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Self-Perception as a Function of
Objective Self-Awareness and Role-Playing

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ABSTRACT

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When people are involved in role-playing games, they often get wrapped up in the game and subsequently their behaviors change. Some people are able to perceive that their behaviors change while others seemingly cannot. Objective self-awareness (OSA) refers to a state when a person is internally focused on the self as opposed to externally focused elsewhere and can be triggered by seeing oneself in a mirror. The current study examined the effects of objective self-awareness on the accuracy of self-perception after participating in a role-playing scenario. Participants were assigned a role to play in a decision-making scenario. Immediately following, participants took a self-perception survey asking about their behaviors during the experiment. Half of the participants took the survey in front of a mirror and half did not. The accuracy of participants' self-perception was determined by independent judges who coded video-recordings of the participants during the role-playing scenario. It was predicted that the OSA participants would self-perceive more accurately, but the results were not significant.

Self-Perception as a Function of Objective-Self Awareness and Role-Playing

If you have ever participated in, or known someone who participated in, a role-playing game, be it online or live action, you understand how easy it is to get wrapped up in the game and lose touch with reality. But what about those who are unable to see or admit how taking on a character in a role-playing game changes their attitudes and behaviors? Take, for example, the game *Humans versus Zombies*, a live action role-playing game sweeping college campuses nationwide.

The game consists of two teams who play a reciprocal game of cat and mouse for about a week. While observing the game in action on a college campus, it becomes obvious that students get overly involved in the game; they even start to skip classes and meals in order to win. After observing the players, one may ask, “What are they doing and how can it possibly be worth it to rearrange your life for a game?” When asked, some players adamantly claim that the game’s thrill outweighs regular life activities and willingly admit that they change temporarily while playing. Other players, however, deny any claims of attitude and behavior change until they are blue in the face. Even after the fact, when the game is over and they are reflecting, players claim that the game never “got to them” and that they remained their plain, old selves the entire time. After observation, however, it does not seem that such self-perceptions on the players’ parts are accurate. Therefore, further investigation into role-playing and self-perception is necessary.

Several issues and concerns surrounding role-playing have already been studied. For instance, it has been found that role-playing games cause more internet addictions than other internet games used by adolescents (Lee, Ko, Song, Kwon, Lee, Nam, & Jung,

2007). Lee et al. conducted a study that looked at games frequently used by, and internet use patterns of, Korean adolescents. In particular, they examined 627 middle and high school students who filled out two surveys: one measuring internet usage/internet game preference and one measuring internet addiction. Using the addiction scale, participants were separated into one of three categories with regards to internet addiction: normal group, potential-risk group, and high-risk group. Internet games were divided into eight categories using expert gamers' advice: simulation, role-playing, web boards, community, action, adventure, shooting, and sports games. With regards to role-playing games (RPGs), they found that RPGs were more preferred by high-risk internet addiction users. This suggests that RPGs are more likely to cause internet addictions, which poses a concern with regards to the role-playing game genre.

Smyth (2007) also looked at video games and found that role-playing games in particular can have negative influences on people's lives. One hundred 18 to 20 year olds were randomly assigned to play arcade, console, solo computer, or massive multiplayer online role-playing games for one month. After one month, Smyth then looked at the participants' overall game usage, health, well-being, sleep, socialization, and academics. The one month status report for the participants in the role-playing game condition differed significantly from the rest of the gaming conditions. Role-players spent more hours gaming, had worse health and sleep quality, and let their gaming interfere more with their social lives and academics. Role-players, however, also reported enjoying their games the most. Therefore, although role-playing games most negatively impacted participants' lives, participants enjoyed the games so much that they were more likely to

keep playing those types of games – a vicious cycle. Even though the role-playing games were taking place online, they were clearly impacting the players' real lives as well.

Another reason it is worthwhile to study role-playing games in general is that people in certain role-playing conditions are more likely to take risks (Kipper, 1992). In this study, 22 Israeli college students who scored low on an initial assertiveness scale were separated into two role-playing conditions: mimetic pretend and spontaneous. In the mimetic pretend group, participants were told to imitate the actions of someone else while role-playing. In the spontaneous group, they were told to act as themselves. In both conditions, the role-playing scenarios included situations that dealt with assertiveness. After participating in the role-playing conditions, participants filled out the initial assertiveness scale again. While both groups improved their assertiveness scores, the mimetic pretend groups showed significantly more progress than the spontaneous group. In particular, the mimetic pretend group showed an increase in willingness to assertively take risks. This supports that certain role-playing conditions can lead to an increase in risk taking, which makes researching other factors that influence role-playing results worthwhile.

