

AN ABSTRACT OF THE THESIS OF

Pamela J. Lundeberg for the degree of Master of Arts in Interdisciplinary Studies in Psychology, Psychology, and Statistics presented on June 2, 2014.

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Although a significant amount of research has investigated the effect of sexualization on women's body esteem and cognitive performance, few researchers have examined the effect of sexualization on girls. Additionally, research that has been conducted regarding girls' experiences of sexualization has primarily focused on media influences. The effect of dolls as a vector of sexualization for girls is understudied, and study of dolls in general has been largely focused around Barbie. The present study investigated the way in which different types of dolls influence girls' body esteem and academic performance and was designed to specifically determine the influence of sexualization. The study manipulated exposure to one of three dolls that were physically similar but represented different levels of sexualization: no sexualization (Corolle Camille), moderate sexualization (Barbie Fashionista), and high sexualization (Bratz Cloe). Twenty girls (ages 5-8) engaged in a 10-minute free play session with one of the three dolls and completed measures of appearance satisfaction, desire for thinness, body surveillance. Additionally, the girls completed age-appropriate math and verbal assessments. Contrary to our hypotheses,

sexualization level of the doll did not influence body esteem or academic performance. These results do not support objectification theory (Fredrickson et al., 1998), as girls in our study were unaffected by exposure to sexualized stimuli. However, regardless of doll condition, girls performed better on the verbal task than the math task. These results could be indicative of a stereotype threat cue associated with doll play.

Keywords: objectification theory, sexualization, stereotype threat, middle childhood

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What Do Girls Learn from Dolls? Sexualized Stimuli and Girls' Body Esteem and
Academic Performance

by
Pamela J. Lundeberg

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I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

Pamela J. Lundeberg, Author

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CHAPTER 1 – INTRODUCTION

Statement of Problem

Exposure to sexualization can cause a multitude of negative outcomes for women. Most notably, experiences of sexualization negatively affect women's self-esteem (Dohnt & Tiggemann, 2006), can lead to depression (Durkin & Paxton, 2002), and are associated with an increased risk for eating disorders (Anschutz, Engeles, Becker, & Van Strien, 2008).

Negative emotional outcomes due to exposure to sexualization – such as increased body dissatisfaction – can also be accompanied by negative cognitive outcomes. According to objectification theory (Fredrickson et al., 1998), the exposure to sexualization causes adult women to engage in self-objectifying behaviors that produce shame about their bodies and negatively affect their mental abilities. Because girls are constantly bombarded with sexualized images – objectified images that depict impossibly thin ideals – they construct ideals that focus on the importance of appearance and presenting oneself for the purpose of making an impression on others. This leads to self-objectification, which causes girls to focus a large amount of their cognitive energy on appearance concerns, leaving less time and cognitive energy for other activities, including academics, thereby causing girls to perform more poorly on academic tasks when they engage in self-objectification. The process of self-objectification is likely to be developed over prolonged exposure to unrealistic standards of beauty and near-constant sexualization of women (Fredrickson et al.).

According to Spencer, Steele, and Quinn (1999), women are also susceptible to a decrease in performance when they perform tasks that are traditionally male-dominated

(math tests, for instance), as they are at risk for experiencing stereotype threat, a phenomenon that causes a perceived judgment of ability to dictate performance. Because men are considered to be superior at math compared to women, when a woman is placed in a situation in which these gender differences are made salient, she is likely to succumb to stereotype threat and underperform on the math task. Stereotype threat theory suggests that even the subtlest cues of gender differences can induce a decrease in performance on cognitive tasks (Neuville & Croizet, 2007).

While a significant amount of research has investigated the effect of sexualization on adult women's body satisfaction and mental abilities, there has been very little research conducted to determine the effect of sexualization on young girls' self-esteem and cognitive abilities. Girls' experiences of sexualization are likely to be similar to women's – and just as harmful to their self-esteem and cognitive performance – especially considering that young girls are in a stage of development at which identity formation is largely associated with appearance concerns (Starr & Ferguson, 2012). However, because of a lack of research in this area, the extent of the effects of sexualization on girls' cognitive abilities and self-esteem has yet to be determined.

Furthermore, much of the research that has investigated the effect of sexualization on girls has not adequately controlled for experimenter effects. Therefore, the present study sought to investigate the effect of sexualization on young girls' body esteem and cognitive ability in a way that ruled out the potential for experimenter bias. This study specifically examined the role of sexualization in females (ages five to eight), assessing the effect of sexualized and objectified stimuli (in the form of fashion dolls) on girls' body esteem and cognitive performance. The study sought to investigate whether

exposure to sexualized dolls influenced girls' ideas about their own body and their ability to perform cognitive tasks.

CHAPTER 2 – EXPERIMENTER EFFECTS

When an individual performs scientific research, it is his or her goal to obtain and present the most pure, unsullied data that he or she is capable of doing. Because of this desire, scientific experiments are designed to ensure that data collected are accurate and unbiased. Certain precautions are taken when designing experiments to guard against factors that could influence the observations taken, measurements recorded, or other data points gathered along the way. However, despite the scientific community's attempts to be objective and unbiased, scientific research can fall victim to certain threats to internal validity that can lead to inaccurate and biased data. Included in these threats to internal validity are *experimenter effects*, a brand of bias that can sully data in devastating ways.

Experimenter effects (also known as *experimenter bias*) occur when researchers influence the behavior of participants in a way that favors their hypothesis or preferred outcome (Marczyk, DeMatteo, & Festinger, 2005). For example, a researcher who hypothesizes that people who eat chocolate are happier than people who eat turnips may act friendlier while assessing the happiness of individuals who eat chocolate and act more aloof toward the individuals who eat turnips in order to guide the outcome in the direction of his or her prediction. By being friendlier to the individuals in the chocolate group, the researcher is likely to cause those participants to be in a better mood, thereby making them more likely to report higher levels of happiness. In this example, the researcher may not even be cognizant of the fact that he or she is treating the two groups of participants in a different manner; often times researchers are unaware that they are acting “differently,” and their actions are completely inadvertent. However, regardless of whether researchers intend to influence the results, the data are still compromised when

researchers act in a way that steers participants into behaving or responding in a certain fashion.

When data are pushed in a certain direction, and inferences are made based on the obtained results, there can be a variety of negative consequences. For example, inaccurate data, compromised by experimenter effects, could be used to provide evidence for certain practices or lead to the implementation of particular programs. Take, for instance, a medical company that is studying the effects of a new medicine to treat HIV/AIDS. Perhaps the new medicine is not actually an effective treatment, but the experimenter's hypothesis is that the treatment will be successful. If experimenter effects occur in the study, it is possible that the researcher could impose his or her assumptions about the efficacy of the drug on the patients, therefore making them more likely to report positive effects of the treatment. Then, when results are produced that indicate the treatment is working, individuals may seek out a treatment that, in actuality, is not effective. In fact, the treatment could even be harmful.

