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A Research Assistant's Perceived Skillset When Utilizing Deception

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A RESEARCH ASSISTANT'S PERCEIVED SKILLSET WHEN UTILIZING DECEPTION
by

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(Under the Direction of Karen Z. Naufel)

ABSTRACT

The use of deception in research has been a long-debated topic for several decades. Generally, research on deception has concerned its justifications, common methods, controversies, and uses inside and outside the broad field of psychology. Although the bulk of this research is typically concerned with exploring the potential drawbacks and controversies of deception on participants, the potential advantages and disadvantages to those implementing it has not been explored. More specifically, there are unanswered questions about what skills can be gained or perceived to be gained by research assistants utilizing deception. The present study explored whether deception utilization and/or the presence of training influenced perceived skills gained by research assistants. Our data includes a sample of students majoring in Psychology at Georgia Southern University. The study was severely underpowered, so the results provide no evidence supporting the hypothesis. However, the question of how students who utilize deception are perceived is important for further research efforts in this domain.

INDEX WORDS: Deception, Undergraduate research experience, Skill development

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CHAPTER 1

INTRODUCTION

Deception is a complex behavior that can involve and serve a variety of purposes when it comes to research. Broadly defined in the context of academic research, deception can be described as misrepresenting information to participants. This misrepresentation of information can be as complex as the purpose of the study to something as simple as the title of the study. Though deception is used in psychological science, its usage can be controversial. The controversy in psychological science revolves around the potential deception has for coercion, exposure to psychological harm, and invasion of privacy that can come with the utilization of deception (Kimmel, 2011). Furthermore, misrepresentation of information to participants may potentially cause harm to not just the participants, but to the research assistants who utilize deception (Naufel et al., 2018).

However, the idea that the utilization of deception having potential advantages for research assistants using it has not been examined. For example, do research assistants who utilize deception in a research assistantship learn different skills than research assistants who do not utilize deception? If research assistants utilizing deception are perceived as having a more diverse or developed skillset than if they did not utilize deception, then studies involving deception can be a potential benefit for those individuals. These questions have not been thoroughly examined in the research; thus, a gap exists when considering perceived skills learned by research assistants who utilize deception. Because this gap exists in the research, it is critical to contribute any knowledge or findings in this area. As such, this study focuses on assessing what skills research assistants are perceived to have learned by utilizing deception in a research experience. If using deception is perceived to enhance or teach a more complete skillset, than these individuals can be more prepared for a variety of occupations. Our goal was to explore any potential differences in perceived skill gain by research assistants who utilized deception versus research assistants who did not utilize deception.

CHAPTER 2

LITERATURE REVIEW

The use of deception in research has been a long-debated topic for several decades. Generally, research on deception has concerned its benefits, methodology, controversy, and uses inside and outside the broad field of psychology. While the bulk of this research is typically concerned with discussing the potential benefits and drawbacks of deception on participants, the potential effects on the research assistants performing the deception has not been investigated. This study examined the potential effects of research assistants utilizing deception on the participants' perception of five major skill domains.

Deception in Research

The social psychologist Stanley Milgram and his research on obedience launched ethicality to the forefront of psychology's debated topics. In these studies, Milgram was curious about the power that authority figures had (McLeod, 2007). Milgram established an experiment where there were two participants, one being a learner (confederate) and a teacher who can shock the learner upon an error being made in each task. The main aim was to see how far the teacher (participant) would go in obeying an instruction if it involved harming another person. The results from Milgram's study suggest regular people are likely to follow the instructions given by an authority figure, even when doing harm (McLeod, 2007). Thus, this study involved high levels of deception, which is one of the reasons why it is discussed so often in psychology courses today.

Deception, broadly defined, concerns misrepresenting a research experiment to participants. This misrepresentation can come across in a variety of ways such as but not limited to, misrepresenting the title of the study, misrepresenting the study's methods, or misrepresenting the study's true purpose. But deception can take different forms in different methods. For instance, in naturalistic observation research, the true identity and purpose of the researcher may be concealed and thus, result in deception to the individuals being observed. In more controlled lab experiments, researchers may present false information and claim it to be true (Sell, 2008).

Kimmel (2011) provides more specific definitions of deception. For example, deception by omission, is when the researcher purposely withholds relevant information from the participant. A second form of deception Kimmel (2011) describes is deception by commission, which is when a researcher purposely misleads a participant about some aspect of an investigation.

Deception continues to be a component of research designs. A content analysis performed by Kimmel (2011) revealed the frequency of deception in leading social psychology journals. This content analysis revealed that deception was used within a substantial number of studies that examined human behavior in some way, ranging from 35% to 40% depending on which of the forms of deception was analyzed. Although this is a large minority of studies in social psychology utilizing deception, it is substantially lower from the peak of 70% dating back to the 1970's (Kimmel, 2011).

Ethical Discussion of Deception in Research

The use of deception in research has been debated in many fields because of how it may involve participants. For example, according to Sell (2008), because of instances of deception, participants are not able to provide consent that is completely informed. For example, deception may involve misrepresentation of a study, participants may not be able to provide this complete consent as they are not aware of what the study is truly about (Sell, 2008).

Researchers also argue that deception is an essential component of research, emphasizing that the potential advances in theory or society can result from studies which utilize deception (Sell, 2008). They also argue that had deception not been used, the results of the research can be misleading and possibly entirely invalid (Kimmel, 2011). For example, cheating behavior may involve enlisting a confederate, having the confederate cheat on a task in a study and asking their partner in the study to take the blame for them (Willard & Burger, 2016).

Similarly, research concerning false confessions must frequently use deception to obtain valid results and answers to their questions (Russano, 2005). Indeed, consider a study involving false memories. For example, one commonly used paradigm exposes participants to misinformation about a past memory (Loftus et al., 1978). This paradigm involves having participants first witness an event. Later, researchers

give participants misinformation about this event and are tested on their memory of the event details. At testing, participants will often include pieces of the misinformation that the experimenter had given them about the event in their memory of the original event (Nichols & Loftus, 2019). Thus, supplying misinformation to participants in initial stages can lead participants to include this misinformation in their telling of an event in later stages.

The use of deception has at least two important benefits. First, it creates a more realistic experimental setting which can increase the ecological validity of the experiment (Boynton et al., 2013). Second, it also allows for the completion of experiments that would otherwise be impossible without it. For instance, without deception, utilizing Russano's (2005) cheating paradigm would not be possible at all. Thus, with deception, researchers can investigate questions and areas that they would otherwise not have access to. In some cases, deception is also necessary to mitigate any role-playing or socially desirable behavior by participants.

Further corroborating commentary made by Kimmel (2011), Boynton et al. (2013) argue those in favor of deception believe that its potential benefits to participants, science, and society outweigh the noted costs. Participants for instance, have many of their rights reserved. As examples, research participants may withdraw from participating in the studies at any time and are not handcuffed to the researchers, setting, or experiment. For participants who find deceptive research distasteful, they can exercise their autonomy and withdraw their participation (Boynton et al., 2013). Additionally, participants are frequently told they have the ability to withdraw their participation or skip questions without penalty (Uz & Kmmelmeier, 2017). Uz and Kemmelmeier (2017) even suggest that research can incur consequences whether there is deception or not. In addition to all these points, Holmes (1973) suggests that a thoughtful, detailed, well-executed debriefing can effectively reduce the ill effects of a study that uses deception. Furthermore, Sell (2008) suggests that there are some research questions that cannot be answered without the use of deception. As mentioned previously, research questions regarding false confessions require the use of deception to evaluate people's natural responses. Should participants know a specific study was about false confessions, their responses would no longer be valid. This is because the deception usage reduces demand

characteristics. Without the use of deception, there would be no valid way to conduct that specific line of research.

Finally, others argue that some research questions would go uninvestigated without the use of deception. Without it, there would be multiple questions and areas of knowledge that would prove unattainable, inaccurate, and unanswered. As noted, false memory research is another notable example of a line of research that justifies the usage of deception. Examples of other research questions beyond the ones mentioned are seen in the specific fields of social, forensic, and criminal psychology.

