Social Exclusion on Negative Emotions and Self-Regulation

Negative Emotions

Research finds that experiencing social exclusion can be detrimental to emotional experience. For example, Hayman, McIntyre, and Abbey (2014), found that participants who were excluded by two other players in a game of online catch (Cyberball; Williams, 2000) reported lower social need fulfillment when
compared with the reported feelings of those who were in the included group. Using the Ostracism Online paradigm (Wolf et al., 2015), Timeo, Riva, and Paladino (2020) found that adolescents who’s social media accounts received fewer likes from peers (exclusion condition) reported higher levels of threatened belonging, self-esteem, and meaningful existence when compared adolescent’s who’s social media accounts received more likes (inclusion condition). The excluded adolescents also reported greater feelings of sadness, pain, and anger when compared to the included adolescents. Goncalves Donate et al., (2017) used a chat room paradigm, with two confederates, to exclude or include participants. Their results revealed that, in addition to reduced needs fulfillment, participants who were excluded from the chat conversation reported greater feelings of anger and identified with a greater number of pain-related words on a subjective scale when compared to included participants. In addition, social exclusion can also increase feelings of anxiety (Leary, 1990) and distress (MacDonald & Leary, 2005).

Self-Regulation

In addition to harming emotional experience, social exclusion can lower a person’s ability to self-regulate. Self-regulation is a process that dictates individuals’ control over their internal processes (e.g., cognition and emotion) and their external behaviors such as eating (Bell & Deater-Deckard, 2007; Baumeister et al., 1998). People are successful at self-regulation when they are able to overcome their initial impulses to engage in harmful or nonbeneficial behaviors.
One of the most highly cited papers on the effects of social exclusion on self-regulation was by Baumeister and colleagues (2005). In a series of studies, Baumeister and colleagues found that individuals who experienced social exclusion, rather than social inclusion, were less likely to consume an ill-tasting beverage and more likely to consume an unhealthy cookie snack than were those who did not experience the social exclusion. Consuming the beverage was deemed as a measure of self-regulation because it was considered a healthy, but unpleasant-tasting, drink, and forcing oneself to ingest it would have to override the undesirability of the drink itself. Other researchers have also found that social exclusion can impair participants’ self-regulation of eating behavior. For example, Salvy et al. (2012) had participants be included or excluded from an online game of catch (Cyberball). The researchers then presented participants with unhealthy snacks such as chips and candies. The researchers found that the participants who were excluded in Cyberball were more motivated to consume the unhealthy snacks compared to the included participants. Clearly, experiences of social exclusion are negative for psychological health in terms of negative emotions and self-regulation.

Types of Social Exclusion

There are two main types of social exclusion that are studied in the exclusion literature; exclusion can target either individual identity (i.e., characteristics unique to one person) or social identity (i.e., shared group memberships such as gender or ethnicity). These identity distinctions are
consistent with self-categorization theory (SCT; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), which states people can categorize in terms of their unique personal identity or in terms of an inclusive social identity. When categorizing at the personal (or individual level), the self is cognitively perceived as distinct from others and when categorizing at the social (or group level), the self is cognitively perceived as interchangeable with others who share that social identity. People self-categorize depending on environmental cues, which activate the identity that is most relevant in the immediate context. The resulting salient identity can have psychological consequences because people’s sense of “me” (i.e., individual identity) or “we” (i.e., group identity) provides a filter that causes shifts in their perceptions and experiences of events. Following from this perspective, social exclusion directed at a person’s individual attributes would activate a personal self-categorization whereas social exclusion directed at a person’s group attributes (e.g., gender) would lead to a social self-categorization. Because both forms of self-categorization lead to different cognitive self-representations, individual and group exclusion could have different psychological consequences or could have similar consequences but under different circumstances. I argue for the latter. In my reading of the literature, both individual and group exclusion appears to cause similar psychological harm; however, the two forms of exclusion differ in an important way, which I will discuss in more detail below.
Individual Exclusion

Many researchers who study the consequences of social exclusion use what I refer to as individual social exclusion paradigms. Most commonly used, and much of what is known about social exclusion, comes from the “no one chose you”, “life alone”, or “Cyberball” paradigms. In the “no one chose you” paradigm (Baumeister et al., 2005, Studies 2-6; Nezlek, Kowalski, Leary, & Blevins, 1997), a group of five participants first complete a questionnaire answering personal information about themselves. Each participant then receives the other participants’ questionnaires prior to meeting them and rank orders who they would like to work with on a triadic task. Participants are either told that they were (inclusion condition) or were not (exclusion condition) chosen by the others to work in the group. In the “life alone” paradigm (Baumeister et al., 2005, Study 1; Twenge, Baumeister, Tice, & Stucke, 2001), participants receive false feedback on a personality test that indicates they will likely have an unpleasant and lonely future. With the Cyberball paradigm (Salvy et al., 2012; Williams, 2000) participants play online catch supposedly with two other players. In the exclusion condition, participants only receive two out of 30 throws whereas in the inclusion condition they receive 10 throws. With the three methods described here, social exclusion is likely perceived by participants to be based on their individual identity (i.e., their unique characteristics) because their social identity is irrelevant to the exclusion. The exclusion is also most likely to be perceived as legitimate (i.e., fair) because the only information participants have for their
exclusion is either consensus (no one wants to interact or play catch with them) or a failed personality test. In sum, most experimental research examining social exclusion uses paradigms that create feelings of fair and individual exclusion.

**Group Exclusion**

People can also experience social exclusion because of their social, or group identities (e.g., gender or ethnicity). This less-studied form of exclusion has also been examined by researchers through Cyberball. Researchers have used the Cyberball method to simulate group exclusion by adding computerized photographs (Goodwin, Williams, & Carter-Sowell, 2010; Hayman, McIntyre, & Abbey, 2015) of the simulated players or providing information (e.g., names and ethnic food preferences) about the players (Schaafsma & Williams, 2012) that would identify these players as either members of their ingroup (e.g., same ethnic/racial group) or outgroup (e.g., different ethnic/racial group). Other researchers have used similar methods as the “no one chose you” paradigm, except participants learn that everyone (inclusion condition) or no one (exclusion condition) in an online discussion group wants to include someone from the participant’s national group in the group chat (Gómez, Morales, Hart, Vázquez Swann, 2011). For example, in Gómez et al., Spanish participants in the exclusion condition learned that a group of Europeans all said they did not want a Spaniard to join their discussion group. Because in both “group-targeted” paradigms, participants are excluded solely on the basis of their group membership, the exclusion by outgroup members is likely seen as discriminatory.
Consequently, the outgroup exclusion is likely experienced as unfairly directed at participants’ social identity.

Exclusion, Identity, and Fairness

I could find no research that compared the effects of individual versus group exclusion and only one group of researchers, to my knowledge, have explicitly tested the role of fairness within an exclusion paradigm. In their research, Tuscherer et al., (2016) manipulated the role of fairness within different individual exclusion scenarios. Participants were asked either to imagine that they were either excluded fairly from attending a party (because they had offended the host and were disliked by them), excluded unfairly from the party (because they were never liked by the host for an unknown reason), or that they had an experience unrelated to exclusion. The participants who were in the unfair exclusion condition reported weaker efficacy needs satisfaction than those who were in the fair exclusion condition. Although the researchers interpreted their findings as suggesting that unfair exclusion (which occurred at the individual level) is more psychologically harmful than fair exclusion, there are alternate explanations.

Tuscherer et al.’s (2016) findings were possibility due to the ambiguous nature of the “unfair” condition rather than to perceptions that the exclusion was unfair because ambiguous forms of social rejection are particularly associated with negative psychological outcomes (Crocker, Voelkl, Testa, & Major, 1991). In addition, the “fair” exclusion could be interpreted as a controllable threat in which
participants could work toward resolving the known issue with the host. Because
the fair exclusion was based on the individual’s rude personality, the scenario
could be mentally corrected by ending or apologizing for the rude behavior
toward the host. In contrast, because the “unfair” exclusion was due to an
unknown reason, it implies a less controllable threat. It would have been difficult
for participants to imagine how to resolve an unknown issue in order to prevent
future exclusion. The manipulations used by Tuscherer et al., (2016) are unlike
the type of fair and unfair exclusion I elicit in my research because my fairness
manipulations are based more on whether an experience with exclusion is fairly
or unfairly the result of demonstrated ability (rather than due to an easily
changeable or unknown behavior). With my approach, I aim to disambiguate
fairness and unfairness of exclusion from known/resolvable and
unknown/unresolvable reasons for exclusion. I also argue, contrary to
Tuscherer’s et al. (2016) study, that both fair and unfair exclusion can similarly
harm participants when it is perceived as a pervasive threat. Possibly, the
pervasiveness of threat depends on a combination of what aspect of identity
(individual or group) is targeted by the exclusion and whether the exclusion is fair
or unfair. I propose that participants who experience individual exclusion that is
fair due to their ability would likely anticipate they could experience similar
exclusion again in the future. On the other hand, participants who experience
group exclusion (due to their social identity) that is unfair (i.e., does not reflect
their ability), should also anticipate experiencing future exclusion. These two
distinct types of exclusion both strongly imply that participants are subject to future experiences of exclusion, creating a stronger and more pervasive threat than the manipulations used in Tuscherer et al.’s study.