Experimenter effects can be damaging outside of the medical field as well. For instance, in 1986 a significant amount of research was conducted and published by Jay Belsky that declared that entering infant day care was a "risk factor" for children that ultimately led to poor developmental outcomes (Phillips, McCartney, Scarr, & Howes, 1987). Included in these negative outcomes were increased aggression, disobedience, and social withdrawal. Upon further investigation, however, Phillips et al. determined, via meta-analyses, that experimenter effects were present in Belsky's research. Experimenter expectancy affected ratings of researchers who were aware of whether the child was in day care, leading them to negatively evaluate the behavior of children who were in day

care. Because of experimenter effects, individuals were given misinformation regarding the efficacy of day care, and the reputation of day care centers – and individuals who made use of them – was tarnished.

Types of Experimenter Effects

Experimenter effects can manifest in many different ways, not simply limited to the treatment of participants. Rosenthal (1976; 2002) asserts that there are two distinct “branches” of experimenter effects – noninteractional effects and interactional effects. Noninteractional effects refer to experimenter effects that do not influence participant behavior, while interactional effects are experimenter effects that influence participant behavior. While these two main categories of experimenter effects are vastly different from one another, both types of experimenter effects affect study outcomes when they arise in the research setting.

Noninteractional Effects

Noninteractional effects, according to Rosenthal (1976), can occur in a variety of stages throughout the research process. First, there is the possibility of *observer effects*. When researchers are responsible for making observations on their participants, their observations tend to go in the direction of the researcher’s hypothesis (Rosenthal, 2002). In psychotherapy, for example, therapists often are not as accurate at recording the efficacy of treatments as we would like to believe (Rosenthal, 1976). Therapists may view certain events as “unimportant,” thereby opting not to record these events. Other events, however, may be “over-reported.” Too often, these errors in measurement or reporting are in line with the researchers’ preferred results.

While observations themselves may not be entirely accurate, observer effects are not limited to errors in the observation process; recording errors are also included. While researchers observe their participants' behavior, they must have some way of recording these behaviors. While careful recording of behavior is the objective, errors of recording have been demonstrated that tend to favor the researcher's predictions (Rosenthal, 1976).

Rosenthal (1976) does acknowledge that recording errors can be *self-cancelling*, meaning they end up "balancing out." For example, if a researcher is monitoring the number of times a certain individual smiles, the researcher may miss two smiles but accidentally record two nonexistent smiles. In this case, the researcher would ultimately record the correct number of smiles, despite his or her errors. However, recording errors are not always self-cancelling, and the mistakes tend to be made in a way that favors the hypothesis (Rosenthal). Kennedy and Uphoff (1939) performed a study to assess the presence of recording errors in an experiment regarding extrasensory perception (ESP). Undergraduate students who participated in the study were asked to record the investigator's guesses regarding a symbol (circle, square, etc.) being "transmitted" by the student observer. The guesses to be made by the investigator were predetermined, which allowed the number of recording errors to be counted. It was found that students who reported belief or disbelief in extrasensory perception tended to make recording errors that were in line with their beliefs. Students who reported belief in extrasensory perception made 71.5 percent more errors that increased the ESP scores, while students who reported disbelief made 100 percent more errors that decreased the ESP scores, suggesting a recording error that was in consonance with the recorders' own convictions.

While observer effects may occur while participants are involved and present, noninteractional experimenter effects can also occur after data have been collected and participants are no longer involved. Specifically, *interpreter effects* can occur during data analysis and the interpretation phase of research. Interpreter effects can occur when researchers are “selectively attentive to data,” seeking out results that affirm their predictions, and often times neglecting data that do not adhere to their theoretical views (Rosenthal, 2002). For example, if a researcher performs the same experiment in 20 locations, garnering significant results in 15 of these locations and non-significant results in 5 of those locations, the researcher may opt to exclude those 5 locations. While researchers may have legitimate reasons for excluding particular participants or experiments, the decision to exclude data ultimately relies on the researcher’s own interpretation of the situation. This poses a problem, as researchers may formulate interpretations that serve their own needs and strengthen their claims.

Researchers may also misinterpret attained results in a way that supports their predictions (Marczyk, DeMatteo, & Festinger, 2005). If results are not significant, but are trending toward significance, researchers might interpret that the sample size was too small to detect a difference that may or may not actually be present. Similarly, some researchers may make claims regarding trend effects that suggest support for their underlying theory or mechanism while making assumptions regarding other factors that prevented the results from attaining the desired level of significance.

While some researchers may opt to “mold” the data to fit their predictions, other researchers engage in the process of changing the original hypothesis to fit the data (Marczyk, DeMatteo, & Festinger, 2005). If data are obtained and the researcher realizes

that these data do not support the original research, the researcher may opt to alter the original hypothesis so that the hypothesis appears to be supported. This particular affair is an example of a noninteractional effect, specifically an *intentional effect*, which is a type of experimenter effect that is purposeful and deliberate (Ronsenthal, 2002).

Fortunately, the occurrence of intentional effects in the psychological field is relatively rare (Rosenthal, 1976). This type of experimenter effect does occur, however, and it includes fabrication of data. Researchers who choose to manufacture or alter data may do so counting on the difficult nature of replication. The process of replicating experiments is challenging, and there are many components that can unintentionally deviate from the original research when attempting the replication of a study. A different population or a slightly varied procedure can produce vastly different results. Researchers who fabricate data rely on this fact, as they expect researchers to find alternate explanations for their inability to replicate results.

Fabrication of data can also take place because of the non-publishable nature of negative results (Rosenthal, 1976). As scientific journals seek to publish articles that have positive results (that is, results that argue for a presence of something rather than an absence of something), researchers feel more pressure to attain those positive results. Similarly, undergraduate students conducting research can experience increased desire to attain significant results to turn in a “better” paper or to please their professors. Often times, undergraduate students who work in research settings have not had the “values of scientific research” instilled in them yet, and they do not truly appreciate the importance of empirical, unbiased data (Rosenthal). Because of this, students often times fail to see the severity of fabricating data.

While most researchers, fortunately, do not engage data fabrication, researchers do sometimes choose to ignore results that disprove their hypothesis, thereby committing “self-serving” errors (Marczyk, DeMatteo, & Festinger, 2005). Choosing only to report those results that are significant and failing to mention those that were not significant is a fairly common practice that affects others’ perceptions of the research itself (Rosenthal, 1976). This type of noninteractional affect may be deliberate or unintentional, but it is problematic nonetheless, as it fails to present the full, accurate picture of the data collected.

Interactional Effects

While noninteractional effects – including observer effects, interpretation effects, and intentional effects – influence data without affecting participants’ behavior, interactional effects are factors that – consciously or unconsciously – influence the ways participants act and respond in experimental situations (Rosenthal, 2002). Participants respond in different ways depending on a variety of factors regarding how the experiment is conducted. If an experimenter is present during the study, the characteristics possessed by the experimenter that can potentially affect the participants’ experience and thereby affect the results obtained.