Though deception is used in psychological science, its usage here is also controversial. The controversy in psychological science arose because of the associated potential for coercion, exposure to psychological harm, and invasion of privacy that can come with the utilization of deception (Kimmel, 2011). It is for these reasons that the APA guidelines restrict the usage of deception. Additionally, deception can create a distrusting relationship between the participants and researcher (Bok, 1992). A notorious example of this is the Tuskegee syphilis experiments of decades ago. It is because of these potential harmful effects and resulting distrust, which gave rise to the controversy of deception in psychological research (Boynton et al., 2013).

Although there are arguments for and against the use of deception in psychological research, the controversy takes a vastly different path when exiting the realm of psychology and entering the realm of more physical sciences like biology and medicine. One extremely heinous study that is taught across the United States today is the infamous Tuskegee Syphilis experiment. Briefly, the United States Public Health Service executed this study to see how syphilis, if left untreated, would progress in African Americans. The fundamental ethical problem of this experiment was the decision to mislead the participants and wider population. Far above this problem however, the infamy of the Tuskegee syphilis experiment was largely the result of racism (Smolin, 2012). Smolin (2012) explains this racism was because of the sense of entitlement in medicine, suggesting that physicians believed it was “open season” (p. 235) on any disadvantaged or vulnerable population they could achieve access to. Smolin (2012) continues, stating that it is much easier to exploit these powerless populations, under the guise of medicine and physician’s

entitlement. Adding to this controversy of this experiment, the Tuskegee study was extended and continued through various Presidential administrations (Smolin, 2012). This study and the consequential controversy are the reasons for the creation of the modern-day institutional review boards (IRB), the Belmont Report, and National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. It is important to identify such controversies and debates both inside and outside the psychological realm, as the usage of deception was not exclusive to psychological research and there were other notable controversies.

The Benefits of Deception in Research for Participants

One of the many points argued in supporting the utilization of deception in psychological research was because of the potential advancements and benefits it can provide for society (Sell, 2008). For example, these arguments are not just limited to psychology and whether deception should be used. Given that ethical procedures and having a code of ethics is crucial in accomplishing any aspect of human research, it makes sense to examine what the actual participants of research have to say about the usage of deception in psychological research.

What these participants think about deception in research is important to know to be able to answer if these same participants can benefit from the research. It has been argued that participants would find deception stressful, that deception would negatively affect their willingness to volunteer for future experiments, and deception would make them see psychology research in a negative light (Aitkenhead & Dordoy, 1985). If participants accept being deceived in psychological research, is deception unethical? A research study completed by Aitkenhead and Dordoy (1985) examines this very subject, as this answer requires using the scientific method to figure out an answer, instead of relying on individual judgments and opinions.

In this study, Aitkenhead and Dordoy (1985) manipulated two variables, having four conditions in total. Participants in this experiment either experienced high or low stress. Additionally, they were either deceived or not deceived, and the role they played in the study (active or passive) was also manipulated. The experimenters measured participants' reactions to this experiment. More specifically, the

experimenters were interested in exploring how deviations in experimental methodology can affect participants' reactions to an experiment. The results suggested that participants did not feel significantly more stressed or less considerately treated than did participants who were undeceived. Participants who were deceived also enjoyed the experiment just as much as participants who were not deceived. Another key point that is seen in the results of Aitkenhead and Dordoy's (1985) experiment is that the participants who were deceived did not think the deception was any less justified when compared to participants who were not deceived. This provides some evidence that participants do not perceive perception as harmful.

Similarly, another experiment showed that people who participate in deception experiments versus non-deception experiments in psychology are accepting of various forms of deception as well as report having enjoyed deception experiments significantly more and receive more educational benefit from them (Aguinis & Henle, 2001). Together, these studies shed a little bit of light on what the participants of deception studies in psychology think about the usage of deception.

The idea and boundaries of ethics comes into question when addressing these types of questions and ideas in psychological research. The American Psychological Association (APA) set forth a Code of Ethics in 1973, with amendments in 2010 and 2016 respectively outlining guidelines on how to perform research safely and ethically for those involved. One relevant principle outlined in this code of ethics is that psychologists should never attempt to deceive (Stark, 2010). For research though, the APA suggests that, the principal investigator must attempt to mitigate the effects, it must be justified, and potential benefits must outweigh the drawbacks (Stark, 2010). The APA adds that the use of deception should be minimal, should not result in alleviated stress, and be uncovered at the earliest opportunity in some form (such as debriefing).

Deception aside, Felzmann (2009) examines the relevancy of ethical issues when conducting research in a school setting. More specifically, Felzmann (2009) examines how these ethical issues potentially arise when working with children in a school setting. One of these potential issues concerns confidentiality. Confidentiality requires the researchers not divulge any personal information about the research participant without agreement from that research participant (Felzmann, 2009). Felzmann (2009)

continues, stating that for research involving children, there is a possibility that child protection legislation requires researchers to breach confidentiality because of mandatory reporting requirements for suspicions of child abuse. Beyond this potential breach of confidentiality, there is also a potential ethical issue of informed consent. When children are involved, there are multiple levels when it comes to obtaining informed consent. As highlighted by Felzmann (2009) in his experiment, one must obtain informed consent of the child, the parent or guardian and any other stakeholder. Clearly, there are many ethical issues and risks to consider when performing research in a school setting, when deception is not even considered.

What are the risks to research assistants that use deception?

One topic overlooked in all of this is the potential risks to the individuals (research assistants) putting this deception to use. Through examining the prior research thus far, it is clear that there is an abundance of protection and thought when it comes to protecting the participants of research but what about protecting the individuals who are conducting it? There seems to be a lack of focus on the research assistants specifically and lack of any protection for these individuals. Naufel and Beike (2013) propose a document dubbed the "Research Assistant's Bill of Rights," as a potential code of ethics, similar to the APA's code of ethics, serving as a set of guidelines governing how best to supervise research assistants. This is because according to Naufel and Beike (2013) research assistants can potentially be exposed to physical, social, and psychological risks when participating in research activities and data collection. For example, assume that there is a research study that involves observing how patients can handle stress. Because of the nature of this study, the research assistants are required to listen to these patients' various accounts of their pain and adversity. Having this sort of repeated exposure to these negative narratives from participants can have adverse effects on these research assistants (Baird & Kracen, 2006 as cited by Naufel & Beike, 2013). This would be an example of a psychological risk to research assistants.

Participants can also potentially be exposed to risk when utilizing deception in research (Naufel & Beike, 2013). For example, an experiment may require that deception be necessary to examine how ostracism is related to levels of aggression. The research assistant then, may be required to lie to the involved participants. Lying has been associated with several negative outcomes such as being more likely

to make negative statements, complaints, appear less friendly and pleasant than when compared to truth-tellers (DePaulo & Morris, 2004 as cited by Naufel & Beike, 2013). Adding to these articles, is a narrative from Oliansky (1991). Oliansky (1991) tells stories from his time as a research assistant that supports the idea that research assistants lying is a potential psychological risk to them. Looking back at his experience as a research assistant, Oliansky recalls the deception story he had to tell participants making both him and the participant uncomfortable. He continues, saying he remembers feeling shameful and guilty. This personal narrative from Oliansky offers a unique perspective when thinking about the potential risks to research assistants utilizing deception in their research. These articles merely scratch the surface on what risks research assistants may experience when completing research in general and when utilizing deception. However, the question remains if research assistant experience with deception can bring about benefits?

The Benefits of Research Experience

Psychology students often believe that research experience is beneficial to their goals. For instance, students evaluated research experience as an important component for admittance to graduate school (Sanders & Landrum, 2012). In another discipline, research also seems beneficial. Ommering et al. (2020) performed a study to attempt to promote positive perceptions of the research process for undergraduate medical students. Generally, students reported that performing research would most likely be because of personal benefit (Ommering et al., 2020). Additionally, students reported that they saw a research experience as a way of learning new academic skills (Ommering et al., 2020).