The Influence of Negative Affect on Self-Regulation

The above literature reviewed indicates that social exclusion can produce several negative consequences for people. I am particularly interested in the interactive effects that type and fairness of social exclusion has on negative emotions and individuals’ ability to self-regulate their eating behaviors. In addition to the proposed interactive effects on the two outcomes, I am also interested in the possibility that type and fairness of exclusion harms self-regulation indirectly through their effects on negative emotion. As noted above, there is substantial evidence that experiences of social exclusion can produce feelings of negative emotions for individuals. Research further indicates that when individuals experience negative emotions, it becomes difficult for them to control self-regulating abilities, including their eating behaviors. For example, Liu, Song, Koopmann, Wang, Chang, and Shi (2017) found that those who reported negative moods due to their work subsequently reported they had consumed more unhealthy snacks relative to healthy snacks (i.e., they showed a reduction in self-regulation). This finding suggests that negative feelings (which could include those caused by social exclusion) might interfere with people’s ability to self-regulate their consumption of unhealthy food. One reason that negative emotions might disrupt self-regulation is because eating snacks serves as a
coping mechanism to reduce negative feelings (Thayer, 2001), which overrides the desire to self-regulate. The inverse relationship between negative affect and self-regulation, however, could differ depending on whether the exclusion that precedes it, is directed at a person’s individual or group identity and is fair or unfair.

Overview of Present Research

In my research, I aim to expand the literature by comparing the effects of individual and group exclusion on negative affect and the self-regulation of eating behaviors. In addition, I plan to test whether the role of fairness of that exclusion impacts both self-regulation and negative affect. With this research, I aim to address some gaps in the literature regarding these two types of social exclusion on negative affect and self-regulation. Most importantly, with this research I will make a theoretical contribution to current research on social exclusion. The previous literature appears to assume that all social exclusion will produce the same consequence to negative affect and self-regulation. In contrast, I propose that the consequences of exclusion to negative affect and self-regulation will differ in magnitude depending on both the type (individual or group) and fairness (fair or unfair) of social exclusion. With this research study, I hope to advance social exclusion literature in hopes of demonstrating that social exclusion does not produce cookie cutter outcomes. By using a new methodology, I will be able to test how both the type of exclusion and the fairness of the exclusion that
participants experience influences their feelings of negative affect and ability to self-regulate. I also choose to focus on eating behavior of women.

In the current study, I sought to understand the effects of social exclusion, based on individual qualities or group membership, on women’s ability to control their eating behavior of an unhealthy and high caloric snack (i.e., M&Ms).

For my study, I had a web program called “CSUSB Survivor” re-designed to test my hypotheses. With this program, I had participants complete two “Survivor tasks” against four other players they believed were playing along with them in real time (in actuality the four other players were computerized; not real players). The Survivor tasks were meant to challenge the participants to play competitively against other players by strategically answering survival scenario questions. After each task, players voted who to eliminate from the team to build the strongest team for future competitions. The program enabled me to manipulate the type of exclusion (individual or group) that the participants experienced. Individual exclusion targeted the players’ personal performance as the reason for exclusion from the game whereas group exclusion targeted female identity as the reason for exclusion. The program also allowed me to manipulate the fairness of the exclusion (fair or unfair) by assigning arbitrary points to the participants as they completed the two Survivor tasks. In the fair condition, participants were excluded after performing poorly on the both Survivor tasks. In the unfair condition, participants were excluded although they were not the worse player on either task (i.e. they did not have the lowest number of points in the
group). Afterwards, participants completed an “unrelated” task in which they tasted and rated M&Ms from 3 countries of origin (in reality, all M&Ms were from the U.S.A.). I predicted that participants in the group-unfair and individual-fair conditions would report higher feelings of negative affect compared to the other two groups. I also predicted that participants’ ability to self-regulate candy consumption would be lower when they were excluded in either the group-unfair condition or the individual-fair condition compared to the group-fair or individual-unfair conditions. Pattern should be because type and fairness of exclusion interact to influence participants’ expectation of the likelihood they will face this type of social exclusion again and have little control over reducing future exclusion.
CHAPTER TWO

METHOD

Participants

Participants were 133 female students recruited from the University’s campus. Approximately 75.5% identified as Hispanic American/Latinx, 13.6% as White/European American, 5.9% as Asian/Pacific Islander, 1.0% as Black/African American, and 4.0% as biracial. A total of 200 participants was the goal for data collection.

Participants were recruited via the Psychology Department SONA system and received four course credit points towards a psychology course for their participation. Additionally, they entered an opportunity drawing to receive a $100 gift card. Participants were screened via the SONA system to ensure they identified as female and did not suffer from any ailments that would prevent them from consuming sugar. Once screened, participants were scheduled for an hour-long lab session in which they played one of the four versions of “CSUSB Survivor”.

Materials and Procedure

For this study, I used a desktop computer, web camera, a Qualtrics survey, M&Ms, M&M taste rate sheet, pens, plates, napkins, water, a Brita filter, cups, hand sanitizer, serving utensils, three M&M bowls, and a food scale. The Survivor game was played on the desktop computer. Participants took their photo
with the webcam that was connected to the desktop computer and later upload
the photo to the Survivor game.

Preliminary Survey

A female researcher greeted the participant and instructed them to place
their belongings in the next-door storage closet. The researcher locked the
belongings inside and led the participant to the experiment room. Prior to the
participants arrival, the researcher opened the Survivor game and Qualtrics
survey in two separate browser windows. They inputted the participant's
research ID number into Qualtrics and left the survey open at the consent form
(Appendix A) for the participant to read immediately once seated in front of the
computer. After providing their consent, the participants then completed the
preliminary survey, which assessed their knowledge of Survivor-type games and
asked them to estimate how well they believed they would perform in the
Survivor game (Appendix B). Participants responded to the questions using the
provided options; some questions required a "yes" or "no" response while others
were on a variety of 7-point Likert scales. For example, one question asked the
participant, “how well do you expect to do in CSUSB Survivor?” (1 = Not very
well, 7 = Extremely well). The purpose of these items was to reinforce the cover
story that participants were playing a real survivor-style game.

The Cover Story

Participants were told that they would be completing a series of strategy
tasks along with four other players who were in different lab-rooms across the
campus. Participants learned that there were two initial rounds of CSUSB Survivor, and players would vote to eliminate one player at the end of each round. Ostensibly, the three players who successfully made it through the first two rounds would compete against two other teams for a chance to win one, three, or five lottery tickets for a $100 raffle. Players who did not make it past the first two rounds would supposedly complete the remaining strategy tasks alone and would not have the opportunity to win any lottery tickets. The lottery tickets were used to motivate the participants to perform well in the tasks and to simulate the real consequences of social exclusion. The cover story that the participants read is in Appendix C.

Survivor Program

With the assistance of the researcher, the participants took their photograph with the computer webcam and saved it to the computer to upload to the Survivor program later. Participants then read a brief story about the strategy tasks they would be completing and their opportunity to win one, three or five lottery tickets for a $100 gift card if they could “survive” past the second round. They then entered basic demographic information and uploaded their photo to the game. After their photo had uploaded, the game simulated the joining of other team players (who are computerized players, not real players.) The other players in the game were one woman and three men. The participant was able to view the webcam photos of their other team members throughout the duration of the
game (Appendix D). After seeing their team members, the participant was able to start the first survival task in “CSUSB Survivor”.

The first task entitled “Lost on the Moon” told participants that their spacecraft has crash landed on the moon and only 15-items have survived the wreck. Participants were instructed to choose the most critical items to take them with them on a 200-mile trek to the mothership. They had three minutes to rank order the items from most to least important. Each of the four computerized players finished the game before the participant, and a green check mark appeared over the other players’ photo to signal that the player had finished the task. The purpose of this procedure was to uphold the cover story that the participant was playing against other students in real time rather than the computer program. After this round, the participant saw the scores that she and her teammates received as well as their ranking of the 15-items. The scores were scripted and were used to manipulate the fairness of the exclusion. The participant was then asked to vote for which of the other four players she wanted to eliminate from the game and provided a reason for her vote. After the participant had voted, the program eliminated one of the computer players, based on the condition. If the participant was in the individual exclusion condition, then the white male player (Brandon) was voted out. If the participant was in the group exclusion condition, then the white female player (Kailey) was voted out. The participant then saw a red X over the photo of the player who had been eliminated. The participant also saw the comments left by the other players explaining their reasoning for
eliminating the player. The first two comments were the same regardless of the condition; however, the last comment was varied based on whether the participant was in the individual or group exclusion condition. In the individual elimination condition in which Brandon was voted out, the comment read, “He is probably not very strategic”. In the group elimination where Kailey was voted out, the comment read, “I don’t think that girl is very good at strategizing.” This comment was meant to target gender identity and implied that females do not perform well in strategy type competitions.