People are innately different, and therefore all experimenters will differ in terms of age, sex, race, and other inherent factors. However, experiments have demonstrated that different experimenters obtain different results from equivalent subjects, suggesting that experimenters’ characteristics affect participants’ responses (Rosenthal, 1976). For example, it has been shown that male and female experimenters tend to obtain significantly different responses from their participants. In a verbal learning study,

Binder, McConnell, and Sjöholm (1957) discovered that their attractive female experimenter obtained significantly higher results than their “husky” male experimenter. This trend is not always the case, however; in other experiments, male experimenters have been found to be friendlier than female experimenters (Rosenthal, 1976). The mechanism that leads to different results being obtained by male and female experimenters is unknown, however. Perhaps men and women conduct the same experiment slightly differently, or perhaps it is merely the difference in appearance that leads to the divergent results.

Age of the experimenter has also been shown to, at least in some instances, affect participant behavior (Rosenthal, 1976). Older experimenters and younger experimenters act differently and are more or less intimidating depending on the age of the participant. While participants of a certain age may feel more comfortable with a younger experimenter, other participants may feel more comfortable with an older experimenter. The responses that participants give may depend on the level of ease they feel with their experimenter, and age of the experimenter can play a role in the comfort that participants feel (Rosenthal, 2002).

Race of the experimenter can also affect the responses participants give (Rosenthal, 1976). Summers and Hammonds (1965) discerned that individuals are more likely to say “the right thing” when their experimenter is a different race than they are. African American individuals said the “proper” thing more often to a Caucasian interviewer compared to an African American interviewer, while Caucasian participants said the appropriate thing more often to African American interviewers compared to Caucasian interviewers. Other studies have been conducted that indicate physiological

changes depending on the race of the experimenter as well as changes in performance depending on the experimenter's race, suggesting that the race of an experimenter can influence a multitude of factors in an experimental situation (Rosenthal, 1976).

Aside from biosocial factors, other characteristics of experimenters can also influence participants' behaviors and responses. Experimenters' personalities can be quite variable, and there are many aspects of an individual's personality that can affect the way participants respond to him or her. The anxiety level of an experimenter has been shown to affect results obtained (Rosenthal, 1976). In most instances, experimenters who have low levels of anxiety produce results that indicate that participants perform better in assessments in terms of performance measures; that is, participants tend to perform better when the experimenter has a low level of anxiety (Winkel & Sarason, 1964).

Experimenters who display a high level of warmth seem to have the same effect on participants as experimenters with low anxiety (Rosenthal, 1976). Ware, Kowal, and Baker (1964) executed an experiment in which two experimenters alternated acting warm or cold toward the participants while initiating them into a signal detection task. In all instances, participants detected signals better when they had been instructed by the warm experimenter. Differing levels of need for approval, hostility, intelligence, and status also appear to affect participant responses (Rosenthal, 2002).

Along with experimenters' innate traits, situational factors can also play a role in participant behavior. An experimenter's experience level, for example, can affect his or her behavior, often times changing the way experimenter presents stimuli to participants (Rosenthal, 1976). This difference in behavior is frequently detectable by participants, which can further exacerbate the issue. For example, more experienced researchers

obtained faster learning speeds from their participants than less experienced researchers in a study conducted by Brogden (1962). As experimenters become more practiced, perhaps they become more comfortable, thereby lowering their own anxiety levels. This increase in confidence and decrease in anxiety could be noticeable to participants, which could make them more comfortable in the research setting.

Experimenter experience can also change depending on the results from previous participants (Rosenthal, 2002). When experimenters begin collecting data, they tend to be attentive to the responses given by the initial participants. When the first few participants of an experiment respond as they are expected to respond (as in, the participants respond how the researcher predicted they would respond), the behavior of the experimenter appears to change in a way that influences successive participants to respond too often in the direction of the experimenter's hypothesis (Rosenthal).

While experimenter effects indeed can emerge during data collection, experimenter bias can also occur before the commencement of data collection. Many experimenters test out their own apparatus or stimuli before presenting the materials to participants in order to make sure the stimuli are effective. However, sometimes stimuli that appear clear to the creator of the stimuli are actually unclear or ambiguous to the participants. When experimental stimuli are unclear, the participants' interpretations of their meaning tend to agree with the experimenter's own interpretations of the stimuli (Rosenthal, 1976). This suggests that researchers may, often times unintentionally, design and present experimental stimuli that "lead" participants into a particular interpretation or particular response.

Other times, researchers may guide participants towards preferred responses with their own actions rather than the experimental stimuli. According to Rosenthal (1976), expectancy effects are prevalent in research because of the nature of science. People who are invested in their research have a desire for certain results, and often times their expectancy for those results can lead them to act in a way that steers participants in that direction. Researchers expectations ultimately affect not only the study design choices they make, but also how they interact with participants.

When a researcher creates a hypothesis, he or she is placing stake in a particular set of outcomes. If the researcher did not think that his or her hypothesis was likely to be upheld, then the researcher would amend the hypothesis. This hypothesis conception creates somewhat of a “self-fulfilling prophecy,” where the prediction of an event makes that event more likely to happen (Merton, 1948). Because of the personal investment a researcher places in his or her hypothesis, researchers are more likely to yearn for the affirmation of their hypothesis and perform actions – whether intentional or not – that make this affirmation more likely.

Experiments have shown that researchers’ hypotheses do indeed affect the results obtained (Rosenthal, 2002). In an experiment conducted by Rosenthal and Fode (1963), twelve experimenters were each given five rats and were given the task of teaching the rats to run through a maze with the help of visual cues. Half of the experimenters were told that their rats were bred to have advanced maze-running capabilities, and half of the experimenters were told that their rats had been bred to have poor maze-running skills. In actuality, however, there were no differences between the rats. At the conclusion of the experiment, results indicated that the rats that had been taught to run by the

experimenters who were expecting advanced maze running showed significantly greater learning than the rats that were expected to be poor maze runners.

Experimenter expectancy is not limited to animal research; it has also been demonstrated in experiments with human participants (Rosenthal, 2002). In 1966, Rosenthal and Jacobson conducted a similar experiment in an elementary school setting. All of the children who participated in the study were given a non-verbal intelligence test, and teachers were told that the test predicted “intellectual blooming.” Following the assessment, approximately 20 percent of the students were chosen at random to be a part of the experimental group. The teachers were told that those students scored the highest on the “intellectual blooming” test and would experience great gains in their intellectual ability during the rest of the school year. In reality, these students were chosen at random and had varying levels of intellectual capability. At the end of the school year, which was eight months after the original assessment, the students were all given the same non-verbal intelligence test that was used as the beginning of the study. Results indicated that those students who were in the experimental group – that is, the students who the teachers believed to be most intellectually capable – experienced a significantly greater increase in intelligence scores than those students who were in the control group.

Expectancy effects are undoubtedly a powerful force that has a clear effect on experimenters’ actions. Even if experimenter seeks to be completely nonpartisan in his or her interactions with participants, the researcher’s own personal beliefs, predictions, and desires can influence the way he or she treats participants. Although this type of experimenter effect is often times unintentional, it is by no means innocuous.