When applying for a research assistantship as an undergraduate, a supervisor, principal investigator, or professor may require the student or individual to possess certain skills. Depending on what the research experience requires, what the topics of study are, what materials and technology is used, the supervisor may require few to many skills in a research assistant. Huddleston et al. (2019) used faculty focus groups at a university in Texas, to form a list of nine core skills most frequently named during the focus groups: topic selection, search strategy, finding resources, differentiating source types, evaluating sources, synthesizing information, summarizing information, citing sources, reading, and understanding citations. In addition to these nine core skills, the faculty participants in the focus groups voiced other skills they desired in a

research assistant. Other skills included critical thinking, reading skills, writing skills, work ethic, and time management skills (Huddleston et al., 2019). A more specific finding from these focus groups was about which and how many of these skills were expected from research assistants. Of the 84 participants that responded to that specific question, the three skills a majority of the faculty expected were: summarizing information (80%), finding resources (67%), and search strategy (60%) (Huddleston et al., 2019). This number of expected skills increased upon graduation however, with faculty members expecting research assistants to possess eight of the nine core skills, a vast increase from the initial three (Huddleston et al., 2019).

Similarly, undergraduate research experience can help cultivate different skills in students. For instance, the best practices in mentoring undergraduate research include structuring research experiences in a way such that they provide a meaningful experience for research assistants (Boysen et al., 2020). One way in which these research experiences may be beneficial for research assistants is that participation in them can help develop more effective writing skills, engage in innovative thinking, and exhibit effective presentation skills (Boysen et al., 2020). Boysen et al. (2020) continue, saying that these research experiences can also help develop skills that are applicable in other areas, outside of psychology. Skills like problem solving and utilization of the scientific method are two that are crucial to several occupations like athletic trainers and zoologist for example (Boysen et al., 2020). In sum, it is expected that research experience, or serving as a research assistant, should develop skills.

By addressing what skills psychology majors alone are expected to develop, we can compare that to what skills research assistants are expected to develop. A document developed by Naufel et al. (2018) dubbed the "The Skillful Psychology Student," lists 17 major skills that all psychology majors should have upon the time of graduation. Some of these skills include oral and written communication, creativity, management, and adaptability (Naufel et al., 2018). Some of these skills that psychology majors should gain correspond to the skills desired by psychology faculty from the prior focus group study completed by Huddleston et al., (2019). A major point lacking from this study aside from the nine core skills is this idea of goodness of fit. This goodness of fit concept describes how well the actual individual meshes with the

research environment, the material/study, and the supervisor and other research assistants if there are any. Developing the skills and this idea of goodness of fit would not only be useful in the research process but also for obtaining employment as several of these skills are desired by employers (Kruger & Zechmeister, 2001).

Being involved in a research experience as an undergraduate can help develop these skills. In agreement with this point, is a study completed by Pawlow and Meinz (2017). Pawlow and Meinz (2017) examined whether the skills developed from psychology majors participating in research experience differ from the skills obtained by psychology majors not participating in a research experience. Results from this study illustrated that research assistants had significantly higher career and core knowledge as well as higher critical thinking and writing skills (Pawlow & Meinz, 2017), with the latter two reflecting skills that both Boysen et al. (2020) and Naufel et al. (2019) state students should possess. It is also important to note that these significant increases between these two groups were seen for psychology students who participated in a research experience for at least one semester. Although positive, the authors suggest that the results should be taken with a grain of salt because of the non-experimental nature of the study (Pawlow & Meinz, 2017). Even though a causal inference could not be made in this specific study, it does introduce important findings to help establish causal inference between these variables in the future. Thus, an undergraduate research experience has the potential to help undergraduate psychology students attain desired skills. How does deception play a role in this though?

Specifically, if a research assistant takes part in a research experience that utilizes deception, then to what extent would that deception cultivate different skills compared to research experience that does not involve deception?

Research Assistants and Use of Deception – Do Benefits Outweigh Risks?

Considering the usage of deception by research assistants, the idea about what skills are necessary to execute the deception comes into question. Furthermore, these skills might vary from study to study depending on the exact form of deception. For example, if a study requires the enlisting of a confederate by the research assistant, it is important that the research assistant be able to communicate effectively in the

proper channels. This alludes back to the *Skillful Psychology Student's* "Oral Communication" skill (Naufel et al., 2018). More importantly, for studies requiring deception, it is imperative that the research assistant stop the study should participants begin experiencing common signs of stress. This situation involves the "Judgement and Decision Making" skill from the *Skillful Psychology Student list*, as the research assistant must use their judgment and knowledge of common signs of stress to make the decision to end the study and proceed with the proper stress de-escalation activities (Naufel et al., 2018). With these examples in mind, each of the major skills in the list can be necessary in some way for research assistants who utilize deception in their experiments.

Statement of Problem

It is known that research assistants must possess at least some specific skills to perform undergraduate research. The research in this area suggests that the skills needed vary depending on the nature of the specific research experiment and what the supervisor desires but overall, supervisors want research assistants to be able to effectively find information, synthesize it, and understand it (Huddleston et al., 2019). The research also states that being able to think critically, read and write effectively as well as manage time effectively, are also useful skills for performing research (Huddleston et al., 2019). It is expected that those students who performed undergraduate research possess more skills than their counterparts who otherwise did not take part in a research experience, but it is unknown if utilizing deception in a research experience can teach additional skills or even enhance skills. Therefore, a gap exists in this area of research about whether the use of deception in research can play a unique role in developing skills in undergraduate research assistants. Although there has been research on the impact of undergraduate research on the development of applied skill sets in undergraduate psychology students, there is no research into what it is about these undergraduate research experiences that develop these skills (Vespia, 2020). It is possible that deception can build on these skills because of the nature or focus of some deception experiments and their different methodologies. Having to be able to enlist a confederate, play as an actor, or go along with a short cover story are just a few examples how the utilization of deception can build on these skills. The present research aims to fill this gap by exploring perception of the skills a research

assistant who utilizes deception possesses versus perception of the skills of a research assistant who did not utilize deception in their research.

Additionally, research concerning how students perceive research assistants, and the research process is extremely limited. There is evidence that students value research experience for applying to graduate school (Sanders & Landrum, 2012), and that medical students view it as beneficial (Ommering et al., 2020). This study therefore will also fill this gap by not only investigating how students view the potential benefits of deception research, but also by investigating how documented training plays a role in the perception of how students develop skills.

I predict that participants will perceive individuals who utilized deception in a research experience as having more skills on average than research assistants who did not utilize deception in a research experience. That is, for the two deception conditions, I predict higher means across all five skill domains: social, cognitive, communicative, technological, and personal skill domains than the non-deception conditions. This pattern will reflect a main effect of deception on perceived skills. I also predict a main effect of indication of training of the research assistant because I think the saliency and description of the variable will sufficiently draw participant's attention. Because specific skills and training activities are named in the training consent forms, this allows the research assistant to identify these activities more readily (Naufel, et al., 2013). Furthermore, Russano's cheating paradigm that involves deception requires the incorporation of several different skills to properly execute the paradigm (2005). Skills and techniques such as oral communication via interrogation, technological skill, adaptability, are just a few of the skills necessary to execute this paradigm. In addition to this study, the study on student perception about research experience involvement by Ommering et al. (2020) lends some support to these hypotheses as well. Because students reported that they saw a research experience as a way to gain new skills, I expect that this explicit statement of training and responsibilities will have a significant effect on participant perception of skills. A significant interaction between utilization of deception and training will be explored post-hoc.

CHAPTER 3

METHOD

Participants

After running a power analysis in G*Power, to reach 80% power with an effect size of 0.25, an alpha level of 0.05, and four groups, the necessary sample size across the four conditions, was 128 participants. That was the target of our study. However, due to time limitations for the thesis proposal, the committee approved an a priori stop date of February 26, 2021. In other words, I stopped the study at this time to analyze the data regardless of the number of participants I had.

Students at Georgia Southern University were recruited to participate in this study using the university's research experiment participant sign-up portal, SONA. The students received completion credit for their study. No identifying information were collected from participants.