The participant then moved on to play the second task in “CSUSB Survivor”, entitled “Expedition to the Rainforest”. This task presented participants with four ordinary items: duct tape, a plastic tarp, a parachute cord, and metal skewers. The participants were asked to generate creative ways that they could use these items in combination with three items in their backpack (a flashlight, a Firestarter, and a Swiss army knife) for survival in the rainforest. Participants had another three minutes to complete the task. Two of the simulated players finished before the participant and received the green check mark over their photo. Once the participant’s 3-minute timer ran out, they also received a green check mark, and approximately 5 seconds afterwards the last simulated player received the check mark. After the task had been completed, scripted scores were displayed for all players. The participant was again prompted to vote one of the other remaining players from the game. The participant was always voted out after this (second) task. They then saw the reasons the other players provided for voting
against the participant. Again, the first two comments remained the same for both the individual and group conditions but the last comment varied slightly to target either the participants' individual or gender identity. The individual exclusion comment read, “She’d probably be better on an expedition out of here.” The group targeted comment read, “She’d probably be better on an expedition to the spa.” This comment was meant to be slightly sexist and imply that women are better at gender stereotypical tasks, like a spa trip, rather than strategy games. Participants then saw a closing message showing that they were voted out, a red X appeared over their picture, and the game ended. Screenshots of the Survivor program are included in Appendix D.

Primary Survey

**Negative Affect.** After participants were excluded from the game, they completed another survey (Appendix F). The first scale was a version of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) in which participants ranked their current feelings on a Likert scale (0 = *not at all*, 5 = *moderately*, 10 = *extremely*). The scale included both positive and negative feelings such as: “joyful, excited, sad, and embarrassed.” There was a total of 30 items that the participant answered from this scale, but I was only interested in the six items related to negative affect. All of the items were included to deter participants from guessing the true items of interest. The Negative Affect variable included: “sad, tense, frustrated, stressed, depressed, bad mood” (α = .86). I predicted that participants in the individual fair condition
and the group unfair condition would report greater feelings of negative affect compared to the other two groups.

**Fundamental Needs Scale.** The next scale participants completed was the Fundamental Needs Scale taken from van Beest and Williams (2006). This scale included four subscales that measured feelings of self-esteem (5-items), belonging (5-items), control (5-items), and meaningful existence (5-items). The 20 items were rated on 1-7 Likert scales (1 = *strongly disagree* to 7 = *strongly agree*). A few sample items include: “Playing the game made me feel insecure” (self-esteem; α = .74), “I did not feel accepted by the other players” (belonging: α = .65), “I felt in control over the game” (control; α = .35), and “During the game as my presence was not meaningful” (meaningful existence; α = .81). These items were included to be consistent with the ostracism literature (e.g., Williams, 2000), but I have no specific hypotheses because my participants will always experience exclusion whereas the ostracism research contains an inclusion condition. After completing the fundamental needs items, the participant then saw a timer page and signaled the researcher who introduced the self-regulation measure.

**Self-Regulation Measure (Via M&M Consumption)**

After participants completed the main survey, they were told that they would soon be moved to another room to complete the remaining survival tasks individually once another participant who was in the room finished their tasks. While they were waiting, the researcher asked the participants to help with
another study by completing an unrelated task (which was actually the main measure of self-regulation). Participants who agreed were presented with three labeled bowls (1, 2, and 3) of M&Ms. Each of the bowls was pre-weighted to be between 250-260 grams and their exact weight was pre-recorded by the researcher. The researcher then explained that the bowls contained M&Ms from three countries (the United States, Canada, and Great Britain) that use different recipes (although the recipes vary across these countries, all the M&Ms will be from the U.S.A.). Participants were asked to taste and rate each of the M&M recipes (Appendix G). They were also provided with a cup of filtered water to cleanse their palate between tasting different recipes (the water also reduces sugar satiation, which can limit candy consumption). After the tasting task, the researcher weighted each bowl of candy and subtracted the new amount from the old amount. The average calories consumed during this task was one of the main dependent variables of interest. Calories were calculated by multiplying the total difference, which is the weight of bowls before and after the M&M task, by the average calorie in one M&M in grams (approx. 5.01g). The higher the number of calories consumed would indicate lower levels of self-regulation that the participant demonstrated. I hypothesized that participants in the individual fair and group unfair condition would consume a great number of calories on average compared to the other two groups.
Final Survey

After participating in the tasting task, participants completed one more survey (Appendix H). The main purpose of the final survey was to assess participants’ memory of the events in “CSUSB Survivor” to make sure they were paying attention during the game. The attention check items included: “what was the gender and ethnicity of the person voted off in Round 1?”, “was this person the worst player?”, and “who was voted off in Round 2?” Participants also completed 20 questions that were used for exploratory purposes and to inform our future research. After all the survey questions had been completed, participants were thoroughly debriefed (Appendix I). They were also told that they would be entered to win a $100 gift card and one participant would be chosen randomly to receive the prize.

Manipulations

Participants were randomized into one of the four conditions. In the group-based exclusion conditions, the female computer player was eliminated after Round 1 followed by the female participant after Round 2. The designated group elimination comments mentioned above displayed after the eliminations. In the individual exclusion condition, a male computer player was eliminated after the first round followed by the female participant in the second round. The comments that target individual identity, mentioned above, display after these eliminations. To manipulate the fairness of the exclusion, the participants’ and players’ scores after each round were manipulated. In the fair exclusion, the player (Round 1) or
participant (Round 2) had the lowest score when they were voted out. However, in the unfair exclusion, the player (Round 1) and participant (Round 2) did not have the lowest score compared to the other players and when they were voted out of the game.

Several manipulation checks were included in the final survey. For the “attribution to self” manipulation check participants rated the extent to which two factors (quality and ability) contribute to their elimination in the game ($r = .42$). Both items were rated on a 7-point Likert scale ($1 = \text{Not at all}, 7 = \text{Very Much}$). Participants also completed two items to assess their belief that their exclusion was due to gender discrimination or gender prejudice on the part of one of more of the players on the same 7-point Likert scales ($r = .96$). I hypothesized that participants who experienced individual and fair exclusion would report that their elimination was due more to their self, whereas participants who experienced group and unfair exclusion would report their elimination was due more to gender discrimination. A composite of five questions was used to assess whether participants accurately perceived whether the game was fair or unfair. The 5-items ($\alpha = .92$) were rated on 7-point Likert scales ($1 = \text{Strongly disagree}, 4 = \text{Neutral}, 7 = \text{Strongly Agree}$) and included the items: “The scoring for the tasks were fair”, “My teammates were fair in the way they voted”, “Overall the game was fair”, “Overall my teammates were unfair” (reverse coded), and “Overall my teammates were fair”. I hypothesized that participants in the individual and fair
conditions will report that the game was overall more fair than those in the group and unfair conditions.
CHAPTER THREE
RESULTS

From the original 133 participants, 10 were excluded from analysis for incorrectly answering two or more attention checks, 12 were excluded for having previously taken a course with Dr. Garcia and having previously knowledge of the experiment, and 6 were excluded for not completing the self-regulation task. A total of 105 participants were included in the analysis (Individual-Fair, \( n = 29 \); Individual-Unfair, \( n = 25 \); Group-Fair, \( n = 31 \); Group-Unfair, \( n = 20 \)).

Statistical Analysis of Primary Measures

For the main analyses, 2 (Individual v Group exclusion) \( \times \) 2 (Fair v Unfair exclusion) ANOVAs were conducted to measure the dependent variables negative emotions and calorie consumption. Analyses using a 2 \( \times \) 2 ANOVA were also conducted on the fundamental needs measures however, these were not the main focus of my research. Table 1 (see Appendix K) displays a summary of the ANOVAs conducted.

Negative Emotions

The 2 \( \times \) 2 ANOVA was conducted on the composite 6-item Negative Affect variable. There were no significant main effects for type of exclusion, \( F (1, 101) = .04, p = .85, \eta_p^2 < .01 \) or for fairness of exclusion, \( F (1, 101) = 2.74, p = .10, \eta_p^2 = .03 \). Surprisingly, there also was no interaction between type of exclusion and
fairness of exclusion, $F(1, 101) = .04, p = .85, \eta_p^2 < .01$. My findings do not support my hypothesis that participants in the individual-fair condition and the group-unfair condition would report greater feelings of negative affect compared to the other two groups. Despite the insignificant findings, I examined the within-cell means and found there was a difference between fair and unfair exclusion in the individual exclusion condition ($M = 2.85, SE = .39$ versus $M = 3.45, SE = .42$ respectively) and group exclusion condition ($M = 2.84, SE = .38$ versus $M = 3.61, SE = .47$). on negative affect See Figure 1 (Appendix J).

Calorie Consumption

Calorie consumption of the M&M snack was used to measure participants’ self-regulation abilities. The 2 x 2 ANOVA did not produce a significant interaction or main effects. The ANOVA did not reveal significant results for type of exclusion, $F(1, 101) = 1.44, p = .23, \eta_p^2 = .01$ or fairness of exclusion, $F(1, 101) = 2.32, p = .13, \eta_p^2 = .02$. The interaction was also non-significant, $F(1, 101) = .08, p = .78, \eta_p^2 < .01$. Thus, my findings do not support my hypothesis that participants in the individual-fair condition and the group-unfair condition would consume a greater amount of the candy (demonstrating lowered self-regulation) compared to the other two groups. Despite these insignificant results, I again examined the within cell means. I found that there were small differences between fair and unfair exclusion in the individual exclusion condition ($M = 78.41, SE = 9.25$ versus $M = 66.22, SE = 9.97$) and the group exclusion condition ($M = 93.08, SE = 8.95$ versus $M = 75.23, SE = 11.14$). The pattern revealed that
participants were consuming more of the candy snack in the fair rather than unfair exclusion condition regardless of whether the exclusion was directed at their individual or group identity (see Figure 2; Appendix J).