Participant Effects

Just as experimenters want to be “good researchers” – seeking to collect data that support their hypotheses – participants want to be “good subjects.” Because of this, research can be subject to *demand characteristics*, a situation that arises when participants try to discern the experimenter’s hypothesis and act in ways that affirm that hypothesis (Klein et al., 2012). Demand characteristics, sometimes referred to as *participant effects*, also refer to participants’ tendencies to act differently than they would normally act merely because they are in a research setting (Marczyk, DeMatteo, & Festinger, 2005). This difference in behavior may be conscious or unconscious, and it may or may not be related to participants’ beliefs about the hypothesis of the study. In the most severe instances of demand characteristics, however, participants change their behavior based on their assumptions about the fundamental purpose of the study. When participants change their behavior based on their beliefs about the study’s purpose, a major confounding factor is introduced into the study.

While demand characteristics come to fruition for a variety of reasons – participants wanting to be good subjects, seeking to be helpful to the researchers, or hoping to come across in a good light – the presence of these participant effects creates difficulty in research settings. Volunteers seem to be particularly sensitive to demand characteristics, and the vast majority of individuals who participate in psychological research are volunteers (Rosnow, 2002). This suggests that individuals who are not likely to have a strong desire to be “good subjects” will not participate in research in the first place. With this being said, there may be something different about volunteers from the rest of the population to begin with. Often times volunteers seek out the opportunity to

participate in research and are compensated in some way for their participation (Marczyk et al., 2005). It is possible that the use of individuals who volunteer for research may produce a participant effect in and of itself, regardless of volunteers' predispositions toward displaying demand characteristics.

Experimenter Effects in Studies with Children

Although the majority of experimenter effects research has focused on the presence of experimenter effects in studies with adults as the population of interest, experimenter effects can occur in studies that involve children as well. While the majority of research regarding experimenter effects has not been conducted recently— as experimenter effects were heavily investigated decades ago and interest in experimenter effects has been somewhat subdued since then – the exploration of experimenter bias in research with child participants has been a more recent trend (comparatively speaking). Research has indicated that experimenter effects, particularly expectancy bias, have been present in child research in a variety of instances (Michelson, Mannarino, Marchione, Kazdin, & Costello, 1985). Michelson and his colleagues, for example, proclaimed that studies that are conducted in a natural setting are influenced by expectancy effects that significantly influence experimenters' observations.

In research with child participants, the experimental setting is often more naturalistic than it is for adult participants. More so, the activities that children are asked to do in research settings are frequently more typical of daily life than are the tasks adult participants are asked to perform in research settings. According to Michelson and his colleagues, research that involves child participants also normally includes some form of direct observation. When researchers, even those who are well-trained, are asked to make

observations of behavior, their knowledge of hypotheses and theoretical framework can affect their ability to objectively observe participant behavior (Michelson et al., 1985). Therefore, research with children may involve a higher risk of experimenter bias than working with adults.

Michelson and his colleagues (1985) further determined that experimenters' knowledge of their participants can lead experimenters to change their observational patterns in a way that supports their assumptions about the participants. Michelson et al. conducted a study in which undergraduate participants were asked to rate children's behavior. Each participant (who acted as a rater) participated in a full day of training to ensure participants understood the rating system and were relatively consistent in their ratings. Following the training, participants were asked to watch videotapes of children playing and rate them on a variety of characteristics including peer interaction (maladaptive or adaptive), appreciation, regard, and aggression. The task the participants performed (rating the children's behavior on the videos) was the same task they carried out on the training day. However, when participants were asked to rate the children's behavior during the experiment (after the training day), they were told that the children they were rating were either socially adjusted or socially maladjusted. In actuality, both groups were viewing the same children. After ratings had been conducted, it was found that participants who were told the children were socially adjusted rated the children's behavior as significantly more positive than the participants who were told the children were socially maladjusted.

While experimenter effects can occur during the observation of children, they can also occur during the presentation of experimental stimuli (Smith & Whitney, 1987). A

significant amount of research has demonstrated the positive effects of particular types of free play in children. However, Smith and Whitney argue that these positive results could have been obtained because of experimenters' unconscious cues based on their expectations regarding play. Because experimenters believed positive effects to be associated with various forms of play, when researchers (who were aware of the hypotheses) interacted with children, it is probable that they unconsciously acted in ways that, in essence, gave children "hints" as to the responses they were supposed to have during and following free play sessions. Smith and Whitney also note that when experimenter effects are adequately controlled for, replication of results (indicating positive effects of particular forms of play) could not be achieved.

Aside from experimenters (consciously or unconsciously) acting in ways that may affect the results of child research, it appears that children themselves may be more suggestible than adults, making them more liable to respond in a way that is socially desirable (Uhl, 2012). In a recent study, Uhl found that children were more likely to falsely report that an individual had engaged in some form of wrong doing when they were subtly reinforced by the interviewer. When children were not reinforced by the interviewer they were significantly less likely to provide a false report of wrongdoing. Because of the amount of social pressure children desire to provide the "right answers," they are more likely to respond to slight cues or hints that researchers give (Calmillett, 2011). This poses a problem in that even the subtlest cues can be picked up by children, making the likelihood of experimenter effects quite high in circumstances when experimenters are aware of hypotheses or have outcome-related expectations.

Prevention Methods

Participant effects and experimenter effects can arise for a multitude of reasons in many different research settings, and the threat they present to the validity of experiments is clear. Fortunately, there are many precautions that can be taken to reduce the risk of the occurrence of experimenter effects or participant effects. While there are some preventative measures that need to be employed throughout the study process (including data collection and analysis), other steps need to be taken before collection of data even begins. If a single researcher is responsible for creating the hypothesis, designing the study, and collecting and analyzing data, there is a high risk of experimenter effects (Marczyk et al., 2005). Therefore, multiple researchers should be involved in the research design process. Having multiple researchers participate in the planning of a study allows for a diversity of opinions that often leads to a clearer, stronger research design.

Multiple researchers can act as a safeguard in other stages of the research process as well. Careful control over the research procedures is essential to prevent experimenter effects (Marczyk et al., 2005). Utilizing multiple researchers allows for multiple “quality control mechanisms” to ensure that the delivery of experimental stimuli remains constant throughout the study. Especially if more than one researcher was involved in designing the experimental stimuli, having multiple researchers guarantee that the study procedures remain consistent provides extra protection against subtle differences in presentation of experimental materials.

While having multiple experimenters observe research procedures does enhance consistency, there are other methods to reduce the likelihood of deviations in protocol as well. Automated procedures are unsurpassed in terms of consistency, and automatization

is ideal in research setting where it is possible (Marczyk et al., 2005). However, if automated procedures are not possible, scripts can be effective in assuring consistent delivery of instructions to participants. Having uniform ways of interacting with participants is also imperative, and it is crucial that procedures are routinely checked to ensure that each participant is treated the same and receives the same instruction.

Aside from training experimenters regarding study procedures, it is also important that researchers provide training to their experimenters regarding the impact of experimenter effects on data (Marczyk, DeMatteo, & Festinger, 2005). Experimenters who are more aware of the impact of experimenter effects are more likely to be conscious of their actions and seek to avoid behavior that could potentially alter the data (Rosenthal, 1976). Providing information and training on ways to control experimenter effects is also helpful, as it supplies experimenters with the ability to self-regulate (Marczyk, DeMatteo, & Festinger, 2005).