Fifty-five participants completed the study; however, after data cleaning, the usable sample consisted of 37 participants (exclusion criteria outlined in the data cleaning section). The sample consisted of 28 women and 7 men. Table 1 displays the descriptive statistics of the sample's reported gender. The mean age of participants was 19.64 years (*SD* =2 .04). Table 2 displays the descriptive statistics of the sample's reported race and ethnicity. All 37 participants were enrolled in Introductory Psychology (PSYC 1101) and reported amount of Psychology courses taken is displayed in Table 3. The reported major of participants in the sample was very diverse and is displayed in Table 4.

Table 1*: Gender of participants*

Gender			
	Male	7	18.9%
	Female	28	75.7%
	Non-binary	1	2.7%
	Transgender	1	2.7%

Note: This table represents the reported gender demographics of the sample with the number and percent proportion of each subset in the data.

Table 2*: Race and ethnicity of participants*

Race/Ethnicity			
	African American or Black	7	18.9%
	Asian or Asian American	2	5.4%
	Latino/Latina	1	2.7%
	White or Caucasian	24	64.9%
	Multiracial	3	8.1%

Note: This table represents the racial demographics of the sample with the number and percent proportion of each subset in the data.

Table 3*: Number of Psychology Courses Taken*

Courses Taken			
	1 Course	32	86.5%
	2 Courses	3	8.1%
	3 Courses	1	2.7%
	5 Courses	1	2.7%

Note: This table represents the number of reported Psychology courses taken of the sample with the number and percent proportion of each subset in the data.

Table 4*: Major of Participants*

Race/Ethnicity			
	Biology	4	10.8%
	Business	2	5.4%
	Criminal Justice	4	10.8%
	Communication Studies	1	2.7%
	Computer Science	1	2.7%
	Elementary Education	3	8.1%
	English	1	2.7%
	Exercise Science	4	10.8%
	Graphic Design	1	2.7%
	Journalism	1	2.7%
	Mechanical Engineering	1	2.7%
	Nursing	6	16.2%
	Philosophy	1	2.7%
	Psychology	6	16.2%
	Sports Management	1	2.7%

Note: This table represents the reported major of the sample with the number and percent proportion of each subset in the data.

Design and Materials

The study was a 2 (Deception: Used or Not used) x 2 (Training: Present or Absent) factorial design. Specifically, we embedded consent forms adapted from Naufel and Le (2017) that contained or omitted pieces of information about a study to manipulate these two independent variables. Qualtrics was programmed to randomly assign participants to one of the four conditions.

In order to manipulate if research assistants used deception or not, informed consent forms from Naufel and Le (2017) were adapted to describe research assistants engaging in a memory task in which false memories were implanted. The deception consent forms included information indicating that research assistants will be actively deceiving participants by stating that false memories will be implanted with the use of deception. The no deception consent forms omitted this information and instead described that false memories will be implanted without the use of deception.

Training, too, could also affect the extent that people viewed the researcher as skilled. Training was manipulated through the inclusion or exclusion of a statement in thew consent form indicating that research assistants were trained by their supervisor. In terms of the question, this variable attempted to assess whether the inclusion of information that research assistants were trained and taught how to accurately perform the necessary procedures of the research experience affected perception.

Each participant read a research assistant informed consent form adapted from Naufel and Le (2017). These informed consent forms, as outlined by Naufel and Le (2017), described the general purpose of a study, the specific procedures required to perform that study, as well as overall and specific responsibilities of the research assistant. Thus, the following conditions emerged:

Deception with Training

This consent form described deception being utilized in the research experiment. More specifically, the consent form indicated that research assistants will be required to use deceptive techniques to elicit false memories from participants. It explicitly mentioned that research assistants will be trained thoroughly on several activities (see Appendix C). It should also

be noted that this consent form was a confound in the experiment as it differed from the rest of the consent forms by including the setup scenario, “Imagine you are an employer…”, once, while the other consent forms included this information twice. This difference was an error, committed by mistake.

Deception without Training

This consent form described deception being utilized in the research experiment. It also indicated that research assistants were required to use deceptive techniques to elicit false memories from participants. However, it omitted an explicit statement of research assistants being trained on several activities (see Appendix C).

No Deception with Training

This consent form described a study interested in measuring false memories without the use of deception. It explicitly mentioned that research assistants will be trained thoroughly on several activities (see Appendix C).

No Deception without Training

This consent form also described a study interested in measuring false memories without the use of deception. It also omitted an explicit statement of the research assistants being trained on several activities (see Appendix C).

Measures

Manipulation Checks

Manipulation checks for the consent forms were included in the Qualtrics survey to determine whether participants read and comprehended the consent forms. The specific manipulation check items included in the Qualtrics survey were as follows: “Think about the informed consent that you read. Did the research assistant use deception (lie to the participant) in their research study” and “Think about the informed consent that you read. Did the research assistant, in the supplemental consent form you read, have

training in their research study?" Response options for both manipulation check questions were "Yes" and "No". Participants had to answer both manipulation check items at the end of survey correctly to be included for data analysis.

Measures of Skill

A measure adapted from Naufel et al. (2018), *The Skillful Psychology Student,* was used for the study (unpublished measure). The measure includes all 17 skills from the Skillful Psychology Student. Sample items are listed in Appendix B. Skills were grouped according to the domains outlined by Naufel et al. (2018), which were Cognitive (analytical thinking, critical thinking, creativity, information management, and judgment and decision making), Communication (oral communication and written communication), Personal (adaptability, integrity, and self-regulation), Social (collaboration, inclusivity, leadership, management, and service orientation), and Technological (as flexibility/adaptability to new systems and familiarity with hardware and software). Each measure contained the definition as outlined by Naufel et al. (2018). Participants indicated on a scale of "None at all" to "A great deal" how much the RA acquired the skill.

Because this is a new measure, we established internal reliability by calculating inter-item reliability using Cronbach's alpha. We made the a priori decision that if Cronbach's alpha was acceptable (.70), then each of the items from the overall domain would be summed into an overall score. Otherwise, we would analyze the items separately in a different analysis. Cronbach's alpha for the skill domains were ran across all four cells and were .80 for Cognitive, .40 for Communication, .70 for Personal, .87 for Social, and .76 for Technological.

Exploratory Engagement Questions

After the proposal, we included some engagement questions exploring the extent that participants were engaged in the study. Three engagement questions were included total. One of these engagement questions asked the participant how much they would like to do the tasks the research assistant was assigned to do. Another engagement question asked the participant that based on the informed consent form, how much do you think the research assistant learned from this experience. These questions were

intended to help the participant think about the informed consent that they just read and they would be available for exploratory analyses.

Demographic Questions

Six demographic related questions were located at the end of our survey. First, we informed participants that their responses would never be linked with their identity and any questions they do not feel comfortable answering may be left blank with no penalty. One of these questions asked about the participant's gender. Another question asked about the participant's age. The rest of the demographic questions asked participants about their racial/ethnic identity, major in school, if they were currently enrolled in Introductory Psychology (PSYC 1101), and how many total psychology courses they have taken. No identifying information nor names of participants were collected at any time.