**Fundamental Needs**

Although the fundamental needs measures were not the primary focus of the experiment, they were included in the analysis to be consistent with previous social exclusion research. Again, I made no specific hypothesis about these variables. The only significant results these analyses produced were two main effects for meaningful existence: type of exclusion, $F(1, 101) = 7.52, p < .01, \eta^2_p = .069$, and fairness of exclusion, $F(1, 101) = 6.25, p = .01, \eta^2_p = .06$. Those in the individual exclusion ($M = 4.87, SE = .18$) and fair exclusion conditions ($M = 4.84, SE = .17$) reported higher meaningful existence than those in the group exclusion ($M = 4.15, SE = .19$) and unfair conditions ($M = 4.18, SE = .20$). There was also a significant main effect for fairness for self-esteem, $F(1, 101) = 11.89, p < .01, \eta^2_p = .11$. Specifically, those in the unfair conditions had lower self-esteem ($M = 3.47, SE = 4.39$) than those in the fair exclusion conditions, ($M = 4.39, SE = .19$).

**Negative Emotions and Calorie Consumption**

There was not a significant overall correlation between Negative Emotions and Calorie Consumption, $r(105) = .016, p = .87$. To coincide with previous research findings (Stewart, 2018), I examined within-cell Pearson's $r$ correlations. For the individual unfair, individual fair, group unfair, and group fair conditions,
the correlations were non-significant, $r(25) = .22, p = .30$ $r(29) = .25, p = .19$,
$r(20) = .21, p = .37$, and $r(31) = -.30, p = .10$, respectively. Although these finding
were non-significant (which could be due to small cell sizes), I examined the
direction of the correlations, which showed that negative emotions and calorie
consumption were negatively related in the group-unfair condition but positively
associated in all three other conditions. The positive correlations indicate that
negative emotions were associated with greater calorie consumption whereas
the negative correlation indicates that negative emotions were associated with
lowered calorie consumption. See Table 2 (Appendix K).

**Manipulation Checks**

Several manipulation checks were analyzed using 2 (Type of exclusion: Individual v Group) x 2 (Fairness of exclusion: Fair v Unfair) ANOVAS. The first
manipulation check examined participants self-attention (2 item composites:
ability and quality). There was a significant positive correlation between the items
ability and quality, $r(105) = .424, p < .001$. The ANOVA showed a significant main
effect of type of exclusion, $F(1, 101) = 7.93, p < .01, \eta_p^2 = .07$. I expected that
participants in the individual condition would attribute their exclusion more to their
self compared to those in the group exclusion condition. The means revealed
that those in the individual condition ($M = 5.12, SE = .21$) believed their
elimination was due more to their self, compared to participants in the group
condition ($M = 4.28, SE = .22$). Additionally, participants in the fair condition
believed their elimination was due more to their self than those in the unfair
condition. The ANOVA revealed a main effect of fairness of exclusion, $F(1, 101) = 6.53, p = .012, \eta^2_p = .06$. Participants who were excluded fairly ($M = 5.09, SE = .20$) believed that their exclusion was due more to their self compared to those who were excluded unfairly ($M = 4.32, SE = .23$). However, there was no interaction between type and fairness of exclusion on participants self-attention, $F(1, 101) = .26, p = .61, \eta^2_p < .01$.

I next examined participants’ belief that they were eliminated due to gender discrimination. The $2 \times 2$ ANOVA revealed a significant main effect for type of exclusion, $F(1, 101) = 50.81, p < .01, \eta^2_p = .34$, and a significant main effect for fairness of exclusion $F(1, 101) = 9.61, p < .01, \eta^2_p = .09$. Specifically, those in the group exclusion condition ($M = 4.43, SE = .27$) believed their exclusion was due more to their gender compared to those in the individual exclusion condition ($M = 1.76, SE = .26$). Participants also believed that their exclusion was due more to their gender when the exclusion was unfair ($M = 3.68, SE = .28$) rather than when it was fair ($M = 2.51, SE = .24$). However, there was not a significant interaction between type and fairness of exclusion on gender discrimination, $F(1,101) = .05, p = .82, \eta^2_p < .01$. These effects confirm that participants were accurately reporting when their exclusion was due to their gender identity.

I also examined if participants were able to correctly report if their exclusion from Survivor was fair or unfair. A $2 \times 2$ ANOVA was conducted on the 5-item measure of fairness, which showed a significant main effect for type of
exclusion, $F(1, 100) = 5.29$, $p = .02$, $\eta^2_p = .05$ and for fairness of exclusion $F(1, 100) = 19.86$, $p < .01$, $\eta^2_p = .17$. Participants reported that their exclusion was more fair when they were in the individual exclusion condition ($M = 4.92$, $SE = .21$) rather than the group exclusion condition ($M = 4.23$, $SE = .23$). Additionally, participants who were in the fair exclusion conditions correctly reported that their exclusion was more fair ($M = 5.25$, $SE = .20$) than those who were in the unfair exclusion conditions ($M = 3.90$, $SE = .23$). With these results, I can presume that participants were accurately able to report if their exclusion from the game was fair or unfair.

**Moderated-Mediation Analyses**

I did not test the moderated-mediation analyses because the ANOVAs failed to reveal significant interactions for the two primary variables: Negative Emotion and Calorie Consumption. Further, the correlations between the two dependent variables did not follow the predicted pattern.
CHAPTER FOUR

DISCUSSION

I conducted this experiment specifically to examine if the interaction between two types of exclusion (individual v group) and fairness of exclusion (fair v unfair) had similar or different consequences on participants’ negative emotions and their ability to self-regulate their eating behavior. Below I will describe a few potential reasons that my findings may have been non-significant.

Findings Explained

The results for negative emotions and calorie consumption were non-significant. A contributor to this may have been that the study had a small sample size. Due to campus closure after the Winter term, data collection had to cease leaving us with fewer participants than anticipated; as a result, each condition had significantly less participants than previously expected. However, the small sample size does not account for the odd patterns revealed in the results. For negative affect, participants in the both the individual unfair and group unfair conditions reported higher feelings of negative affect than those in the individual fair and group unfair conditions. Additionally, participants in the individual fair and group fair conditions consumed a higher average of calories compared to those in the individual unfair and group fair conditions. Those in the group fair condition consumed the greatest amount of candies on average compared to the other two groups. The average amount of candy consumed was approximately 18g which
is near the amount in a fun size pack of M&Ms (15g). Clearly, the average participant did not consume a high quantity of the candy showing that my study had a floor effect.

One possible explanation is the results from the manipulation checks, which revealed two main effects for both self-attention and perceptions of gender discrimination. It appears that participants were not able to disambiguate the differences between group and unfair exclusion or individual and fair exclusion. I believe that participants automatically assumed that when the exclusion was unfair it was group based and when the exclusion was fair it was individual based. Stewart’s (2018) thesis used the same manipulation variables, but targeted ethnic group identity. Although she found the same interaction with the manipulated variables as I did in my experiment, she was able to demonstrate her predicted interaction of type and fairness of exclusion on both negative affect and calorie consumption. It is unclear to me why she was able to find her desired results using a Latinx sample despite showing the same interaction effect with her manipulation variables and why her results were not able to replicate with my female sample. Further investigation is required to uncover the meaning of these results.

I was surprised the results from the 2 x 2 ANOVA on the fundamental needs measures. I had previously made no specific hypothesis about what these measures would reveal. I was surprised to see that the results revealed a significant main effect for type and fairness of meaningful existence. Participants
reported a greater meaningful existence in the individual and fair conditions compared to the group and unfair conditions. It is possible that participants felt a lower sense of meaning after experiencing group exclusion because group exclusion implies discrimination which often occurs in daily life. The reminder that gender discrimination is a constant threat to their gender identity may have decreased their scores for meaningful existence. Similarly, unfair exclusion may have caused lowered feelings of meaningful existence because the exclusion was out of the participants control.

My results also revealed a main effect for fairness of exclusion on self-esteem. Specifically, participants had lower self-esteem in the individual exclusion condition than in the group exclusion condition. One reason that participants may have reported lower self-esteem is because of the language used in questions for the self-esteem items. Each of the five items included the word “I”, “me” or both; clearly measuring someone’s personal self-esteem. Because participants were primed to think of themselves in terms of either their individual or collective identities, participants responding to individual self-esteem items should report lower scores to their individual self-esteem compared to those categorizing at the collective level. In other words, categorizing at a collective group level may have buffered the blow to individual self-esteem. Alternately, individual self-esteem might have been less relevant to those thinking of themselves in terms of their group identity. Importantly, these results reveal that different social exclusions (individual v group) and fairness of that
exclusion (fair v unfair) create different consequences to at least two variables within the fundamental needs measures.