Typically, more knowledgeable experimenters are more competent and consistent in study procedures (Rosenthal, 1976). However, experimenters that have knowledge about the study's hypothesis are more prone to experimenter effects (Marczyk, DeMatteo, & Festinger, 2005). Individuals who are aware of the hypothesis are more likely to (consciously or unconsciously) act in a way that leads participants into responding in a way that confirms that hypothesis (Rosenthal, 1976). Therefore, experimenters who are collecting data should have limited knowledge of the hypothesis, if possible, as to remove the possibility of experimenters steering participants toward responses that are consistent with the hypothesis.

Sometimes, it is not plausible for experimenters to be completely unaware of the hypothesis being tested. Whenever possible, however, experimenters should be naïve to the experimental manipulations being received by the participants. If an experimenter does not know which condition a participant is in, the experimenter is less likely to behave in a way that guides the participants to a certain response, as the experimenter does not know what the “correct” or preferred response is.

There are multiple methods that can be employed to minimize the experimenter’s knowledge about the participants’ experimental conditions. The most powerful technique (that guards against experimenter expectancy) is the *double-blind technique* (Marczyk et al., 2005). In the double-blind technique, neither the experimenters nor the participants know which condition the participants belong to. This technique is especially effective because it guards not only against experimenter bias but also participant effects. If an experimenter is unaware of the condition a participant is in, he or she is virtually unable to (intentionally or unintentionally) act in a way that introduces expectancy effects into the study. Likewise, if a participant is unaware of which condition he or she is in, the participant is unable to know what responses the researcher is “looking for.” Therefore, the study is more resilient to demand characteristics as well.

Although double-blind studies are unmatched on their ability to protect against experimenter effects and participant effects, they are often times not possible in certain research settings. Double-blind studies often require the supervision of an individual outside of the study to track participants’ condition assignments so that researchers are unaware of these assignments (Marczyk et al., 2005). This can be a difficult feat, and often times it is not possible. In certain research settings, it is simply not plausible for

participants to be blind to condition. For example, in certain medical studies, the procedure or treatment cannot be kept from the patient. In this instance, a *single-blind technique* may be employed instead. While the double-blind technique ensure that neither researchers nor participants know the participants' condition assignments, the single-blind technique ensures only that researchers are naïve to the participants' condition assignments; the participants, however, are aware of which conditions they are assigned to. While the single-blind technique fails to protect against demand characteristics, it does prevent experimenter effects from occurring.

Present Study

In the present study, protecting against experimenter effects was an important consideration. Upon initial design of the study, we opted for a study design that failed to adequately protect against experimenter effects. As our population of interest is limited to young girls (ages five to eight), our primary concern was the comfort and safety of the participants. Therefore, we opted to keep the same research assistant with the child throughout every stage of the experiment to reduce any form of anxiety the participants may feel from having to be separated from an individual they had established comfort with. Choosing this procedure posed a problem as it did increase the chance of expectancy effects, particularly because the researcher who would be administering the experimental stimuli (and performing the assessments) would also be aware of the participant's experimental condition.

While this study design was originally deemed to be the most viable option (in terms of ensuring that the child participant remained comfortable throughout the entire experiment), it became clear through consulting with researchers outside of our

laboratory that the threat of experimenter effects was too high with this study design in place. As the same research assistant knew the hypothesis, was aware of which condition the participant was assigned to, and was the person performing all of the experimental assessments, experimenter bias was an undeniable risk. Ultimately, the decision was made to alter the experimental design to reduce the possible threat of experimenter bias.

With the assistance of colleagues, both in and outside of the Social Lifespan Development lab, a new study design was derived that protected both the participants' wellbeing and the internal validity of the experiment. In the amended study design, two research assistants build rapport with the child, and one research assistant engages in the free-play session with the child, then the other research assistant administers all of the assessments. After the free-play session is complete, the research assistant who was with the child puts the doll and clothes away so that the other research assistant can administer the experimental measures to the child while being naïve to the doll condition.

The amended study procedure was necessary to ensure that the administration of experimental measures was guarded against the possibility of intentional or unintentional experimenter effects. Because research assistants are aware of the study's hypotheses, it was imperative that the researcher performing the assessment was masked to the experimental condition so that she did not inadvertently guide a participant toward a particular set of responses. The damaging nature of experimenter effects is clear, and the present study's design was altered to ensure that our data are not contaminated.

Aside from the alteration to the study design, other precautions were taken to guard against experimenter effects as well. Research assistants who interacted with participants, collected data, and performed data entry were all thoroughly trained in all

study procedures before running participants through the study. Research assistants were trained on the importance of consistency in all procedures, specifically regarding the delivery of the assessments. They were also informed about the damaging nature of experimenter effects, and they were trained on ways to minimize the possibility of experimenter effects occurring. Aside from the initial training that research assistants received, “booster sessions” were also administered throughout the year to ensure that procedures were being adhered to. Study procedures were also scripted, and the scripts were provided on the data collection forms to maximize consistency in delivery across research assistants.

While all research assistants performed data collection and data entry, multiple research assistants were utilized throughout the process in a way that ensured the same research assistant was not entering data that she collected. For example, if Amy (an RA) collected data from a participant, Shelly (a different RA) would enter data for that participant. Furthermore, the same research assistant who entered data was never the research assistant who checked the entered data. A different research assistant, who was also not the research assistant who initially collected the data, would check the data after it had been entered in SPSS. Also, the experimental condition that the child was placed in was noted on the back of the last page of the data collection form, meaning research assistants were naïve to the condition while they entered and checked data. These additional precautions minimized the risk of recording errors and allowed for multiple checks and balances throughout the data collection and entry process.

CHAPTER 3 – STEREOTYPE THREAT

There are multiple factors that influence how well an individual is able to perform a certain task. Imagine a student who is completing a midterm examination, for example. In this instance, the student's knowledge of the subject matter will most certainly play a role in the student's performance on the test. If a student comprehends the relevant information, he or she is more likely to attain a high grade on the test. Other factors, such as amount of sleep the student obtains the night before a test or the amount of time the student spent preparing for the test, will also influence the student's performance on examination day. Aside from student-related factors, situational factors may have bearing on a student's test-taking ability. Some situational factors – construction work happening outside of the classroom or lights flickering on and off, for example – are events that may impact a student's ability to succeed in a testing situation. These outside circumstances, while frustrating, affect all students who are in the examination room. That is, every student who is trying to take the test has to deal with the same construction noise, for example. In other cases, however, situational factors can arise that affect certain groups or individuals while not affecting other groups. This is the case in the instance of *stereotype threat*.

According to Steele and Aronson (1995), stereotype threat is defined as “a situational predicament” in which an individual is at risk of confirming a negative stereotype about a group the individual belongs to. For example, imagine a stereotype exists that women are better cartographers than men are. If we made individuals aware of this stereotype and then asked them to draw a map, the men would be put in a situation

where they are in danger of adhering to that negative stereotype about men's cartography abilities.