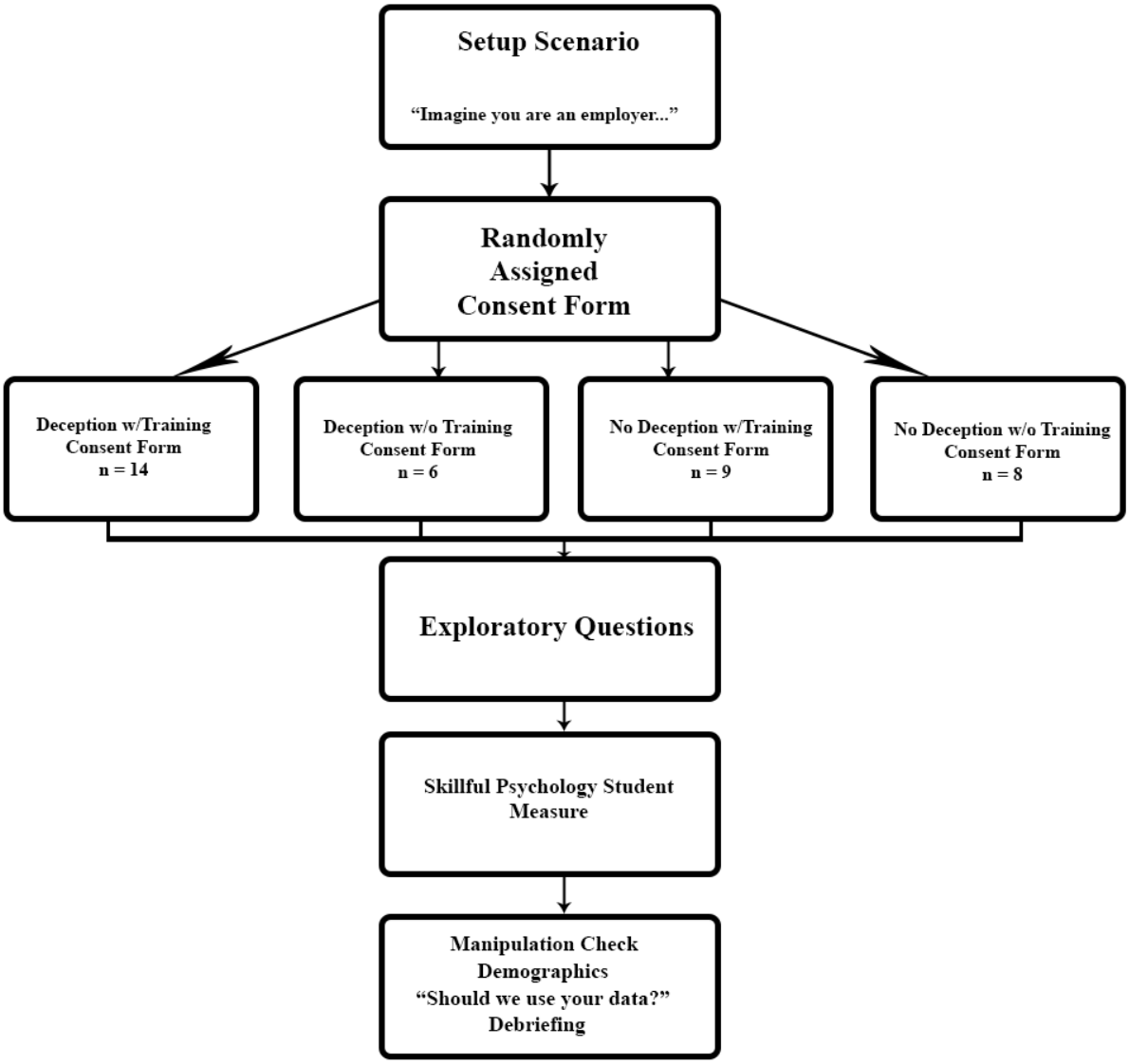
Procedure

Each session of this study consisted of a participant who signed up to take the survey via the Georgia Southern University SONA portal. The description of the study explained that the survey would only take less than 50 minutes and that it can be completed via a desktop computer, tablet, or personal cell phone. Prior to beginning the study, participants were shown a virtual consent form, and should they consent to the study, the study begun. After consenting to the study, participants read a statement that asked the participant to imagine themselves as a potential employer (see Appendix B). It stated that a candidate for a job submitted a consent form from an experiment they helped execute as part of their application to the job, to demonstrate their skills and training. After this cover story, the participant was presented with a Research Assistant consent form to read on Qualtrics. This consent form they received was based on which specific condition of the experiment they were randomly assigned to by Qualtrics.

After reading the consent form, participants completed three exploratory engagement questions that introduced the dependent variable (see Appendix D). Following these exploratory engagement questions, the skills from the *Skillful Psychology Student*, were presented. The *Skillful Psychology Student* Qualtrics survey items followed. Each of the 17 *Skillful Psychology Student* skills had its own section in the Qualtrics survey that falls into five domains (Cognitive, Communication, Personal, Social, and Technological Skills).

The participant was asked to read each skill, along with its definition, and then rate whether the research assistant in the consent form obtained these skills. The rating scale for each skill ranges from “Not at all” to “A great deal”. Demographic questions were then presented to the participant. After answering these demographic questions, participants were asked if their data should be used for data analysis. Finally, each participant had a virtual debriefing, explaining to them the purpose of the study as well as all other relevant information. Refer to Figure 1 for a representation of the study flow.

Figure 1: *Representation of Study Flow*



Note: This is a representation of the overall research procedure. First, participants either provide or do not provide consent to the study. Then, they are randomly assigned one of four consent forms to read and answer questions about. Participants are asked basic demographic questions at the end of the study and debriefed.

CHAPTER 4

RESULTS

Descriptive Statistics and Data Cleaning

Data obtained through Qualtrics was exported to SPSS for analysis. Participants who had more than five percent incomplete responses were excluded from the analysis which is the most common means of dealing with missing data (Kang, 2013). One "Catcher question" was included in the measure to make sure participants were paying attention and reading the questions. Participants who did not answer the "catcher" question correctly were also excluded from data analysis. In addition to this catcher question, another question at the end of the study asked participants if we should use their data for analysis because this has shown to be an accurate indicator for selecting data for analysis. Participants who answered "no" to if their data should be used for data collection, were also excluded from data analysis. Manipulation check survey items were located at the end of the survey. Participants must have completed both manipulation check items at the end of the survey accurately to be included for data analysis.

Data cleaning began on March 2, 2021. There were a total number of 53 participants who consented and completed the survey during the Spring 2021 semester, prior to the stop date. Data from eight participants were removed due to answering the "Please answer 'A moderate amount'" attention check question incorrectly (see Appendix E). Eight participants had more than five percent incomplete responses on the survey. For usable participant data, participants answered every item for each respective domain and did not skip any questions (see Table 3). In sum, 16 participants were excluded from data analyses. Thus, 37 participants were included in the data analysis. Fourteen of these were in the deception with training condition (1 removed), 6 were in the deception with no training condition (3 removed), 9 were in the no deception with training

condition (4 removed), and finally, 8 were in the no deception with no training condition (3 removed). To provide an overall sense of how participants responded on each item, Grand means were provided in Table 4. The primary results are discussed below.

Table 5: *Sample size for each skill according to domain*

		Condition				
Domain	***Skill***	Deception w/Training	Deception w/No Training	No Deception w/Training	No Deception w/No Training	Total
		n	n	n	n	n
	Analytical Thinking	14	6	9	8	37
	Critical Thinking	14	6	9	8	37
Cognitive	Creativity	14	6	9	8	37
	Information Management	14	6	9	8	37
	Judgment & Decision Making	14	6	9	8	37
Communication	Oral Communication	14	6	9	8	37
	Written Communication	14	6	9	8	37
Personality	Adaptability	14	6	9	8	37
	Integrity	14	6	9	8	37
	Collaboration	14	6	9	8	37
	Inclusivity	14	6	9	8	37
Social	Leadership	14	6	9	8	37
	Management	14	6	9	8	37
	Service Orientation	14	6	9	8	37
Technological	Flexibility	14	6	9	8	37
	Familiarity	14	6	9	8	37

Note. This table provides a summary of the number of participants who completed each item for each condition in the study. These participants' data were used in analysis.

Table 6: *Grand Mean (SE) for each Skill*

Domain	***Skill***	***Mean***	***SE***
Cognitive	Analytical Thinking	3.89	.18
	Critical Thinking	3.38	.19
	Creativity	3.30	.22
	Information Management	3.70	.18
	Judgment & Decision Making	3.59	.21
Communication	Oral Communication	3.54	.21
	Written Communication	3.32	.20
Personality	Adaptability	3.62	.19
	Integrity	3.27	.22
	Self-Regulation	3.38	.20
Social	Collaboration	3.16	.21
	Inclusivity	2.95	.21
	Leadership	3.16	.21
	Management	3.27	.19
	Service Orientation	3.24	.214
Technological	Flexibility	3.08	.25
	Familiarity w/Hardware	2.78	.24

Note: The scale for each item ranged from 1-5.