Furthermore, research also supports that role-playing can cause attitude and behavior change. Kopel and Arkowitz (1974) conducted a study that showed that people can increase their pain and tolerance thresholds based on certain role-playing conditions. Forty-five female college students were split into three role-playing groups; one group role-played clam behaviors, another upset behaviors, and the third received no role-play instructions. All participants were given three series of electric shocks that tested pain and tolerance thresholds. The role-playing took place during the second shock series and

the other two shock series were the same for all role-playing conditions. The changes in pain and tolerance levels from the first to third shock series were measured by independent coders who observed the participants' behaviors during the study from behind a two-way mirror. It was found that role-playing calm or upset resulted in subsequent behavior changes; participants who role-played calm showed a significantly greater increase in pain and tolerance thresholds than those who role-played upset. This study supports that role-playing can result in behavior change.

Role-playing techniques are so effective in changing people's attitudes and behaviors that they are employed in psychotherapy sessions with the intention of bringing about change in a patient (Moreno 1964, as cited in Martin, 1991). For instance, Lira, Nay, McCullough, and Etkin (1975) used role-playing techniques to treat avoidance behaviors. Undergraduate students who scored a five out of five on a fear survey with regards to snakes were asked to participate in this study. Participants were randomly assigned to one of four conditions: modeling therapy, role-playing therapy, control condition, or a no treatment condition. In the modeling therapy condition, participants viewed a video tape with an adult who progressively got closer to a snake. In the role-playing condition, participants role-played as someone who gradually moved closer to an imaginary snake. In the control condition, participants watched a video of just a snake. In the no treatment condition, participants received no treatment at all. Fear and avoidance behavior measures were taken before, during, and after the therapy techniques, including a two month follow-up test to see if the treatment styles had any lasting effects. Role-playing was found to be the best therapy technique. Role-playing, therefore, is so effective at changing attitudes and behaviors that it is used as a form of therapy.

What about role-playing games, however, such as *Humans versus Zombies*, played simply for fun? They are not meant to bring about changes in the players, but since role-playing can change attitudes and behaviors, such changes may happen during leisure role-playing scenarios. Since the players do not engage in the games with the intention of bringing about change, however, perhaps that is why they are seemingly unaware of the changes that are directly affecting them; they took up the role-playing game as a means of entertainment and are naïve to the possible side effects. Perhaps role-playing gamers are not always able to identify that their behaviors and attitudes change while role-playing. In other words, maybe they are not always able to accurately self-perceive what their attitudes and behaviors were during a role-playing scenario.

Given that research suggests that role-playing can have undesirable, addictive, and behavior changing effects on people, the possible lack of accurate self-perception during role-playing games is even more disconcerting and worth studying. Kipper (1988) conducted a study that looked at the effects of different role-playing conditions on accurate self-evaluation. Participants role-played in one of two conditions: a mimetic-pretend condition or a spontaneous condition. In both conditions, the role-playing situation was the same. In the mimetic-pretend condition, participants were asked to assume a fake identity. In the spontaneous condition, participants were asked to role-play as themselves. After role-playing, participants watched video-tape feedback of themselves acting out the role-playing scenario of which they had just been a part. After watching the video, they were asked to evaluate their own role-playing behaviors on a Behavior Evaluation Form (Kipper & Ginot, 1979, as cited in Kipper, 1988), which consisted of a checklist containing 23 behavioral characteristics. Two independent judges

also rated the participants' performances using the same checklist. The participants' self-evaluations were then compared to the judges' evaluations to measure the participants' self-evaluation accuracy. It was found that the self-evaluations of the participants in the mimetic-pretend condition were more accurate than those in the spontaneous condition, suggesting that psychological distancing from a role results in more accurate self-evaluation.

While Kipper's (1988) study supports that accurate self-evaluation after role-playing is possible in certain scenarios, there are many other role-playing scenarios that could lead to different self-evaluation results. Kipper has conducted several studies looking at role-playing and has concluded that "different role-playing patterns tend to produce different outcomes" (Kipper, 1992, pp. 249). His 1988 study, for instance, actually had participants watch a video of the role-play they had participated in before evaluating themselves. What about when participants are asked to reflect upon their role-play performance strictly from memory? Perhaps the accuracy levels would change. Current and past performance, according to Gramzow and Willard (2006), get exaggerated when they are recalled from memory. They proposed that self-reports end up being biased because of motivated self-enhancement and reconstructive memory. More specifically, they argued that current performance reports are more likely to be influenced by motivated self-enhancement while past performance reports are more likely to be subtly influenced by reconstructed memory.