Stereotype threat theory was first introduced by Claude Steele in the early 1990s, and Steele – accompanied by a variety of colleagues – has conducted an array of experiments to discover the influence of stereotype threat (Inzlicht & Schmader, 2012). Specifically, Steele and Aronson (1995) demonstrated the negative effect stereotype threat can have on individuals' intellectual ability. Since the introduction of stereotype threat, research has continued to be conducted to determine the scope of the phenomenon, determine the extent of its influence, and ascertain protective factors that could potentially diminish the negative influence stereotype threat appears to induce.

Effects on Performance

Steele and Aronson (1995) coined the term *stereotype threat* to describe a situation in which an individual suffers when he or she is made aware of negative stereotypes about his or her group affiliation. Furthermore, stereotype threat also refers to circumstances in which attention is brought to individuals' group affiliations without specifically stating the negative stereotype surrounding the group (Steele & Aronson). In the cartography example from before, for instance, men would not need to be told that a stereotype exists that women are better cartographers than men; simply placing the men in a situation in which they were made aware of their gender (thereby having their gender identity activated) would make them susceptible to succumb to stereotype threat. If men had their group identity made salient to them, they would be more likely to perform in a way that falls in line with the stereotype regarding that group.

Steele and Aronson (1995) first demonstrated the negative influence stereotype threat can have on individuals' ability to perform cognitive tasks. Many stereotypes are in existence today, and the presence of these stereotypes in and of themselves can affect individuals in a negative way. Stereotype threat is perhaps even more troubling, however, because it causes a "self-threat" situation in which individuals hinder their own ability, consciously or unconsciously, by virtue of these stereotypes. In Steele and Aronson's seminal experiment, the effect of stereotype threat on African Americans' test performance was assessed. Steele and Aronson argued that when African Americans are placed in a testing situation, they face the risk of confirming the negative stereotype that surrounds their group in terms of perceived intellectual ability. To test this theory, they designed an experiment in which the same test was given under different pretenses. Consistent with stereotype threat theory, results indicated that African American participants performed more poorly on the test when they were told it was a diagnostic measure of intelligence compared to when they were told it was a simple laboratory task. Caucasian participants, however, performed equally well regardless of whether they were told the test was an intelligence assessment or a simple task. This suggests that cueing individuals about their group's weaknesses – that is, making individuals aware that the task they are performing is in some way related to an area their group is perceived to be insufficient at – makes individuals more likely to reinforce that negative stereotype through their own actions or behaviors.

While Steele and Aronson's initial experiment utilized a paradigm in which individuals' attention was drawn to the task at hand, other situations can induce a stereotype threat as well. In a meta-analysis conducted by Nguyen and Ryan (2008), three

“stereotype threat-activating cues” were classified – blatant, moderately explicit, and indirect/subtle. According to Nguyen and Ryan, blatant stereotype threat cues are those that specifically involve a negative stereotype about an individual’s in-group (group that he or she belongs to). In a blatant stereotype threat activation scenario, the negative stereotype is conveyed to the participant prior to the completion of the assessment. For example, telling individuals that Caucasians tend to perform better than African Americans on word searches right before asking individuals to complete a word search would place African Americans in a blatant stereotype threat situation.

While blatant stereotype threat cues involve specifically stating the exact nature of a stereotype – i.e., group X is better than group Y at task Z – moderately explicit stereotype threat cues are not so transparent. A moderately explicit stereotype threat cue is one in which group differences are conveyed, but the exact differences themselves are not stated (Nguyen & Ryan, 2008). For example, instead of telling individuals that Caucasians tend to be better at word searches than African Americans (as was the case in the blatant stereotype threat cue), a moderate stereotype threat cue would indicate that there are group differences between African Americans and Caucasians in terms of word search ability, but the differences themselves would not be conveyed to the individuals. Typically, in the case of test-taking situations, moderately explicit stereotype threat cues occur in test directions, and the directions – and the messages within them – are left for the individuals’ own interpretations (Nguyen & Ryan).

In the case of both blatant and moderately explicit stereotype threat cues, the notion of group differences is conveyed to the individuals who are performing the task at hand. In the indirect and subtle stereotype threat cue situation, however, this is not the

case. According to Nguyen and Ryan (2008), indirect and subtle stereotype threat cues are those that in some way manipulate the test-taking experience for individuals without explicitly stating group differences. Indirect and subtle stereotypes either make individuals aware of their group membership (e.g., making women aware of their gender) or draw attention to the evaluative nature of a task (e.g., telling individuals that a test is a direct measure of their own intelligence). While indirect and subtle cues may not explicitly state negative stereotypes or group differences, individuals may unconsciously become aware of the negative stereotypes through subconscious mechanisms (Nguyen & Ryan).

Because there are many different kinds of situations that induce stereotype threat, the chance of a stereotype threat situation occurring in individuals' daily lives is a substantial concern. According to Nguyen and Ryan (2008), individuals are most likely to be threatened by a stereotype-activation cue when the task they have to perform is challenging. Stereotype threat theory suggests that if a task is challenging, it requires more cognitive energy. Therefore, cognitive interference that occurs from the activation of a stereotype is more problematic when a task is cognitively demanding. While individuals are typically able to cope with interference while performing a non-challenging task (e.g., tying a pair of shoelaces), it is more difficult for individuals to perform well on a difficult task (e.g., a verbal skills task) when not all cognitive resources are available.

Stigmatized groups, such as ethnic minorities, are at particular risk of experiencing stereotype threat (Nguyen & Ryan, 2008). When a stereotype is salient in society, the members of the stereotyped group are cognizant of the negative stereotype

that surrounds their group. Because of this, members of stigmatized groups are likely to feel pressure when performing a task that encompasses an aspect of that stereotype. Consistent with the initial findings of Steele and Aronson (1995), a meta-analysis conducted by Nguyen and Ryan revealed that ethnic minorities tend to underperform in test-taking situations when they are placed in a stereotype threat situation. This is particularly problematic in the United States, as people from minority groups tend to experience high-stakes testing situations. Specifically, an individual's ability to access higher education or obtain employment opportunities frequently relies on his or her ability to perform well in a testing situation. In a testing situation in which a stereotype threat exists, the likelihood of an individual performing well is diminished, thereby exacerbating the problem further.

Like ethnic minority groups, women are also at a greater risk of experiencing stereotype threat (Nguyen & Ryan, 2008). Shortly after Steele and Aronson's seminal work, the effect of stereotype threat on women's math performance was assessed. Steele and Aronson's original experiment showed that the negative stereotype surrounding African Americans' intellectual ability could induce a stereotype threat situation in which African Americans performed more poorly on a test when they believed it was an assessment of their intelligence. Similarly, Spencer, Steele, and Quinn (1999) sought to determine if the negative stereotype surrounding women's math ability could act in the same way. To determine the influence of stereotype threat on women's performance on mathematical tasks, Spencer et al. conducted an experiment in which men and women took the same math test after receiving different prompts. In the stereotype threat condition, individuals were told that test they were about to take had previously produced

gender differences. In the no stereotype threat condition, individuals were told that the test had been shown to not produce gender differences. Results indicated that women who were in the stereotype threat condition scored significantly lower on average than any other group. That is, men and women who did not experience stereotype threat scored similarly. Meanwhile, women who experienced a stereotype threat situation suffered a significant decrease in math performance, while men were unaffected by the stereotype activation cue.