Manipulation checks: "Think about the informed consent you just read…"

For participants to have cleared the manipulation check, they must have answered both manipulation check questions at the end of the study correctly. Seven participants did not accurately complete manipulation check items from the deception with training condition, three participants did not accurately complete manipulation check items from the deception with no training condition, four participants did not accurately complete manipulation check items from the no deception with training condition, and seven participants did not accurately complete manipulation check items from the no deception with no training condition. This data cleaning would have left only one participant in the no deception with no training condition. Thus, no participants were removed due to answering manipulation check questions incorrectly so that analyses could be done. As a result, the planned primary analyses are more exploratory in nature. Table 5 provides a sense of how many participants from each condition would have been removed due to inaccurate completion of the manipulation check questions.

Table 7: *Participants Removed due to Manipulation Check Inaccuracies*

Condition	Participants
Deception w/Training	7
Deception w/o Training	3
No Deception w/Training	4
No Deception w/o Training	7

Primary Analyses

The present study explored whether deception utilization and or presence of training influenced perceived skills gained by research assistants. To explore this relationship, a MANOVA was conducted on five main skill domains of psychology students according to the Skillful Psychology Student (Naufel et al., 2018).

Internal reliability of each of the five skill domains was investigated using Cronbach's alpha before conducting the MANOVA. Results indicated that the alpha for the total scale was equal to .92. Each of the five domains has sufficient reliability to be included in subsequent analyses except for the communication domain. This domain did not satisfy our acceptable alpha level of .7 to be combined with the other domains, so this domain was dropped from the MANOVA. This also suggests that the elimination of the communication domain would increase the overall reliability of the scale even higher. Individual Cronbach's alpha levels for the cognitive, personal, social, and technological domains are in order as follows: .80, .70, .87, and .75.

A 2 x 2 between-subjects full factorial MANOVA was used to analyze the results. Results revealed no main effect of deception as participants randomly assigned to the deception groups did not score significantly higher than the no deception groups, regardless of training ($F(4,30) = 1.12$, $p = .37$, *partial* $\eta^2 = .130$). The results also suggest no main effect of training as the scores of participants in the training groups were not significantly different, regardless of deception ($F(4,30) = 1.04$, $p = .40$, *partial* $\eta^2 = .122$). Furthermore, there was no significant interaction between deception and training ($F(4,30) = .54$, $p = .71$, *partial* $\eta^2 = .068$).

As per an a priori decision, a separate 2 x 2 between-subjects MANOVA was used to analyze any potential relationship between the independent variables on the individual oral and written communication skill items. The means for oral ($M = 3.56$, $SEM = .22$) and written communication ($M = 3.34$, $SEM = .21$) were very similar. As such, results indicate no main effect

of deception on communication ($F(2,32) = .139$, $p = .87$, *partial* $\eta^2 = .009$). Results indicate no main of training on communication either ($F(2,32) = .231$, $p = .80$, *partial* $\eta^2 = .014$). Additionally, there was no significant interaction between deception and training on communication ($F(2,32) = 1.13$, $p = .34$, *partial* $\eta^2 = .066$).

Exploratory Analyses

An exploratory analysis was performed using the two manipulation check questions at the end of the survey as independent variables. Answers for both manipulation check items were either "Yes" coded as one, or "No" coded as two. A between subjects MANOVA was used to analyze the potential effect of these manipulation check questions on the four skill domains. Results from this exploratory analysis indicate no significant main effect of the manipulation check question, "Think about the informed consent that you read. Did the research assistant use deception (lie to the participant) in their research study" on any of the psychology skill domains ($F(4,30) = .603$, $p = .66$, *partial* $\eta^2 = .074$). The results also suggest no main effect of the second manipulation check question, "Think about the informed consent that you read. Did the research assistant, in the supplemental consent form you read, have training in their research study" ($F(4,30) = 1.75$, $p = .40$, *partial* $\eta^2 = .122$). Furthermore, there was no significant interaction between the first and second manipulation check questions ($F(4,30) = .785$, $p = .54$, *partial* $\eta^2 = .10$).

An additional exploratory analysis was performed to see if participants in the deception and no deception conditions answered the question, "Will the research assistant be using deception (or lying to the participant)? A Chi-square was conducted. Results showed that participants 17 of 20 participants in the deception condition were more to select "Yes" to this question, and 5 of 12 participants in the no deception condition were more likely to select "No," $x^2(1) = 11.78$, $p < .001$.

CHAPTER 5

DISCUSSION

Research on deception and its utilization has had a long-lasting presence in psychology and other academic fields. For one side of the argument, using deception is something that has no place in research and questions that cannot be answered without it, are not worth answering at all. For the other side of the argument, its potential drawbacks and cautions are worth it and safe if executed properly, and the answers to some questions are well worth these potential risks. This study investigated the extent that students recognized the potential for developing skills when researchers used deception.

The results from the present study suggest that no conclusion can be made from the current data due to the limited sample size. Exploratory analyses do not provide support for any specific conclusions either. However, the study has several limitations that can be remedied for the future. For example, limitations include sample size, engagement, and confusion of the wording. Another potential reason the results were inconclusive involved individuals who did not accurately complete the two manipulation check items at the end of the survey, suggesting manipulation itself should be examined.

The first limitation of the study involves sample size. According to the power analysis we ran, the study needed a sample size of roughly 128 participants to reach 80% power with an effect size of 0.25, alpha level of 0.05 and four independent groups. To meet a total of 128 usable participants, it was the goal to have at least 32 participants per group, but this goal was not realized. Generally speaking, because power increases as sample size increases, it allows researchers to correctly reject the null hypothesis when this is the correct result (Cohen, 1988). The sample size of 37 participants was only a fraction of the 128-participant sample size target according to our

power analysis. To keep contributing to this specific research domain, future research surrounding this question should aim to have a larger sample size with very similar, if not equal sample sizes across conditions to be more able to detect smaller effects. A future line of research should aim to collect data for a longer period to remedy this limitation.

Additionally, participants did not seem engaged in the study. Including participants who accurately completed the two manipulation check items at the end of the survey, only about 30% of participants met our criteria for inclusion for data analysis. More specifically, 37 of 53 participants were removed, leaving only a usable sample of 16 participants. Not excluding participants who answered the two manipulation check questions inaccurately, we were left with a usable sample of 37 participants after removing 16 participants. Of these 16 participants who were removed, eight participants were removed due to answering the "Please answer 'A moderate amount'" attention check question incorrectly and eight participants had more than five percent incomplete responses on the survey. Eight participants said we should not use their data, but these participants were already removed with the aforementioned filters. Together, this is a large subset of data that were excluded from the analysis.

There are several potential reasons that may have led to less engaged participants. For one, the survey was on the longer side, lasting about 41 minutes on average for participants whose data was retained for analysis, per Qualtrics estimated variable duration data report. This average amount of time to complete a survey is more than double the length of what participants think a survey in general should last (Revilla & Höhne, 2020). According to Revilla and Höhne, participants believe surveys should last anywhere from 10 to 15 minutes (2020). Another important finding of theirs was that participants also believe that the maximum amount of time should be around 20 to 28 minutes. The time it took for participants, on average, to complete our survey far

exceeded the maximum amount as suggested so participants may have felt burned out. Future research may benefit by cutting down the length of time it would take to complete the survey by examining fewer skill domains.

In the exploratory analyses, a total of 21 participants answered the manipulation check incorrectly. These manipulation check questions were placed at the end of the survey, so it is possible these participants forgot some details about the consent form they read. Hauser et al. (2018) argues that manipulation checks should not be placed between the manipulation and measure of the dependent variable because they may influence how participants respond or think. Hauser et al. (2018) also suggests that the manipulation check may only be able to tell us what the participant was thinking only just before the check and not at the point of the completion of the measure. Therefore, further consideration should be given into including manipulation checks into a study and how these manipulation checks can affect conclusions (Hauser et al., 2018).