After conducting a series of studies that looked at students' self-reported GPAs as a measure of current performance and self-reported SAT scores as a measure of past performance, Gramzow and Willard (2006) found that participants consistently reported

higher GPAs and SAT scores than they actually received. Furthermore, based on correlational data between self-reported scores and self-enhancement scales, it was found that the inaccuracy of the more current GPA scores was due to motivated self-enhancement while the inaccuracy of the past SAT scores was due to reconstructive memory. This supports that self-reports can be inaccurate due to a need to present oneself in a favorable light. Therefore, while Kipper's (1988) study supports that accurate self-evaluation after role-playing is possible in certain scenarios, there are other variables that can impact self-perception accuracy, such as feeling the need to present oneself in a desirable light. Furthermore, the participants in Kipper's mimetic-pretend condition were able to judge themselves more impartially because they were not judging their actions as themselves; they were judging their actions in a pretend role. When everyone is in the same role-playing condition, however, such as during role-playing games where everyone is in the mimetic condition, would certain participants still self-evaluate their performance more accurately than others? Overall, there are many variables that have yet to be researched with regards to role-playing and self-perception accuracy. One possible moderator of role-playing self-perception is objective self-awareness.

Objective self-awareness (Wicklund & Duval, 1971) refers to when people are internally focused and thinking about what they truly believe. Hutton and Baumeister (1992) conducted a study that supported that people in a state of self-awareness process incoming information with regards to themselves, and, therefore, when faced with personally relevant information, they exhibit more careful thought processing. Their logic is based on the elaboration likelihood model (Petty & Cacioppo, 1986, as cited in Hutton & Baumeister), which says that there are two different routes, central and peripheral, on

which people process persuasive information. Cognitive processing along the central route requires effortful thinking. Hutton and Baumeister reasoned, therefore, that self-aware people, when faced with personally relevant information, use the central processing route because they are willing to commit to effortful thinking if it concerns them. Furthermore, since self-awareness makes peoples' beliefs salient, their attitudes are readily accessible and available to be involved in cognitive processing, which also increases the chances that central route processing will take place.

For example, in Experiment 1 of their study, Hutton and Baumeister (1992) predicted that students who were put in a state of self-awareness would be able to resist a persuasive attack on a personally relevant topic better than students not in a state of self-awareness. The students had to read counter-attitudinal essays about the food service on their campus, a topic that was personally relevant to them. Then they filled out a questionnaire, indicating whether they agreed with the essay. Half of the students did this in front of a mirror, which put them in a state of self-awareness, and half of them did not. As predicted, the self-aware students in the mirror condition agreed significantly less with the counter-attitudinal essay than those in the non-mirror condition and were therefore more competent at resisting persuasion, which is a pattern associated with central route processing. This logic can be applied to objective self-awareness and its effects on self-perception. If participants are in a state of self-awareness, then they will be more likely to willingly process self-relevant information and therefore report more accurate self-perceptions.

While objective self-awareness has been shown to alter self-perception, according to Silvia and Gendolla (2001) no research supports that objective self-awareness makes

self-perception more accurate. In fact, they claim that self-judgments should be expected to be inaccurate based on research, such as Bem's (1972, as cited in Silvia & Gendolla), that says people are unaware of internal states and Nisbett and Wilson's (1977, as cited in Silvia & Gendolla) that says self-judgments are based on shared public theories.

Logically, however, it makes sense that objective self-awareness would increase self-perception accuracy because, according to Hutton and Baumeister (1992) and Ickes, Layden, and Barnes (1978), being in a state of objective self-awareness helps people better process self-relevant information on an individual level.

Pryor, Gibbons, Wicklund, Fazio, and Hood's (1977) research also supports that being in a state of objective self-awareness helps make people's self-perception more accurate. Specifically, they found that being in a state of self-focused attention decreased the gap between self-report survey answers and actual past behaviors. Three experiments were conducted to look into this relationship. First predictive validity was examined, which looks at the extent to which a self-report will accurately reflect future behavior. It was hypothesized that the validity of a self-report scale would be increased due to self-focused attention. In other words, if someone is self-focused while filling out a self-report survey, they will more accurately report their past behaviors, which will in turn make the self-report scale a more valid predictor of their future behaviors. The predictive validity hypothesis was supported. The other two experiments looked at postdictive validity and whether or not people reported past behaviors incorrectly in order to make them more consistent with current self-views. In one of the postdictive validity experiments, participants were asked to recall their SAT scores either in front of a mirror (self-focused condition) or not (control condition). It was hypothesized that participants in front of the

mirror would report their scores more accurately, and the hypothesis was supported.