Since Spencer and his colleagues' initial findings of stereotype threat's negative effect on women's math performance, a significant amount of research has been conducted in an attempt to replicate these findings. In a literature review conducted by Stoet and Geary (2012), it was determined that 11 experiments – designed to be exact replications of Spencer et al.'s original work – have found confirmatory evidence of stereotype threat's effect on women's ability to perform on mathematics assessments. While there have been other replication attempts that were unsuccessful, Stoet and Geary determined that the majority of replications have produced results that support stereotype threat theory.

Although the majority of stereotype threat research has focused on test-taking circumstances, stereotype threat can influence performance outside of the traditional academic setting as well. Stone, Lynch, Sjomeling, and Darley (1999) investigated the effect of stereotype threat on athletic performance. Much like negative stereotypes surround African Americans in the realm of intelligence, stereotypes exist regarding Caucasians' deficiencies in terms of athletic ability. In their experiment, Stone and his colleagues sought to determine if performance on an athletic task would differ depending

on the title the test was given. Stone et al. had individuals play a game of golf (the same course in each condition), but they differed the description of the task at hand. In one condition, participants were told the game of golf was a test of “natural athletic ability.” In the other condition, they were told the game was a test of “sports intelligence.” Results indicated that African Americans performed significantly better in the “natural athletic ability” condition, while Caucasians performed significantly better in the “sports intelligence” condition. This suggests that African Americans faced a stereotype threat when they were told the game was a test of their intelligence, as negative racial stereotypes are present regarding this domain. Similarly, Caucasians experienced a stereotype threat situation when they were told the game was a test of their athletic ability, as there are negative racial stereotypes surrounding the athletic ability (or lack thereof) of Caucasians. Stone et al.’s findings suggest that stereotype threat has applications outside of the test-taking environment, as stereotype threat has the potential to affect both cognitive and physical abilities.

Underlying Mechanisms

While a significant amount of research has supported the existence of stereotype threat in test-taking situations, there is a limited amount of information regarding the underlying mechanisms that produce this effect. Schmader and Johns (2003) posited that stereotype threat may function by decreasing working memory capacity. To test this theory, Schmader and Johns conducted an experiment in which women and men completed a measure of working memory capacity (the “absolute span,” which is a common working memory assessment) in a stereotype threat situation or not in a stereotype threat situation. In the stereotype threat situation, women were told the

working memory task was a measure of “quantitative capacity.” They were also told that gender differences in math might stem from gender differences in quantitative capacity.

In both conditions – stereotype threat and no stereotype threat – participants were informed that they would receive feedback related to their performance as well.

Consistent with their predictions, Schmader and Johns found that women who were in the stereotype threat condition showed lower working memory capacity than the other three conditions (women without stereotype threat and men with/without stereotype threat).

This suggests that individuals’ hindered performance in stereotype threat situations may be due to a temporary decline of working memory capacity.

While interference with working memory capacity is a viable explanation for the underlying mechanism behind stereotype threat, there are still myriad factors that can cause the depletion of working memory ability. To determine the cause of working memory reduction in stereotype threat situations, Johns, Inzlicht, and Schmader (2008) conducted a study to investigate the influence of emotion regulation. Johns et al. had men and women perform a working memory task in one of three conditions – stereotype threat only, stereotype threat with suppression instructions, and stereotype threat with reappraisal instructions. In the stereotype threat only condition, women were told that they were taking a test of “genuine math abilities” that would determine their own strengths and weaknesses in the field of mathematics. In the stereotype threat with suppression condition, participants were also told to act in a way in which an outside viewer would not be able to tell that they were feeling any emotions at all. Lastly, individuals in the stereotype threat with reappraisal condition were also told to think about the test objectively and to not think of it as in any way personally or emotionally

relevant to them. Results indicated that women who were in the stereotype threat only condition and in the stereotype threat with suppression condition scored more poorly than women who were in the stereotype threat with reappraisal condition. This suggests that women who received no instructions on how to regulate their emotions – or women who received instructions to restrain their emotions – were forced to spend cognitive energy to suppress their emotions, thereby taking away cognitive energy from the task at hand. Meanwhile, women who were in the stereotype threat with reappraisal condition spent less cognitive energy on emotion regulation, leaving more cognitive capacity for the working memory task.

Further research on the underlying mechanisms of stereotype threat also suggests that stereotype threat may act in different ways depending on an individual's age (Popham & Hess, 2013). While there is significant evidence that stereotype threat negatively affects the performance of young adults by – in some way or another – diminishing working memory capacity, the same effect is not found in older adults (Popham & Hess). In a study conducted by Popham and Hess, the effect of stereotype threat on working memory ability was assessed, particularly regarding the difference between younger and older adults. Results indicated that older adults seemed to use a “prevention-focused” approach to the working memory task, opting for decreased speed but increased accuracy. While younger adults showed decrements in working memory capacity under the stereotype threat condition, older adults did not suffer a decrease in working memory ability. Popham and Hess suggest that older adults may possess increased emotional regulation abilities, thereby suppressing the negative influence of stereotype threat situations.

Non Performance-Related Consequences

While the immediate effect stereotype threat has on performance is a consequence in and of itself, it is a short-term, situational event. There are, however, lingering consequences of exposure to stereotype threat that lead to a multitude of negative outcomes. Experiencing stereotype threat is a stressful situation that causes anxiety in individuals (Steele & Aronson, 1995). While experiencing some anxiety in situations is unavoidable and inconsequential, continuously encountering high-anxiety situations can lead to negative health outcomes (Blascovich et al., 2001). Blascovich and his colleagues determined that African Americans experience a greater increase in blood pressure than Caucasians do when they are placed in a stereotype threat situation. Blascovich et al. suggest that not only do African Americans experience a heightened physiological response to stereotype threat, but they also experience stereotype threat more often than Caucasians do. Because of this, African Americans could potentially be at an increased risk of negative health outcomes, specifically hypertension.

Exposure to stereotype threat is associated with other negative outcomes as well. Inzlicht and Kang (2010) coined the term *stereotype threat spillover* to describe the phenomenon in which individuals who have experienced stereotype threat are left in a “depleted volitional state” and are thereby less likely to engage in tasks that require effortful self-control. For instance, Inzlicht and Kang determined that individuals who experience a stereotype threat are more likely to react aggressively to negative feedback following completion of the task. This suggests that following a stereotype threat situation, individuals are less able to regulate their emotions (and suppress their aggression) when they are faced with criticism.

In another experiment, Inzlicht and Kang (2010) had individuals perform a task – half of the participants did so in a stereotype threat condition, and the other half did so without the presence of a stereotype threat – and then asked the participants to perform a taste-test of various ice cream flavors. Results indicated that those who experienced the stereotype threat ate significantly more ice cream (measured in weight) than those who did not experience the stereotype threat. This suggests that not only are individuals who experience stereotype threat more likely to display aggression (as demonstrated in Inzlicht and Kang's first experiment), but people are also more likely to engage in overeating after they have experienced a stereotype threat.