Additionally, participants could have also been confused by the wording of deception in the question. First, the title of the study on the recruitment website, read "A Research Assistant's Perceived Skillset when Utilizing Deception". This may have created the belief that deception was being used in the studies. Similarly, the manipulation prompts discuss false memories. Implanting false memories may "feel" like deception although it is not. For instance, in the exploratory analyses, 85.00% of participants correctly noted when a study involved deception, but 29.41% (5 out of 17) participants stated that the study involved deception when it did not. Future research may benefit by using a different conceptualization of deception instead of implanting false memories. For example, instead of reading a consent form, participants may watch a short video that shows research assistants being trained by their supervisors then actively using their training

to deceive (lie to) participants in a study. Other videos would omit training and deception in the short videos as required by each condition. This skit may better convey the manipulation.

Another limitation of this study involves the scarcity of the literature concerning the specific relationship between utilization of deception and perceived skill gain. Studies exploring the relationship between skills gained by a research assistant as part of a research experience utilizing deception are limited in number. Thus, it is important for research examining this relationship to continue to enable the integration of more findings and more diverse samples. Its continuation will provide greater context and knowledge about if deception can be beneficial for those using it. Perhaps by addressing some of this study's limitations, research in this area can be improved upon in the future.

Another possibility for future research is the distribution of the survey to employers and their recruiters rather than university students. Business recruiters, hiring managers, or other relevant business representatives can help make the sample more diverse and relevant as these people make their living on assessing skills, conducting interviews, and hiring individuals into their company. It is also important to mention that our set-up scenario included in the survey for participants to read before being randomly assigned a consent form to read was listed again on each consent form except for one, the deception with training consent form. Consequently, future manipulations like this should make sure that each consent form is exactly alike. It is also worth noting that effect sizes from the primary analyses were medium to large in size so it is possible that with sufficient power, a statistically significant effect may have been detected.

In sum, the present research topic is a starting point underlining the potential relationship between research assistants and I aim to continue research in this domain.

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APPENDIX A

Informed Consent Form

Title of Research Study: A Research Assistant's Perceived Skillset when Utilizing Deception

Ahmad Sarris
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Karen Naufel, Ph.D.,
Phone (912) 478-5446
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Dear participants,
You are invited to take part in a research study conducted at Georgia Southern University. Before you decide to participate in this study, please read this form and contact one of the investigators if you do not understand the material. Our contact information is listed above. The purpose of this study is to examine what skills are gained via participation in a research assistant position on college campuses.
Here is what you will do in this study: If you choose to participate in this study, you will go on to complete a survey in which you will be asked to read a scenario about an individual who applies for a job and provides documentation of their experience as a research assistant. You will then be asked questions about the individual in the scenario. This study has no risks beyond what is experienced in daily life. By participating in this study you will benefit by having had the educational opportunity of involvement in research. Additionally, it is hoped that this research will identify situational and individual differences that influences people's responses. Should you choose to participate, you may gain some insight into your attitudes and skills. You will also receive 1 credit that counts towards your course research requirement or extra credit. Please review the policy set forth by your instructor. Your instructor also has alternative activities that do not involve participating in research. Your participation is anonymous. We neither ask for nor record your name. Additionally, your information will be combined with the information collected from other participants. We are not interested in your individual responses; rather, we are interested in the pattern of responses across participants. The data we obtain however may be placed online in a public repository (Open Science Framework) and can be viewed by anyone. In order to participate in this study, you must be 18 years of age or older.
You can withdraw from the study or skip questions at any time. Even if you skip questions or withdraw, you will still receive credit.

This study has been approved by Georgia Southern University's Institutional Review Board (#H21266). Research at Georgia Southern University that involves human participants is carried out under the oversight of an Institutional Review Board. Questions or problems regarding these activities should be addressed to the Institutional Review Board, Georgia Southern University, Suite 3000, Veazey Hall, Statesboro, GA 30460, 912-478-5465.

Consent: I understand that participation is voluntary and that I may withdraw my consent at any time without penalty (i.e., would still receive credit). By selecting “I consent to the study”, you consent and therefore will continue with the study. If you do not consent to the study, select “I do NOT consent.”

APPENDIX B

SET-UP SCENARIO

Imagine that you are a hiring manager for a company that specializes in marketing for small businesses. You are evaluating an applicant as an potential employee for your company.

This applicant states that they served as a Research Assistant for a psychology experiment. The applicant included a consent form that documented what they did and the evidence of the skills they obtained as a Research Assistant. The consent form that follows was a supplemental document that provides more information about the research experiment they helped accomplish.

APPENDIX C

CONDITIONS 1-4 (CONSENT FORM IVs)

Research Assistant Informed Consent Form [Condition 1: Deception - Training]

- **Purpose:** The purpose of this study is to assess what factors influence an individual's susceptibility to false memories.

- **Overview:** This study will examine the extent that false memories are implanted **with the use of deception**. For this study, you as the Research Assistant will use the Deese-Roediger-McDermott (DRM) paradigm to measure false memories. This paradigm includes reading a list of words related to a concept (e.g., bed, rest, awake) and then measuring what words participants actually recall. Research assistants will be actively using deceptive techniques (such as lying) to elicit these false memories from participants. Additionally, you will be interviewing the participant.

- **Procedures to be trained on:** If research assistants consent, they will receive a total of 10 hours of training. They will be thoroughly trained on the following activities:
    - Informed consent - reviewing rights for participants
    - Performing proper behavioral procedures with participants
    - Identifying signs of stress in participants
    - Debriefing participants at the end of the study
    - Organizing the data from each session
    - Coding participant behavior from each session

- **Risk:** Many studies such as this can involve these related potential risks. The research assistant should discuss the potential risks of being associated with this research with the supervisor.

- **Benefits**: Research assistants will learn how to run an experiment ethically. The research assistant should discuss the potential benefits and consequences of being associated with this research with the supervisor.

- **Reporting Adverse Reactions**: Research assistants can report adverse reactions to the Principal Investigator or the department chair (dept.chair@school.edu). It is important to report adverse reactions. That way, the investigators can take steps to report it.

Research Assistant Signature Date

Supervisor Signature Date

Imagine that you are a hiring manager for a company that specializes in marketing for small businesses. You are evaluating an applicant as an potential employee for your company.

This applicant states that they served as a Research Assistant for a psychology experiment. The applicant included a consent form that documented what they did and the evidence of the skills they obtained as a Research Assistant. The consent form that follows was a supplemental document that provides more information about the research experiment they helped accomplish.

Research Assistant Informed Consent Form [Condition 2: Deception – No Training]

- **Purpose:** The purpose of this study is to assess what factors influence an individual's susceptibility to false memories.

- **Overview:** This study will examine the extent that false memories are implanted **with the use of deception**. For this study, you as the Research Assistant will use the Deese-Roediger-McDermott (DRM) paradigm to measure false memories. This paradigm includes reading a list of words related to a concept (e.g., bed, rest, awake) and then measuring what words participants actually recall. Research assistants will be actively using deceptive techniques (such as lying) to elicit these false memories from participants. Additionally, you will be interviewing the participant.

- **Risk:** Many studies such as this can involve these related potential risks. The RA should discuss the potential risks of being associated with this research with the supervisor.

- **Benefits**: RAs will learn how to run an experiment ethically. The RA should discuss the potential benefits and consequences of being associated with this research with the supervisor.

- **Reporting Adverse Reactions**: RAs can report adverse reactions to the Principal Investigator or the department chair (dept.chair@school.edu). It is important to report adverse reactions. That way, the investigators can take steps to report it.

Research Assistant Signature Date

Supervisor Signature Date

Imagine that you are a hiring manager for a company that specializes in marketing for small businesses. You are evaluating an applicant as an potential employee for your company.

This applicant states that they served as a Research Assistant for a psychology experiment. The applicant included a consent form that documented what they did and the evidence of the skills they obtained as a Research Assistant. The consent form that follows was a supplemental document that provides more information about the research experiment they helped accomplish.