Overall, Pryor et al.'s research supports that self-focused attention makes self-reports more consistent with actual behavior, which in turn makes it logical to assume that being in a state of self-focused attention will make self-perception reports more accurate.

Hutton and Baumeister's (1992) and Ickes, Layden, and Barnes' (1978) research support that objectively self-aware people are more likely to accurately self-perceive because they have better access to self-relevant information and will therefore make judgments based on internal factors and not external factors. Pryor et al. (1977) support that self-focused attention makes self-reports more consistent with actual past behaviors. All of the above goes against Silvia and Gendolla's (2001) misgivings about being able to study self-perception accuracy and objective self-awareness. As previously stated, previous research on self-perception accuracy after participating in a role-playing scenario leaves much to be desired, and therefore the current study looked at how objective self-awareness affected the accuracy of self-perception after participating in a role-playing situation. In particular, it was hypothesized that objectively self-aware participants would give more accurate answers on a self-perception survey after partaking in a role-playing scenario than those who were not objectively self-aware.

Several confounds associated with objective self-awareness need to be taken into consideration when examining self-perception after a role-playing situation. For instance, the group dynamic of the participants involved in the role-playing scenario could affect objective self-awareness. Wegner and Schaefer (1978) examined group size and self-focused attention. In particular, they looked at objective self-awareness and how it was affected by group size in helping scenarios. They used a 2x2 design that manipulated the

number of helpers and number of victims used in each experimental situation. They hypothesized that participants put in helping situations with more victims would be more likely to be objectively self-aware. They also hypothesized that if participants perceived that they were part of a larger helping group then they would be less objectively self-aware. Both hypotheses were supported. Bystanders are more likely to focus on the victim and become subjectively self-aware if there are fewer victims, larger perceived bystander groups, or both. Likewise, bystanders are more likely to focus attention on themselves when there are more victims or when they believe they are the only people helping.

For the purposes of the current study, a state of objective self-awareness during the role-playing situation needed to be avoided because it would be a confound. If participants are objectively self-aware while role-playing they are more likely to be aware of their actions which would play a role in their self-perception afterwards. Invoking objective-self awareness during the role-playing situation was not the point of the study. Rather, seeing how participants responded in different conditions of self-awareness after role-playing was the goal of the current study. In order to avoid the victim-helper effects found in Wegner and Schaefer's (1978) study, the number of participants needs to be kept even and all of the roles need to be relatively similar and equal in importance so that all of the participants are equally involved.

When it comes to role-playing, one of the age old questions is why certain people get more into it than others. Several factors contribute to participant involvement in role-playing situations. For instance, the more natural the role-playing seems to the participants, the stronger their relationship between role-playing and natural behaviors

(de Armas & Brigham, 1996, as cited in Martin, 1991). Furthermore, the level of participant involvement in the role-playing situation relates to the level of emotional response from the participant (Martin, 1991). Role-playing performance is also not organized around social motives, such as need achievement and need affiliation (Spector, London, & Robinson, 1972). In other words, how someone acts while role-playing is not necessarily dependent on their actual needs or how involved they would be in real life. That being said, incentive can influence role-playing (Spector et al.). If people have an incentive to participate in the role-playing, chances are they will be more involved.

Another factor that may affect participant involvement in role-playing situations is how much they like the role they are playing. As supported by Hsu, Kao, and Wu's article (2007), certain players may identify with certain characters in a role-playing game, which would then increase their level of investment in the situation. Therefore, when designing a study where it is necessary for all of the participants to be as equally involved as possible, the roles for the participants should be generic enough that no one will be familiar with them and therefore role preference will be avoided. If participants get a role they identify with more than others, then they are more likely to naturally slip into a state of self-awareness, which would be a confound when measuring the effects of objective-self awareness on self-perception after the role-playing situation takes place. During the role-playing, all roles need to be equal so all participants are on equal footing.

Companion & Sambrook (2008) found that males and females may identify with some characters and characteristics more than others. This reinforces that it is necessary to be careful when designing a role-playing study so that participants do not identify with distinct characters more than others. This would create a self-awareness confound

because if someone identifies with a character more, be it for gender reasons or otherwise, then they may be more self-focused and therefore self-aware while role-playing. Furthermore, if they relate more to one character than another, then their role-playing may seem more natural and therefore evoke emotions and responses differently than in those participants who cannot relate to the role they are playing.