The correlations between negative emotions and calorie consumption in my experiment revealed some similar patterns to that in the thesis by Stewart (2018). In her experiment, which focused on ethnic group exclusion rather than gender exclusion, she found significant correlations between negative emotions and calorie consumption for both the group fair and group unfair exclusion conditions. Her results revealed a significant negative correlation between negative emotion and calorie consumption in the group fair condition and a significant positive correlation in the group unfair condition. In my experiment, the correlation between negative emotions and calorie consumption was also negative in the group fair condition and positive in the group unfair condition (but not significantly so). The negative correlation in the group fair condition in both Stewarts and my own experiment suggests that negative emotions are associated with lower calorie consumption (higher self-regulation) when people experience group fair exclusion. Thinking about this pattern, it is possible to assume that while participants are experiencing negative emotions, they are not using candy consumption to regulate those emotions. Stewart (2018) also did not find significant correlations for participants in either the fair or unfair conditions for individual exclusion; however, her pattern for these two groups was different from my results. The pattern for results in Stewarts (2018) individual conditions showed a positive correlation between negative emotions and calorie...
consumption for the individual fair group and a negative correlation for the individual unfair group. My results revealed two non-significant positive correlations for both individual fair and individual unfair exclusion. I am unsure why the correlations did not reveal similar patterns for those in the individual conditions and further research will have to be conducted to uncover the true meaning of the different patterns.

Theoretical Implications

Contrary to my predictions, the type or fairness of exclusion did not produce any significant effects. This lack of finding does not support my argument that type and fairness interact to influence people’s negative emotional or self-regulatory responses to social exclusion. It also does not provide support for the theoretical argument that different forms of exclusion result in disparate consequences. Rather, based on my findings, it would seem that social exclusion, regardless of whether it targets individual or group identity and is fair or unfair, produces the same negative consequences for negative emotions and self-regulation.

My thesis research was part of a larger research project examining the possibility that people are more likely to experience self-regulatory impairment for behaviors that are stereotype consistent. For my experiment, female participants were the target population because of the negative stereotype that women are emotional eaters who increase their unhealthy eating behaviors when they experience emotional distress. Indeed, researchers have found that women with
eating disorders tend to increase their binge eating behaviors after they experience negative emotions (Engelberg, Steiger, Gauvin, & Wonderlinch, 2007). Thayer (2001) also observed that more woman than men reported using eating as a strategy to help regulate moods. Clearly, there is some evidence to support the stereotype that negative experiences increase a woman's eating behaviors. Whether or not women are more biologically or socially prone to use eating as a coping strategy to reduce negative emotions is unclear. Potentially, women are more likely to exhibit this behavior when their gender identity or stereotypes about women are cued. The stereotype explanation would be consistent with Stewart’s (2018) thesis findings with Latinx participants. I would also argue that similar stereotype exists about people in the Latinx community which would explain the positive correlation Stewart found between negative emotion and calorie consumption in the group-unfair condition. Because the group-unfair condition was meant to emulate discrimination, the exclusion experience was possibly more difficult to ignore which triggered the stereotypical eating response as a result of the negative feelings.

Considering the previous claim and support that women increase eating after emotionally distressing experiences, it would be interesting to consider if the same would be true in an experiment that included male and female or White and Latinx participants. No stereotype, to my knowledge, exists about males increasing eating behaviors after negative experiences. I would assume that males would not increase eating behaviors due to group exclusion experiences.
but rather demonstrate detriments to other, more stereotypical, types of self-regulation such as aggression. Further, because sexism is not a common occurrence against males, being excluded in the group unfair condition should not be as harmful to males as it should be to females. However, exclusion in the individual fair condition should still produce a detriment to self-regulation because it is a more personal and salient threat to men.

With this experiment I proposed that certain types of social exclusion were more harmful than others. Previous researchers often examined social exclusion at only the individual or group level and anticipated similar detriments to negative affect and self-regulation regardless of the type of exclusion. There are few research paradigms currently available that allows for the manipulation of type of exclusion to be either individual or group targeted (e.g., Cyberball, Ostracism Online). In addition, only one research study to my knowledge attempted to incorporate the role of fairness to social exclusion research (Tuscherer, et al., 2016). However, I believe their definition of fair and unfair exclusion was not precise enough of a manipulation.

Limitations

Although the study was planned well, limitations still existed. One limitation was that participants were not able to differentiate between group and unfair exclusion and individual and fair exclusion. The two main effects for both the self-attention and gender discrimination variables revealed that participants perceived the exclusion to be based on their ability and quality when it was
individual and fair exclusion and that the exclusion was based on gender
discrimination when it was group and unfair. Therefore, a confound existed within
my study. Further efforts will have to be made to think of ways to disambiguate
the variables.

Another potential limitation with my study concerns my manipulation of
fairness. In the unfair condition, ratings of fairness were around the midpoint of 4
on the 7-point Likert scale, suggesting that participants did not perceive the
exclusion in this condition as clearly unfair. Future studies might need to use a
stronger manipulation of fairness to make the fairness of the exclusion clearer to
participants. One possible way to make the fair or unfair exclusion more apparent
to participants might be to add more rounds to the CSUSB Survivor program.
Perhaps more than two rounds of unfair exclusion are needed for participants to
perceive a pattern of unfairness.

One further limitation to this study was due to the small sample size
collected. One reason the sample size was small is because of California State
University, San Bernardino’s campus closure due to the Coronavirus. It is also
very possible that previous knowledge and popular conversations about the
Coronavirus and how it spread left students unwilling to indulge in the M&M
snack. Because the researchers had to pre-weigh the candy in designated
containers, they were not sealed in the original packaging when presented to
participants. Although researcher used precautions to ensure that the candy was
not contaminated, students may have still been wary to consume the snack.
Although this limitation might explain why candy consumption was does not explain why scores on negative emotion were not significant.

Future Directions

This study should be conducted again at a time that it is safe to do so with less concern surrounding the coronavirus. An adequate number of participants will also need to be collected to ensure the study has appropriate power. Once the study has been rerun to collect an appropriate number of females, I anticipate to recreate the study to also include male participants and manipulations of exclusion type and fairness that are more independent of each other. In addition, we are currently working on adapting this experiment to be fully online. This would allow a collection of data from a non-college student sample in hopes of making the study more generalizable. Self-regulation measures will be modified accordingly to measure behaviors other than eating when the study becomes fully functioning online.

Conclusion

My research project was intended to understand how different types of social exclusion (individual v group) and the fairness of the exclusion (fair v unfair) impact women’s negative emotions and self-regulation abilities. Although my results were non-significant, the recreation of the “CSUSB Survivor” app is an important contribution to social exclusion paradigms. By conducting a second study, I hope to further demonstrate its importance to future social exclusion
research. While the research on social exclusion is broad, my theoretical proposal that targets of social exclusion will react differently invites opportunity to study social exclusion and its consequences in negative affect and self-regulation further.
APPENDIX A

INFORMED CONSENT
PRINCIPLE INVESTIGATORS: Donna M. Garcia – Dmgarcia@csusb.edu – Professor, California State University- San Bernardino
Caitlin Shaw – Graduate Research Assistant – California State University- San Bernardino

INTRODUCTION: The study in which you are being asked to participate is designed to better understand people’s experiences during competitive games. This study is being conducted by Dr. Donna Garcia, Professor of Psychology, California State University, San Bernardino. This study has been approved by the Institutional Review Board, California State University, San Bernardino.

PURPOSE: We are interested in how well people do when they complete strategy tasks as part of a team competition versus when they complete the same task individually.

DESCRIPTION: In this study, you will be asked to play a minimum of two rounds of “CSUSB Survivor” in which you will complete different strategy tasks that demonstrate your “survival skills.” Before completing these tasks, you will be asked to complete several questions about your interest and experience with strategy games. Next, you will complete other measures about your experience playing CSUSB Survivor. Please note, this study requires participants to take a full-face photograph. Photographs will be deleted at the end of the study. Participants must also be individuals who are not diabetic or do not suffer from similar illnesses that prevent them from consuming sugar.

PARTICIPATION: Your participation is voluntary. Refusal to participate, answer any questions, or complete the full study will involve no penalty or loss of benefits to which you are otherwise entitled. As compensation for your time, you will receive 4 credit points for your involvement in our study today.

CONFIDENTIALITY OR ANONYMITY: Details about your performance on the tasks and your responses on the survey will be used solely by the researchers and stored on a secure computer or locked in laboratory cabinet, with no identifying information about you attached. By clicking “accept”, you give permission for the researchers to publish your data in aggregate form and post it on Open Science Framework (without information that could identify you). Open Science Framework promotes transparency and collaboration in science to improve the research enterprise.

DURATION: Your participation in the study will take approximately 45-59 minutes.

RISKS: There are no known risks to participating in this study. The competitive tasks you complete could evoke some emotional stress. However, these tasks should cause
no more discomfort than you would experience in your everyday life. Although it is unlikely that any psychological harm will result from participation in this study, if you would like to discuss any distress you have experienced, do not hesitate to contact the CSUSB Psychological Counseling Center (909 537-5040).

**BENEFITS:** Although participation may not benefit you directly, we believe that the information obtained from this study will help us gain a better understanding of how individuals respond in interdependent competitive situations.

**QUESTIONS:** If you have questions about the research or your rights as a research subject, or if you wish to learn about the results of this study after April 30, 2020, please contact Dr. Donna Garcia at dmgarcia@csusb.edu. By selecting agree, I acknowledge that I have been informed of and I understand the nature and purpose of this study. I also acknowledge that I am at least 18 years of age, am not diabetic, and do not suffer from similar illnesses that prevent me from consuming sugar.