Research Assistant Informed Consent [Condition 3: No Deception – Training]

- **Purpose:** The purpose of this study is to assess what factors influence an individual's susceptibility to false memories.

- **Overview:** This study will examine the extent that false memories are implanted **without the use of deception**. For this study, you as the Research Assistant will use the Deese-Roediger-McDermott (DRM) paradigm to measure false memories. This paradigm includes reading a list of words related to a concept (e.g., bed, rest, awake) and then measuring what words participants actually recall. Additionally, you will be interviewing the participant, but the interview does not involve deception (or lying to the participant).

- **Procedures to be trained on:** If research assistants consent, they will receive a total of 10 hours of training. They will be thoroughly be trained on the following activities:
    - Informed consent - reviewing rights for participants
    - Performing proper behavioral procedures with participants
    - Identifying signs of stress in participants
    - Debriefing participants at the end of the study
    - Organizing the data from each session
    - Coding participant behavior from each session

- **Risk:** Many studies such as this involve potential risks. The research assistant should discuss the potential risks of being associated with this research with the supervisor.

- **Benefits**: Research assistants will learn how to run an experiment ethically. The research assistant should discuss the potential benefits and consequences of being associated with this research with the supervisor.

- **Reporting Adverse Reactions**: Research assistants can report adverse reactions to the Principal Investigator or the department chair (dept.chair@school.edu). It is important to report adverse reactions. That way, the investigators can take steps to report it.

Research Assistant Signature Date

Supervisor Signature Date

Imagine that you are a hiring manager for a company that specializes in marketing for small businesses. You are evaluating an applicant as an potential employee for your company.

This applicant states that they served as a Research Assistant for a psychology experiment. The applicant included a consent form that documented what they did and the evidence of the skills they obtained as a Research Assistant. The consent form that follows was a supplemental document that provides more information about the research experiment they helped accomplish.

Research Assistant Informed Consent [Condition 4: No Deception – No Training]

- **Purpose:** The purpose of this study is to assess what factors influence an individual's susceptibility to false memories.

- **Overview:** This study will examine the extent that false memories are implanted **without the use of deception**. For this study, you as the Research Assistant will use the Deese-Roediger-McDermott (DRM) paradigm to measure false memories. This paradigm includes reading a list of words related to a concept (e.g., bed, rest, awake) and then measuring what words participants actually recall. Additionally, you will be interviewing the participant, but the interview does not involve deception (or lying to the participant).

- **Risk:** Many studies such as this involve potential risks. The research assistant should discuss the potential risks of being associated with this research with the supervisor.

- **Benefits**: Research assistants will learn how to run an experiment ethically. The research assistant should discuss the potential benefits and consequences of being associated with this research with the supervisor.

- **Reporting Adverse Reactions**: Research assistants can report adverse reactions to the Principal Investigator or the department chair (dept.chair@school.edu). It is important to report adverse reactions. That way, the investigators can take steps to report it.

Research Assistant Signature Date

Supervisor Signature Date

APPENDIX D

EXPLORATORY MEASURES

Exploratory Engagement Questions

- Will the Research Assistant be using deception (or lying to the participant)?
    - Yes
    - No
- How much would you like doing the tasks the Research Assistant is assigned to do?
    - Like a great deal
    - Like somewhat
    - Neither like nor dislike
    - Dislike somewhat
    - Dislike a great deal
- Based on this informed consent sheet, how much do you think the Research assistant learned from this experience?
    - A great deal
    - A lot
    - A moderate amount
    - A little
    - None at all

APPENDIX E

SKILLFUL PSYCHOLOGY STUDENT

Cognitive Psychology

- How much did the student in this description acquire the following? (Please read each description of a skill. Then, indicate how much the student in the scenario will acquire the stated skills.)
    - Analytical Thinking
    - Critical Thinking

Communication Psychology

- How much did the student in this description acquire the following? (Please read each description of a skill. Then, indicate how much the student in the scenario will acquire the stated skills.)
    - Oral Communication

Personality Psychology

- How much did the student in this description acquire the following? (Please read each description of a skill. Then, indicate how much the student in the scenario will acquire the stated skills.)
    - Adaptability
    - Integrity

Social Psychology

- How much did the student in this description acquire the following? (Please read each description of a skill. Then, indicate how much the student in the scenario will acquire the stated skills.)
    - Collaboration
    - Inclusivity

Technological Psychology

- How much did the student in this description acquire the following? (Please read each description of a skill. Then, indicate how much the student in the scenario will acquire the stated skills.)
    - Flexibility/Adaptability to New Systems

Attention Check/Catcher Question

- Please answer “A moderate amount” to this question

Manipulation Check Questions

- Did the research assistant, in the consent form you read, utilize deception in their research study?
    - Yes
    - No
- Did the research assistant, in the consent form you read, have training in their research study?
    - Yes
    - No

APPENDIX F

DEMOGRAPHICS AND SHOULD WE USE YOUR DATA

Demographics

Please answer the following questions about your demographic background. Your responses will never be linked to your identity. Remember that you may leave blank any question that you do not feel comfortable answering.

1.) Gender (Please select one)
    a. Male
    b. Female
    c. Transgender (specify)
    d. Other identity (specify)
2.) Please indicate your age
    a. (Write in)
3.) Which of the following best describes your racial/ethnic identity? (Please select one)
    a. African American or Black
    b. American Indian or Alaskan Native
    c. Asian or Pacific Islander
    d. Hispanic or Latino
    e. White or Caucasian
    f. Multiracial (specify) _____
    g. Another identity (specify) _____
4.) What is the highest degree or level of school you have completed? If currently enrolled, highest degree received.
    a. Some high school, no diploma
    b. High school graduate, diploma/GED
    c. Some college credit, no degree
    d. Trade/Technical school/Vocational Training
    e. Associates Degree
    f. Bachelor's Degree
    g. Master's Degree
    h. Doctoral Degree
5.) Are you currently? (employed)
    a. Employed part time
    b. Employed full time
    c. Student
    d. Unable to work
    e. Unemployed
6.) What is your marital status?
    a. Single
    b. Married or Domestic Partnership
    c. Widowed
    d. Divorced
    e. Separated
7.) If you are currently enrolled in a college or university, what is your major?
    a. (Write in)

Psychologists use data from studies to inform decisions in the real world. For instance, data from this study could be used to help decide how valuable research experience is for students. Thus, it is important that the data we use is reliable. If a participant did not try or skipped through, we would want to exclude their data from the data set.

Should we use your data for data analyses? Your name is not associated with the response, and you will still receive credit regardless of your response.

- Yes
- No

APPENDIX G

DEBRIEFING FORM

Georgia Southern University
Debriefing Form
Implications of Research

Thank you for your participation in this research study. For this study, it was important that we withhold some information from you about some aspects of the survey. Now that your participation is completed, we will describe the withheld information to you and why it was important.

What you should know about this study

We were interested in exploring the effects utilizing deception has on research assistants. More specifically, we were interested in exploring if research assistants who used deception in their research are perceived as obtaining a different skill set when compared to research assistants who did not utilize deception in their research. It was necessary to not disclose this information to you as knowing this information could have influenced your responding. We created four consent forms, one of which was randomly presented for you to read and answer questions on. In this consent form, the research assistant was described to have either used or not used deception along with having gone through or not gone through training. We wanted to know if you perceived a research assistant as having more skills if they used deception versus if they did not use deception, in combination with whether or not they received training or not.

If you have questions

The main researcher conducting this study is Ahmad Sarris, a graduate student, at Georgia Southern University Department of Psychology. If you have questions, you may contact Ahmad Sarris at ahmad-sarris@georgiasouthern.edu. If you have any questions or concerns regarding your rights as a research participant in this study, you may contact the Institutional Review Board (IRB) Chairperson at 912-478-5465 or by visiting them at Georgia Southern University, Suite 3000, Veazey Hall, Statesboro, GA 30460.

Your acknowledgement below indicates that you have been debriefed and have been given information about how to ask questions about the study.