Myriad role-playing methods have been used in psychological studies.

Determining which methodology to use for what studies has been a bone of contention in the experimental field. Based on a meta-analysis of psychological research studies using role playing, Greenburg and Eskew (1993) determined that different types of role playing techniques should be used depending on the goal of the research. They separated research into two different categories: research aiming to learn about attitudes and behaviors in an organized setting and research aiming to learn about psychological processes. They also separated role playing characteristics into three categories: level of involvement, role being played, and degree of response specificity. According to Greenburg and Eskew, participants in research studies looking at attitudes and behaviors should be highly involved, playing roles familiar to them, and have the ability to respond in an open manner. Participants in research studies looking at psychological processes should be less involved, playing unfamiliar roles, and be allowed narrowly defined responses.

The current study was a mix between Greenburg and Eskew's (1993) two research categories and therefore combined techniques suggested for both categories, while also taking into account the already previously discussed confounds. Participants were assigned one of four roles to act out for a 10 to 15 minute period; they were told that they were travelers who needed to get onto an overbooked flight and that they needed to

decide who would be allowed to get onto the plane and who would wait for the next flight. As added incentive to increase involvement during the scenario, participants were told that if they convinced their fellow participants that they deserved to get onto the plane the most then they would receive a monetary prize of 4 dollars at the end of the study in addition to their normal compensation for study participation.

After participating in the role-play scenario, participants were asked to fill out a self-perception survey about their role-playing experience. Half of the participants filled out the survey in front of a mirror, and were thus in a state of objective self-awareness, and the other half were in the control condition and filled the survey out in a regular examination room with no mirror. While role-playing, participants were unknowingly video-taped, and independent judges rated participants' levels of involvement and behaviors. The judges' ratings were then compared to the participants' survey responses to determine how accurately participants self-perceived their role-playing behaviors after the fact.

It was hypothesized that participants in a state of objective self-awareness while reflecting on their behaviors would be able to better perceive that they changed while role-playing. Likewise, it was hypothesized that participants not in a state of objective self-awareness would not be as self-perceptive to how they changed during the role-playing situation. The hypotheses were not supported.

Method

Participants

A total of 79 Union College students, 20 males and 58 females, participated in the experiment. They were recruited by an online sign-up mechanism advertised to the entire

campus. They were from various academic majors and ranged in age from 17 to 23.

Students either received credit towards their Introduction to Psychology/Research

Methods course grades or monetary compensation for their participation.

Materials

For the purposes of this study, an experimental room with a main meeting area and three side rooms was used. A digital video-camera, which was hidden in the corner of the main room underneath a t-shirt, basket, and crayon box, was used to video tape the participants during part of the study. Large mirrors, approximately 36 by 24 inches, were placed on desks in two of the three side rooms off of the main room. The third side room consisted of a desk without a mirror present. Another room across the hall that consisted of a desk without a mirror was also used. The main room consisted of a long table with five chairs surrounding it.

A self-perception survey was also used. The survey consisted of 25 questions, 11 of which were self-perception questions and the rest were distracter questions.

Participants were asked to rate how much they agreed with each question on a five point Likert-type scale where the scale was 1 = strongly disagree, 2 = somewhat disagree, 3 = neither agree nor disagree, 4 = somewhat agree, and 5 = strongly agree.

Procedure

At the start of the study, all participants signed an informed consent form. The experiment was only run when there were either four or three participants in a group. A cover story was used and participants were told that the study was looking at decision-making in a group setting. Deception was necessary because if the participants had known that the study was looking at role-playing they would have become internally

focused, which would have been a self-awareness confound. Participants were then read a scripted introduction by the experimenter. They were told that they were all airline travelers who were booked on the same flight. However, the airline made a mistake and overbooked the flight, and therefore only two of the four of them (or one of the three of them, depending on the experimental group size) were able to get onto the plane. They were informed that each of them had an equally pressing and important need to be on that flight. The participants were told that they had 10 to 15 minutes to talk amongst themselves, without the experimenter interfering, to decide which one or two of them got to go on the plane. It was made clear that they were to try their best to come to a decision by the time the 10 to 15 minutes were up. Furthermore, as added incentive to get into their roles and take part in the discussion, participants were told that those who argued well enough for themselves and convinced their peers that they should get onto the plane would receive four extra dollars compensation at the end of the study.