___ Agree
___ Disagree
APPENDIX B

PRELIMINARY SURVEY
1. Have you ever watched the reality show “Survivor?”

Yes _______  No ________

2. Have you watched any other reality shows in which people are voted from the competition?

Yes _______  No _______

3. How well do you expect to do in CSUSB Survivor?

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<td>Not at all</td>
<td>Well</td>
<td>Extremely Well</td>
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4. How likely do you think it is that you will “survive” both rounds and make it to the end of the competition?

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5. Would you like to complete the final set of strategy tasks as part of a team?

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6. Would you like to complete the final set of strategy tasks on your own (not part of a team)?

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7. For the final set of strategy tasks, which would you prefer?

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8. How important is it for you to do well in competitions like this?

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<td></td>
<td>Not at all</td>
<td>Moderately Important</td>
<td>Extremely Important</td>
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9. How much are you looking forward to playing CSUSB Survivor?

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<td></td>
<td>Not at all</td>
<td>Sounds ok</td>
<td>Very Much</td>
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(Taken from Stewart; 2018).
APPENDIX C

THE COVER STORY
Welcome to Survivor

We are interested in comparing how well people do when they complete strategy tasks as a part of a team competition versus when they complete at the same time individually. To determine who will complete the tasks individually or as a team, you will play a few rounds of CSUSB Survivor with four other players. In each round, you will complete a short test of your “survivor” intelligence. If you “survive” the first two rounds, you will go on to complete a series of strategy games with the remaining members of your team. Your team will compete against two other teams for a chance to win 1, 3, or 5 lottery tickets for a $100.00 draw. If you play in a team, you will be guaranteed to win at least one lottery ticket. If you get eliminated during the first two rounds of CSUSB Survivor, you will complete the same strategy tasks, but alone and without the chance to win lottery tickets.

☐ I have read and understand the instructions

Register to Play
APPENDIX D

SURVIVOR PROGRAM SCREENSHOTS
Round 1: Lost on the Moon
Participants rank order 15-items

Round One: Lost On The Moon
Your spacecraft has crash-landed on the dark side of the moon. You are scheduled to meet with the mother ship 200 miles away on the light side of the moon. The crash has ruined the ship and destroyed all except 15 items of equipment. Your crew's survival on the moon depends upon reaching the mother ship, so you must choose the most critical items available to take on the 200-mile trip.

Sort the items. The most important item should be at the top of the list, the least important item should be at the bottom of the list.

Start Round

SCORING RUBRIC
The scores for you and your team members are being calculated. Scores are computed by subtracting the difference between your ranking and NASA's ranking for each item (plus or minus). The difference scores are then added to calculate your total score. Higher scores indicate stronger performance.
Round 1: Scoring Rubric / Computer Player Responses

Here is how your team did:

<table>
<thead>
<tr>
<th>Player</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caitlin</td>
<td>11</td>
</tr>
<tr>
<td>Kalley</td>
<td>12</td>
</tr>
<tr>
<td>Marvin</td>
<td>14</td>
</tr>
<tr>
<td>Brandon</td>
<td>8</td>
</tr>
<tr>
<td>Antonio</td>
<td>11</td>
</tr>
</tbody>
</table>

Select a player:

Pick a member who you feel should be voted off:

Why did you choose this player:

Give a brief description of why you chose this player:

Round 1 Elimination: Fair – Individual Male Player with Lowest points eliminated

Higher scores mean better performance
Round 1 Elimination Unfair – Individual
Male player not with lowest points eliminated

Round 1 Elimination Unfair - Group
Female player without lowest points is eliminated

Round 1 Elimination Fair - Group
Female player with lowest points is eliminated
Round 2: Expedition to the Rainforest

**Individual condition**

You and your friends have decided to take an expedition through the rainforest in Costa Rica. List up to five ways you can use each of the items listed. Included in your backpack are a flashlight, a firestarter, and a Swiss army knife. You may use these items in combination with the items listed.

Start Round

<table>
<thead>
<tr>
<th>Parachute Cord</th>
<th>Duct Tape</th>
<th>Plastic Tarp</th>
<th>Metal Skeewers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Group Condition**

You and your friends have decided to take an expedition through the rainforest in Costa Rica. List up to five ways you can use each of the items listed. Included in your backpack are a flashlight, a firestarter, and a Swiss army knife. You may use these items in combination with the items listed.

Round 2 has started - your answers will be submitted automatically once the timer hits 0! Start Round

<table>
<thead>
<tr>
<th>Parachute Cord</th>
<th>Duct Tape</th>
<th>Plastic Tarp</th>
<th>Metal Skeewers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

51
SCORING RUBRIC

Originality
We compare each of your responses to the responses from a group of 50 students at your campus. Responses that were given by only 5% of the students are unusual (1 point), responses that were given by only 1% of the students are unique (3 points).

Fluency
We add up the all the number of responses you gave for each item.

Flexibility
We count the number of different categories your answers fall into (“weapon” and “hit sister” are from the same general list of weapons).

Elaboration
We look for the amount of detail you gave (for example: “a doorknob” = 0 points, whereas “a doorknob to prevent a door slamming shut in a strong wind” = 2 points-one for the explanation of door slamming, two for further detail about the wind).

REMINDER!
If you get eliminated during the first two rounds of Survivor, you will complete the remaining strategy tasks alone and without the chance to win lottery tickets!

Computerized Players Responses to Task – Individual Condition

What Your Other Team Members Said

Things you can do with a parachute:
- Marvin: Hang flashlight up in a tree to use as a lamp at night
- Antonio: secure supplies for first aid
- Kalley: clear heavy objects

Things you can do with duct tape:
- Marvin: use as climbing gear when spelunking down mountains
- Antonio: wrap up pant legs and sleeves to keep out bugs
- Kalley: fix boots

Things you can do with a plastic tarp:
- Marvin: collect rain water using tarp and use fire starter to make a fire to boil the water so you can drink it
- Antonio: run porch to keep you dry
- Kalley: hammocks

Things you can do with metal skewers:
- Marvin: use as tent spikes for a tent made using the nylon rope and clothing
- Antonio: mark path so you don’t get lost
- Kalley: roast hotdogs over fire

Computerized Players Answers to Task – Group Condition
Round 2 Elimination always participant
Fair Individual Elimination – Participant has lowest points
Last comment directed at participants ability in game

Unfair Individual elimination – Participant does not have lowest points
Last comment directed at personal ability in game
Fair Group elimination – Participant has the lowest points
Last comment has sexist undertones

Thank you for playing the
Survivor Challenge!

Please close this window and see your researcher for further instruction
APPENDIX E

MANIPULATIONS FOR SURVIVOR CONDITIONS
### Round 1: Trip to the Moon (Rankings and Votes)

<table>
<thead>
<tr>
<th>Version 1</th>
<th>Version 2</th>
<th>Version 3</th>
<th>Version 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group – Unfair</strong></td>
<td><strong>Group – Fair</strong></td>
<td><strong>Individual – Unfair</strong></td>
<td><strong>Individual – Fair</strong></td>
</tr>
<tr>
<td>#1 Marvin (14)</td>
<td>#1 Marvin (14)</td>
<td>#1 Marvin (14)</td>
<td>#1 Marvin (14)</td>
</tr>
<tr>
<td>#2 Participant (12)</td>
<td>#2 Antonio (11)</td>
<td>#2 Participant (12)</td>
<td>#2 Antonio (11)</td>
</tr>
<tr>
<td>#3 Kailey &amp; Brandon (11)</td>
<td>#3 Participant &amp; Brandon (11)</td>
<td>#3 Kailey &amp; Brandon (11)</td>
<td>#3 Participant &amp; Brandon (11)</td>
</tr>
<tr>
<td>#4 Antonio (8)</td>
<td>#4 Kailey (8)</td>
<td>#4 Antonio (8)</td>
<td>#4 Kailey (8)</td>
</tr>
</tbody>
</table>

**Teammates’ Comments**

- Her score wasn’t the worst but she gave some bad answers
- Our team will be stronger without her
- I don’t think that girl is very good at strategizing

- Her score was the worst and she gave some bad answers
- Our team will be stronger without her
- I don’t think that girl is very good at strategizing

- His score wasn’t the worst but he gave some bad answers
- Our team will be stronger without him
- He is probably not very strategic

- His score was the worst and she gave some bad answers
- Our team will be stronger without him
- He probably not very strategic

**Need participants comments to show if she votes off Kailey**

Kailey voted off

Brandon voted off

Brandon voted off

Kailey voted off

Brandon voted off

Brandon voted off

Brandon voted off
# Round 2: Expedition through the Rain Forest (Ranking and Votes)

<table>
<thead>
<tr>
<th>Version 1</th>
<th>Version 2</th>
<th>Version 3</th>
<th>Version 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group – Unfair</td>
<td>Group – Fair</td>
<td>Individual – Unfair</td>
<td>Individual – Fair</td>
</tr>
<tr>
<td>#1 Marvin (45)</td>
<td>#1 Marvin (45)</td>
<td>#1 Marvin (45)</td>
<td>#1 Marvin (45)</td>
</tr>
<tr>
<td>#2 Participant (39)</td>
<td>#2 Antonio (39)</td>
<td>#2 Participant (39)</td>
<td>#2 Antonio (39)</td>
</tr>
<tr>
<td>#3 Brandon (38)</td>
<td>#3 Brandon (38)</td>
<td>#3 Antonio (38)</td>
<td>#3 Kailey (38)</td>
</tr>
<tr>
<td>#4 Antonio (35)</td>
<td>#4 Participant (35)</td>
<td>#4 Kailey (35)</td>
<td>#4 Participant (35)</td>
</tr>
<tr>
<td>Participant voted off</td>
<td>Participant voted off</td>
<td>Participant voted off</td>
<td>Participant voted off</td>
</tr>
</tbody>
</table>

**Teammates’ Comments**

- we need to keep our team as strong as possible
- I just didn’t like her answers
- she’d probably be better at “an expedition to the spa”

- we need to keep our team as strong as possible
- I just didn’t like her answers
- she’d probably be better at “an expedition out of here”

- we need to keep our team as strong as possible
- I just didn’t like her answers
- she’d probably be better at “an expedition out of here”

- we need to keep our team as strong as possible
- I just didn’t like her answers
- she’d probably be better at “an expedition out of here”
APPENDIX F

POST SURVIVOR SURVEY
**Instructions:** Please indicate how you are feeling right now by circling a number for each mood below.