Once the introduction was finished, each participant was randomly assigned a piece of paper that told them which one of four roles to play during the situation: a parent who needed to get to his or her only child's college graduation, a person who needed to get to his or her own wedding, a winner of an once-in-a-lifetime award on the way to the acceptance ceremony, and a son or daughter who needed to get to his or her mother's 100th birthday celebration. Also on the piece of paper that participants received were four talking points as to why they should get one of the plane tickets. This helped participants initiate the discussion. They were told, however, that they could elaborate as much as they wanted to about their roles after reading the initial prompts on the pieces of paper.

The participants discussed the matter until they had come to a decision or until the 15 minute limit was up. The experimenter gave the participants a time warning when they reached the ten minute mark. After the discussion was completed, each participant was put into a separate, smaller room to take a survey to measure how they perceived their actions during the study. The survey is presented in Appendix A. Two of the four survey rooms had large mirrors resting directly in front of where the participant was sitting. When the participants were brought into one of the rooms with a mirror, the experimenter called attention to it by saying, "Please do not touch the mirror – it's being used for a different study." By calling attention to it, participants were prompted to look into the mirror and be brought into a state of objective self-awareness. In the other two survey rooms, which acted as the control condition, mirrors were not present.

During the discussion portion of the study, participants were video-taped by a hidden camera. The video-taping was necessary so participant behaviors and mannerisms could be coded by judges later on. Participants were not told from the start that they were being taped because it would have caused a state of objective self-awareness, which would have compromised the purpose of the study. After participants were done filling out their surveys, they were given a video release form to sign. The form told them about the video taping and asked them to sign their consent for the tape of them to be used for coding purposes. Participants were then debriefed as to the true purpose of the study and given their compensation for their participation and prize money if they got onto the plane.

After the current study was done being run, two independent judges watched all 23 group sessions and rated each participant using the same self-perception survey

participants were given at the end of the study. Therefore, every participant had three scores for each self-perception question on the survey – their own and the judges’.

Results

Every participant in the current study answered 11 self-perception questions. For every self-perception question answered by a participant, there were two corresponding judge scores. An inter-rater reliability test was conducted to make sure the two judges were rating participants in the same way on each survey question and all inter-rater reliability coefficients were greater than .60, $p < .05$. The two judges’ scores for each self-perception survey question were averaged together to form one judge score for each question answered by a participant. For all 11 self-perception questions, the absolute difference between the participants’ scores and the judges’ average scores was calculated. For each participant, the overall difference between their scores and judges’ average scores was calculated by adding together the absolute difference scores for each survey question.

As shown in Table 1, the mean absolute difference scores for participants in the mirror and non-mirror conditions were calculated for each survey question. The group means (mirror vs. non-mirror) for each survey question were then compared using a series of independent samples t -tests as a way to measure self-perception accuracy. A t -test was also used to compare the mean overall difference between participant scores and judges’ average scores in the mirror and non-mirror conditions. The results of the t -tests are presented in Table 2. The results were not significant.

Discussion

The current study looked at self-perception as a function of role-playing and objective self-awareness. It was hypothesized that participants in a state of objective self-awareness while reflecting on their behaviors would be able to better perceive that they changed while role-playing. Likewise, it was hypothesized that participants not in a state of objective self-awareness would not be as self-perceptive to how they changed during the role-playing situation. The hypotheses were not supported.

Self-perception accuracy was measured by comparing the participants' self-ratings to the judges' average scores. According to the hypothesis, when participants rated themselves in front of a mirror, which induces a state of objective self-awareness, their scores should have been closer to the judges' scores because being in a state of objective self-awareness would make them self-perceive more accurately. Likewise, the participants who rated themselves without a mirror present should have self-perceived less accurately and therefore had self-reported scores that were further away from the judges' ratings. When the absolute difference scores for each question in the mirror and non-mirror conditions were compared, however, there was no significant difference for any of the self-perception questions. In other words, objective self-awareness did not significantly impact self-perception accuracy after participating in a role-playing scenario.

While the results looking at self-perception accuracy were not significant, it is worth noting that several of the mean absolute difference scores comparing the objective self-awareness conditions were heading in the significant direction by having smaller mean differences in the objective self-awareness (mirror) condition than the non-

objective self-awareness (non-mirror) condition. As seen in Table 1, 7 of the 11 self-perception questions had results heading in the direction needed to support the hypotheses. The three questions that were in the opposite direction, and therefore heading even further in the non-significant direction, asked whether or not participants raised their voices during the experimental role-playing scenario, remained composed throughout the study, and if they failed to get their points across during the study. It is possible that the wording of the previously listed questions was confusing, and therefore both the participants and judges may have been thinking about the questions in different ways when answering them. That being said, part of the reason that none of the results heading in the right direction were significant may also have been due to the fact that the question wording used on those survey questions was confusing to the participants and judges. Perhaps the three that had results heading in the opposite direction were just more confusing.

Several more factors may have influenced why the self-perception questions that produced results heading in the correct direction did produce significant results. The current study was conducted at a small liberal arts college with a limited participant pool and scarce resources. The scarce resources, in particular, may have caused the results of the current study to be insignificant. Due to a lack of undergraduate thesis funding, an incentive of only 4 dollars was able to be offered as a prize for being a winner at the end of the role-playing scenarios. As supported by Spector, London, & Robinson (1972), incentive can affect level of involvement in a role-playing scenario. Subsequently, level of involvement can impact how invested in a role a participant gets, which ultimately influences whether they actually carry out their role-playing assignment; if participants

are uninvolved, the less likely they are to actually role-play. If participants do not role play, then when they fill out the self-perception survey they will not be reflecting upon role-playing. Therefore, the self-perception results will not measure what they are supposed to. Overall, the more involved participants are the better. Therefore, if a larger incentive had been offered, such as 20 dollars, perhaps participants would have cared more about winning and would have tried harder to argue their position and play their role to the best of their ability.

With regards to participant involvement, another reason the results did not support the self-perception accuracy hypothesis may have been due to the experimental design used for the current study. The current study was inspired by live action role-playing games like *Humans versus Zombies* that are popular on college campuses. The method used for the current study, however, was less of a game and more of a role-playing discussion. Perhaps if the current study had actually had the participants partake in a role-playing game that involved movement and action, the results may have been different. Actual movement would have required more physical investment, which may have resulted in more overall role-playing investment.

Furthermore, as supported by Hsu, Kao, and Wu (2007), certain players may identify with certain characters in a role-playing game, which would then increase their level of investment in the situation. Therefore, when designing the current study, careful consideration went into what roles would be used so that all of the participants would be as equally involved as possible to avoid role preference scenarios. However, out of the four roles used in the current study – the person who needed to get to his/her own wedding, the only child who needed to get to his/her mother's 100th birthday, the

physicist who needed to get to a ceremony to receive a once-in-a-lifetime award, and the mother/father who needed to get to his/her only child's college graduation – the 100th birthday role was overwhelming seen as the least important role, both by participants who were actually playing the role and those who were playing other roles. In fact, out of the 23 role-playing scenarios carried out by the 79 participants, the 100th birthday role only won once whereas the other three scenarios each won 9 to 11 times. Despite efforts, therefore, not all roles were viewed as equal and not all participants were equally invested in their roles, which may have impacted the role-playing scenario in such a way that it altered the effectiveness of the experimental design.

Several confounds associated with objective self-awareness need to be taken into consideration when assessing why the self-perception accuracy hypothesis was not supported. According to Wegner and Schaefer's (1978) study, making the roles relatively similar and equal in importance so that all of the participants are equally involved is also important with regards to avoiding victim-helper effects. Victim-helper effects trigger objective self-awareness during the role-playing scenario, which would have been a confound during the current study. The fact that the 100th birthday role was overwhelming under favored may have caused victim-helper effects by causing the participants playing the 100th birthday role to be ganged up on by the other roles. Such a scenario would cause the 100th birthday participants to become objectively self-aware during the role-playing scenario, which would be a confound because it could potentially carry over into the objective self-awareness manipulation that took place during the survey stage of the experiment. Some participants who were in the non-mirror and therefore non-objective self-awareness conditions may have actually been in a state of

objective self-awareness due to victim-helper effects caused by unequal role involvement.

Another part of the current study's design that may have caused a victim-helper (Wegner & Schaefer, 1978) confound was group size. The original design was to only run the study with a group of four participants so as to avoid situations where two-on-one or three-on-two arguments would happen and cause the attacked persons to become self-conscious and therefore self-aware before the objective self-awareness manipulation stage. Due to limited time and resources, however, groups of three were also used in the current study. A 2 (objective self-awareness condition: mirror or no mirror) x 2 (group size: 3 people or 4 people) analysis of variance (ANOVA) was performed on the absolute difference score for all 11 self-perception questions. It revealed that for 9 out of the 11 self-perception survey questions there was no significant interaction between objective self-awareness and group size. Therefore, while group size did interact with objective self-awareness for two of the questions – producing significant means when groups of three but not four participated – for the most part group size did not impact the results in a significant fashion. Furthermore, the two questions that did show a significant interaction were “raised voice” and “remained composed,” which contradict each other – raising your voice implies that you are lacking composure. Therefore, even the questions affected by group size do not seem consistent.