<table>
<thead>
<tr>
<th>Mood</th>
<th>All</th>
<th>Moderately</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMUSED</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANGRY</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANXIOUS</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAPPY</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SELF-CONSCIOUS</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CONTEMPTUOUS</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JOYFUL</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISGUSTED</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEARFUL</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
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<td></td>
</tr>
<tr>
<td>SAD</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TENSE</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FRUSTRATED</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMBARRASSED</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXCITED</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GUILTY</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASHAMED</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROUD</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISTRESSED</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRRITATED</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RELAXED</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STRESSED</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEPRESSED</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEERFUL</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOOD MOOD</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BAD MOOD</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SYMPATHETIC</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOVED</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMPASSIONATE</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TENDER</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WARM</td>
<td>0 1 2 3 4 5 6 7 8 9 10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Instructions: This part of the survey concerns your experience playing CSUSB survivor. Please answer the following questions about your participation in the game.

Now, please indicate the extent to which you agree with each statement by using the following scale.

1 = strongly disagree; 2 = moderately disagree; 3 = slightly disagree; 4 = neutral;
5 = slightly agree; 6 = moderately agree; 7 = strongly agree

1. I felt as one with the other players.
   1  2  3  4  5  6  7

2. I had the feeling that I belonged to the group during the game.
   1  2  3  4  5  6  7

3. I did not feel accepted by the other players.
   1  2  3  4  5  6  7

4. During the game I felt connected with one of more other players.
   1  2  3  4  5  6  7

5. I felt like an outsider during the game.
   1  2  3  4  5  6  7

6. Playing the game made me feel insecure.
   1  2  3  4  5  6  7

7. I had the feeling that I failed during the game.
   1  2  3  4  5  6  7

8. I had the idea that I had the same value as the other players.
   1  2  3  4  5  6  7
9. I was concerned about what the other players thought about me during the game.

10. I had the feeling that the other players did not like me.

11. I was concerned about what the other players thought about me during the game.

12. I felt in control over the game.

13. I had the idea that I affected the course of the game.

14. I had the feeling that I could influence the direction of the game.

15. I had the feeling that the other players decided everything

16. During the game it felt as if my presence was not meaningful.

17. I think it was useless I participated in the game.

18. I had the feeling that my presence during the game was important.

19. I think that my participation in the game was useful.

20. I believe that my contribution to the game did not matter.

(Taken from Stewart; 2018).
APPENDIX G
M&M TASTE AND RATE SHEET
1. Did you know that the United States, Canada, and Britain made M&Ms, using slightly different recipes?  Yes  No  

2. Are you familiar with the difference among the recipes?  Yes  No  

3. Do you like chocolate?  Yes  No  Do you like M&Ms?  Yes  No  

**Candy Taste and Rate**  

| Candy A | 1. Sweetness of the candy  
Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Very Sweet  
Sweet |  
2. Saltiness of the candy  
Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Very Salty  
Salty |  
3. Tastiness of the candy  
Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Very Tasty  
Tasty |  
4. Texture of the candy  
Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Very Crunchy  
Crunchy |  
5. Flavor of the candy  
Not very | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Very Flavorful  
Flavorful |  
6. I like the candy (1 = not at all to 9 = very much so)  
Not at all | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Very much so  
I like the candy |  
__________________________________________________________________________  

**Candy B**  

63
1. **Sweetness of the candy**
   
   Not at all  1  2  3  4  5  6  7  8  9  Very Sweet

2. **Saltiness of the candy**
   
   Not at all  1  2  3  4  5  6  7  8  9  Very Salty

3. **Tastiness of the candy**
   
   Not at all  1  2  3  4  5  6  7  8  9  Very Tasty

4. **Texture of the candy**
   
   Not at all  1  2  3  4  5  6  7  8  9  Very Crunchy

5. **Flavor of the candy**
   
   Not very  1  2  3  4  5  6  7  8  9  Very Flavorful

6. **I like the candy** (1 = not at all to 9 = very much so)
   
   Not at all  1  2  3  4  5  6  7  8  9  Very much so

---

**Candy C**

1. **Sweetness of the candy**
   
   Not at all  1  2  3  4  5  6  7  8  9  Very Sweet

2. **Saltiness of the candy**
   
   Not at all  1  2  3  4  5  6  7  8  9  Very Salty

3. **Tastiness of the candy**
   
   Not at all  1  2  3  4  5  6  7  8  9  Very Tasty
4. Texture of the candy

<table>
<thead>
<tr>
<th>Rating</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>Crunchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Crunchy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Flavor of the candy

<table>
<thead>
<tr>
<th>Rating</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not very Flavorful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Flavorful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. I like the candy (1 = not at all to 9 = very much so)

<table>
<thead>
<tr>
<th>Rating</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>Very much so</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very much so</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Which bowl of candy do you like the most: Candy A ☑️  Candy B ☑️  Candy C ☑️

Which bowl of candy do you like the least: Candy A ☑️  Candy B ☑️  Candy C ☑️

Now, please guess which bowl of candy is from which country:

Candy A: United States ☑️  Canada ☑️  Britain ☑️

Candy B: United States ☑️  Canada ☑️  Britain ☑️

Candy C: United States ☑️  Canada ☑️  Britain ☑️

(Taken from Stewart; 2018).
Instructions: This part of the survey concerns your experience playing CSUSB survivor. Please answer the following questions about your performance in the game.

1. Were you eliminated in Round 1? Yes _______ No _______

2. If it wasn’t you, who was voted off during Round 1?
   __Kailey _______ __Marvin _______ __Brandon _______ __Antonio _______

3. What was the gender of the person voted off during Round 1?
   Male _______ Female _______

4. What was the ethnicity/race of the person voted off during Round 1?
   ___Black/African American _______ ___White/European American _______ ___Hispanic/Latin American _______

5. Was this person the worst player during this round? Yes _______ No _______

6. If you played Round 2, were you eliminated during this round? Yes _______ No _______

7. If it wasn’t you, who was voted off during Round 2?
   __Kailey _______ __Marvin _______ __Brandon _______ __Antonio _______ __None of the above _______

8. What was the gender of the person voted off during Round 2?
   Male _______ Female _______

9. What was the ethnicity/race of the person voted off during Round 2? ________________

10. Was this person the worst player during this round? Yes _______ No _______

Instructions: Now, please indicate the extent to which you agree with each statement by using the following scale.

   1 = strongly disagree; 2 = moderately disagree; 3 = slightly disagree; 4 = neutral;
   5 = slightly agree; 6 = moderately agree; 7 = strongly agree
11. I enjoyed playing “CSUSB Survivor”

12. I am pleased with my performance in CSUSB Survivor

13. I am pleased with the final results of the round(s) that I played in CSUSB Survivor

14. I am disappointed with how I finished in CSUSB Survivor

15. The scoring for the tasks was fair

16. My teammates were fair in the way they voted

17. I agree with the final vote in Round 1

18. I agree with the final vote in Round 2 (skip this question if you never played this round)

19. I thought the tasks were challenging

20. I thought the tasks were difficult

21. I thought the tasks were easy

22. Overall, the game was fair

23. Overall, my teammates were unfair

24. Overall, my teammates were fair

25. My teammates were likeable
26. I enjoyed playing the game with my teammates

1 2 3 4 5 6 7

27. My teammates were biased

1 2 3 4 5 6 7

28. My teammates were respectful

1 2 3 4 5 6 7

29. My teammates were rude

1 2 3 4 5 6 7

30. My teammates were considerate

1 2 3 4 5 6 7

Select the number that best represents your answer
To what extent do you feel the following factors contributed to your elimination from the game? (Skip this question if you were NOT eliminated from the game.)

a. Your ability

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Very much</td>
</tr>
</tbody>
</table>

b. Ethnic/racial discrimination

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Very much</td>
</tr>
</tbody>
</table>

c. Gender discrimination

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
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<td>Very much</td>
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d. The quality of your answers

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<tr>
<td>Not at all</td>
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e. Ethnic/racial prejudice on the part of the evaluator

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<tr>
<td>Not at all</td>
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f. Gender prejudice on the part of the evaluator

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<tr>
<td>Not at all</td>
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<td>Very much</td>
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g. The ability of your ethnic/racial group to strategize

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<tbody>
<tr>
<td>Not at all</td>
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<td>Very much</td>
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<th>7</th>
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<tr>
<td>Not at all</td>
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<td>Very much</td>
</tr>
</tbody>
</table>

h. The ability of your gender group to strategize

i. Page Break

1. What did you think about the Survivor game?

2. How did you feel about your performance in this game? How did you feel about the feedback you received from the other players?