Another aspect of the current study that may have caused objective self-awareness confounds was that the experimental lab that was used contained three two-way mirrors. Two-way mirrors evoke thoughts of being watched, which could cause participants to become more aware of themselves and inwardly focused, thus producing a state of

objective self-awareness. Although the two-way mirrors were partially covered up, several participants still asked about them and got distracted by them during their role-playing discussions. Once again, some participants who were in the non-mirror and therefore non-objective self-awareness conditions may have actually been in a state of objective self-awareness due to preemptive self-awareness caused by the presence of the two-way mirrors in the lab space.

Perhaps the most obvious confound that needs to be addressed when discussing a study looking at self-perception as a function of objective self-awareness and role-playing is that role-playing can intrinsically induce self-observation and therefore self-perception (Kopel & Arkowitz, 1974). Subsequently, objective self-awareness may be confounded because self-perception caused by role-playing games could preemptively cause inwardly focused self-awareness. To avoid role-playing from intrinsically inducing a state of self-perception, it would be necessary to keep participants from focusing on the fact that they were role-playing as much as possible. This presents a catch-22 situation because it is difficult to have a role-playing game or scenario if participants do not know that they are role-playing. Perhaps if participants became so engrossed in the role-playing that it temporarily seemed like reality this confound could be avoided. Such a feat, however, would require the role-playing scenario to take place over a long period of time or at a high intensity or both. For the purposes of the current study, the means and resources necessary to produce such a role-playing scenario were not available.

Overall, many potential confounds could explain why the hypothesis that self-perception would be more accurate in the objectively self-aware condition than the non-objectively self-aware condition was not supported. However, most of the confounds

could be rectified if better facilities, such as an appropriate lab space without two-way mirrors, and resources, such as more incentive money for a larger winner prize, were available. Furthermore, if the current study design was modified slightly, such as by wording the self-perception survey questions in a way that made them clearer and by replacing the 100th birthday role, then even more of the confounds would be eliminated. Especially since the majority of the insignificant data found during the current study was heading in the right direction, future research continuing to look at self-perception as a function of objection self-awareness and role-playing would be beneficial.

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Appendix A

Self-Perception Survey

1. My point was overlooked during the study.
 2. I dominated the conversation during the study.
 3. I felt confident presenting my argument during the study.
 4. I raised my voice during the study.
 5. I spoke less than others during the study.
 6. I remained composed throughout the study.
 7. I presented my position enthusiastically during the study.
 8. I was a discussion leader during the study.
 9. I failed to get my point across during the study.
 10. I was sure of myself during the study.
 11. I talked the same amount as everyone else during the study.
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Table 1

Mean Absolute Difference Score as a Function of Objective Self-Awareness

Self-Perception Question	Objective Self-Awareness Condition	
	Mirror	No Mirror
1. Point overlooked	.98	1.20
2. Dominated conversation	.75	.88
3. Felt confident	1.29	1.39
4. Raised voice	1.23	1.21
5. Spoke less	.80	.97
6. Remained composed	1.42	1.23
7. Enthusiastic	1.29	1.33
8. Discussion leader	.63	.70
9. Failed to get point across	1.62	1.23
10. Sure of self	1.09	1.44
11. Talked the same as everyone else during the study	1.24	1.14
Overall Difference	12.35	12.71

Table 2

Self-Perception Accuracy as a Function of Objective Self-Awareness

Self-Perception Questions	<i>t</i> -test results comparing mirror and non-mirror conditions	
	<i>t</i> value	<i>p</i> value
1. Point overlooked	-.92	.12
2. Dominated conversation	-.88	.16
3. Felt confident	-.46	.94
4. Raised voice	.07	.25
5. Spoke less	-1.00	.69
6. Remained composed	.89	.16
7. Enthusiastic	-.19	.25
8. Discussion leader	-.48	.76
9. Failed to get point across	1.53	.99
10. Sure of self	-1.75	.12
11. Talked the same as everyone else during the study	.60	.53
Overall Difference	-.36	.65