3. Was there anything about the game itself that was vague or ambiguous?

4. Did anything seem strange or out of place?

5. Did you think that the information about the game was accurate?

6. Did you think the feedback from the other players was accurate and fair?
   _Yes, it was accurate and fair_   _No, it wasn’t accurate or fair_
   _It was accurate, but not fair_   _It was fair but not accurate_
7. Have you ever taken a course with this professor, Dr. Donna Garcia?
   __Yes   __No   __Maybe

Thank you for participating in this study. The researcher will now provide you with more information.

(Taken from Stewart; 2018).
APPENDIX I

DEBRIEFING STATEMENT
Ok, before you go I’d like to ask you a few questions.

Do you remember who was eliminated in the First Round – a white woman or a white man [circle participant’s answer]? What is the name of the person eliminated in the first round? ______________ Was the person eliminated the worst player [yes or no – circle participant’s reply]? Were you the worst player in the Second Round [yes or no – circle participant’s reply]? Were you fairly eliminated in the Second Round [yes or no – circle participant’s reply]?

In this study, there is more going on than what I told you about. It is true the tasks played in CSUSB Survivor measure your strategic ability, however, the outcome of Survivor was actually fixed. In fact, there really were no other players. Your overall scores and performance relative to the other players were also false, as were the comments from the other players. So, the feedback you received in Survivor says nothing about how intelligent or how good you are at the strategy tasks you completed. It also says nothing about how other players perceive you or choose to eliminate you from their team. All of the participants in our study, just as you experienced, learn that they are eliminated after the second round. Also, all participants complete the unrelated M&Ms tasks because it isn’t actually unrelated.

Does everything make sense so far [yes or no – circle participant’s reply]? Do you have any thoughts about what we might be looking for or what we might find?

Has anyone mentioned this study to you [yes or no – circle participant’s reply]?

We’re sorry to conceal the truth and deceive people, but hopefully you can understand the need for deception. If people knew, for example, that it wasn’t really a game of Survivor, they would respond very differently and our study wouldn’t work out.

So because your progress in the game was predetermined, it did NOT really affect whether or not you qualified for the drawing. There is a drawing for $100, and your name, along with the names of all the other participants, will be entered in the drawing. You will receive an email regarding the drawing during finals week. We will announce the winner during the week following finals.

Before you go, I would like to ask you to help me out by not talking to other people about the study—especially other people taking psychology courses. Will you agree?
If you want more information about this study, please feel free to ask me now or you can contact the experimenters at the address below [hand participant the next page]. Thank you again for participating in this study. You will receive your participation credits within the next few days.

Strategy Study

If you would like more information about this research or have further questions about this study; please feel free to contact Caitlin Shaw (Shawc307@coyote.csusb.edu) or Dr. Donna Garcia (dmgarcia@gmail.com) at California State University, San Bernardino, Department of Psychology. Please note that we cannot ensure confidentiality of information sent via email.
APPENDIX J

FIGURES
Figure 1. Means of Negative Emotions as a Function of Fairness and Type of Social Exclusion. Error bars represent standard error.

Figure 2: Mean of Calorie Consumption of M&M snack as a Function of Fairness and Type of Exclusion. Error bars represent standard error.
APPENDIX K

TABLES
Table 1: Breakdown Summary of 2 (Type of Exclusion: Individual v Group) x 2 (Fairness of Exclusion: Fair v Unfair) Analysis of Variance Results

<table>
<thead>
<tr>
<th></th>
<th>$F(1, 101)$</th>
<th>$P$</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Negative Emotion $(\alpha = .86)$</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>0.04</td>
<td>0.85</td>
<td>&lt;.00</td>
</tr>
<tr>
<td>Fairness</td>
<td>2.74</td>
<td>1.01</td>
<td>0.03</td>
</tr>
<tr>
<td>Type x Fairness</td>
<td>0.04</td>
<td>0.81</td>
<td>&lt;.00</td>
</tr>
<tr>
<td><strong>Calorie Consumption</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>1.44</td>
<td>0.23</td>
<td>0.01</td>
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<tr>
<td>Fairness</td>
<td>2.32</td>
<td>0.13</td>
<td>0.02</td>
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<tr>
<td>Type x Fairness</td>
<td>0.08</td>
<td>0.78</td>
<td>&lt;.00</td>
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<tr>
<td><strong>Self-Esteem $(\alpha = .74)$</strong></td>
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<tr>
<td>Type</td>
<td>0.46</td>
<td>0.5</td>
<td>&lt;.00</td>
</tr>
<tr>
<td>Fairness</td>
<td>11.89</td>
<td>&lt;.01*</td>
<td>0.1</td>
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<tr>
<td>Type x Fairness</td>
<td>0.04</td>
<td>0.84</td>
<td>&lt;.00</td>
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<tr>
<td><strong>Control $(\alpha = .35)$</strong></td>
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<tr>
<td>Type</td>
<td>0.37</td>
<td>0.54</td>
<td>&lt;.00</td>
</tr>
<tr>
<td>Fairness</td>
<td>0.28</td>
<td>0.6</td>
<td>&lt;.00</td>
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<td>Type x Fairness</td>
<td>3.35</td>
<td>0.07</td>
<td>0.03</td>
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<td><strong>Belonging $(\alpha = .65)$</strong></td>
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<td></td>
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<tr>
<td>Type</td>
<td>2.22</td>
<td>0.14</td>
<td>0.02</td>
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<tr>
<td>Fairness</td>
<td>1.7</td>
<td>0.2</td>
<td>0.02</td>
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<tr>
<td>Type x Fairness</td>
<td>0.04</td>
<td>0.85</td>
<td>&lt;.00</td>
</tr>
<tr>
<td><strong>Meaningful Existence $(\alpha = .81)$</strong></td>
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<tr>
<td>Type</td>
<td>7.52</td>
<td>0.01*</td>
<td>0.07</td>
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<tr>
<td>Fairness</td>
<td>6.25</td>
<td>0.01*</td>
<td>0.06</td>
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<td>Type x Fairness</td>
<td>2.85</td>
<td>0.09</td>
<td>0.03</td>
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*Note*: *$p$ is significant at the .05 level, two tailed.*
Table 2: Correlations between Negative Emotion and Calorie Consumption for Type and Fairness of Exclusion

<table>
<thead>
<tr>
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<th>Calorie Consumption</th>
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</thead>
<tbody>
<tr>
<td><strong>Individual Exclusion</strong></td>
<td></td>
</tr>
<tr>
<td>Fair</td>
<td>.25 (29)</td>
</tr>
<tr>
<td>Unfair</td>
<td>0.22 (25)</td>
</tr>
<tr>
<td><strong>Group Exclusion</strong></td>
<td></td>
</tr>
<tr>
<td>Fair</td>
<td>-.30 (31)</td>
</tr>
<tr>
<td>Unfair</td>
<td>.21 (20)</td>
</tr>
</tbody>
</table>
APPENDIX L

IRB APPROVAL LETTER
October 1, 2019

CSUSB INSTITUTIONAL REVIEW BOARD
Protocol Change/Modification
IRB-FY2019-90
Status: Approved

Prof. Donna Garcia and Ms. Caitlin Shaw
CSBS - Psychology
California State University, San Bernardino
5500 University Parkway
San Bernardino, California 92407

Dear Prof. Donna Garcia and Ms. Caitlin Shaw:

The protocol change/modification to your application to use human subjects, titled "Self-Categorization Study" has been reviewed and approved by the Chair of the Institutional Review Board (IRB). A change in your informed consent requires resubmission of your protocol as amended. Please ensure your CITI Human Subjects Training is kept up-to-date and current throughout the study.

You are required to notify the IRB of the following by submitting the appropriate form (modification, unanticipated/adverse event, renewal, study closure) through the online Cayuse IRB Submission System.

1. If you need to make any changes/modifications to your protocol submit a modification form as the IRB must review all changes before implementing in your study to ensure the degree of risk has not changed.
2. If any unanticipated adverse events are experienced by subjects during your research study or project.
3. If your study has not been completed submit a renewal to the IRB.
4. If you are no longer conducting the study or project submit a study closure.

You are required to keep copies of the informed consent forms and data for at least three years.

If you have any questions regarding the IRB decision, please contact Michael Gillespie, Research Compliance Officer. Mr. Gillespie can be reached by phone at (909) 537-7588, by fax at (909) 537-7028, or by email at mgillesp@csusb.edu. Please include your application identification number (above) in all correspondence.

Best of luck with your research.

Sincerely,

King-To Yeung

King-To Yeung, Ph.D, IRB Vice Chair
CSUSB Institutional Review Board
REFERENCES