Inzlicht and Kang (2010) also investigated the presence of stereotype threat spillover on individuals' decision-making abilities. Utilizing a similar experimental paradigm, Inzlicht and Kang had individuals perform a task that either induced stereotype threat or did not, and then asked individuals to choose between two lottery tickets (one with a high chance of winning a small prize, and one with a low chance at winning a large prize). Results determined that individuals who experience stereotype threat are less able to engage in self-control, opting for the riskier decision (the large prize with low likelihood) rather than deciding on the "more rational" option (the small prize with high likelihood). This suggests that the effects of stereotype threat extend to logic and reasoning capacities as well.

Chronic exposure to stereotype threat can exacerbate negative outcomes and extend the damaging influence of stereotype threat. In fact, Woodcock, Hernandez, Estrada, and Schultz (2012) determined that continuous exposure to stereotype threat can cause "domain disidentification," a phenomenon in which members of a stigmatized

group increasingly place less importance on their performance on tasks associated with a stereotyped domain. For example, women may lose interest in mathematics as a result of numerous experiences of stereotype threat associated with math tasks. Similarly, ethnic minorities may stop putting effort into their schoolwork after experiencing countless stereotype threats in testing situations.

When individuals disidentify with a particular domain, they are further disadvantaged and become at risk of “domain abandonment,” where individuals entirely desert the stereotyped domain (Woodcock et al., 2012). For example, individuals who disidentify with the academic domain experience consequences associated with domain disidentification (e.g., falling further behind in schoolwork) and are placed at an even further disadvantage in the academic setting. After experiencing the negative consequences of domain disidentification, these individuals are pushed further away from success in the domain and are more likely to leave the academic setting. Woodcock and her colleagues suggest that the induction of domain disidentification exacerbates stereotype threat by making the stereotyped domain even more threatening and increasing the individuals’ fear of confirming to the negative stereotype.

Fogliati and Bussey (2013) also demonstrated that exposure to a stereotype decreases motivation for assistance immediately following the experience of stereotype threat. In their experiment, women and men completed a math assessment with or without a stereotype threat. Immediately following the assessment, positive or negative feedback was given to the participants (at random), and the participants were invited to attend a free math tutoring session. Results indicated that women performed more poorly on the math test in the stereotype threat condition and were also less likely to attend the

free math tutorial after receiving negative feedback in the stereotype threat condition. This suggests that stereotype threat may reduce individuals' motivation to improve, corroborating Woodcock et al.'s (2012) theory of stereotype threat induced domain disidentification.

Mitigation of Stereotype Threat in Adults

While many negative outcomes are associated with experiencing stereotype threat, certain factors may moderate the effect of stereotype threat (Inzlicht & Schmader, 2012). Some situational factors can induce particular outlooks in individuals that make them less susceptible to succumbing to stereotype threat. For example, Van Loo and Rydell (2013) recently demonstrated that feelings of power can moderate the negative effects of stereotype threat. In their experiment, women were primed with high power words (e.g., dominate and control) or low power words (e.g., subordinate or dependent) in a sentence-unscrambling task. Following the priming of power, women experienced a stereotype threat situation (in the form of a written statement that indicated the experiment was investigating why men are better than women at math) or did not experience a stereotype threat situation. All of the women then completed a mathematics assessment. Results showed that women who were primed with high power words were unaffected by the stereotype threat manipulation (performing equally in both the stereotype threat condition and no stereotype threat condition), while women who were primed with the low power words performed worse in the stereotype threat condition than they did in the control condition. This suggests that inducing feelings of power may diminish individuals' susceptibility to stereotype threat.

Similarly, the affirmation of positive self-identities can also reduce the negative impact of stereotype threat (Rydell, McConnell, & Beilock, 2009). Rydell and his colleagues demonstrated that introducing a positive self-relevant stereotype can mitigate the damaging effects of exposure to negative self-relevant stereotypes. Specifically, Rydell et al. determined that college women who were exposed to a negative stereotype (women are bad at math) did not suffer a decrease in performance on a math task when they also were exposed to a positive stereotype (college students are good at math). While the exact mechanism behind this phenomenon is not clear, Rydell and his colleagues suggest that individuals who are presented with two self-relevant social identities (i.e., woman and college student), they tend to pick the identity with the most favorable qualities related to a relevant domain, thereby increasing the likelihood of a positive performance on a task within that domain.

While certain situational factors, specifically related to inducing self-affirmation, can decrease the effect of stereotype threat on individuals' performance, it appears that certain individuals may be more resilient to begin with (Régner et al., 2010). Régner and her colleagues investigated individual differences in terms of susceptibility to stereotype threat, specifically focusing on differences in working memory capacity. In their experiment, Régner et al. assessed individuals' working memory capacity (using a reading span task) and then had participants complete a reasoning ability assessment (Raven's Matrices). Half of the participants were told the reasoning ability assessment was a diagnostic measure of logical reasoning ability (which acted the stereotype threat condition), and half of the participants were told that the measure was "diagnostic but gender fair." Results indicated that women with low working memory capacity

performed worse on the Raven's Matrices in the stereotype threat condition than they did in the no stereotype threat condition. Individuals with high working memory capacity, however, were unaffected by the stereotype threat manipulation (performing equally on the Raven's Matrices in both conditions). This suggests that individuals with high working memory capacity may be better able to resist stereotype threat than individuals with low working memory capacity.

Stereotype Boost & Stereotype Lift

While stereotype threat theory aims to explain the damaging effects of negative stereotypes, particularly in relation to performance, a parallel theory exists to describe the beneficial effects of positive stereotypes. *Stereotype boost theory* suggests that individuals who are exposed to positive stereotypes affiliated with their in-group can experience an increase, or "boost," in performance (Shih, Pittinsky, & Ho, 2012). For example, recall the cartography example from early in this chapter. If a stereotype exists that women are better cartographers than men, reminding women of this stereotype before they perform a map-drawing activity could potentially increase their performance on the map-drawing task.

Furthermore, individuals appear to benefit from a stereotype boost without direct mention of the positive stereotype. Specifically, activating an individual's group identity (when a positive stereotype surrounds that group in a particular domain) can increase the individual's performance in that domain. Shih, Pittinsky, and Ambady (1999) demonstrated stereotype boost in an experiment in which Asian American women were assessed on their mathematic ability. Prior to the completion of the math task, participants either had their gender identity activated, their ethnic identity activated, or no

identity activated. Results indicated that women performed worse (compared to the control group) when their gender identity was activated (consistent with stereotype threat theory) and better when ethnic identity was activated (consistent with stereotype boost theory). Similarly, Shih, Pittinsky, and Trahan (2006) found that Asian American women performed worse on a verbal fluency task when their ethnic identity was primed and better on the verbal fluency task when their female identity was primed (compared to a control group that received no identity prime).

While stereotype boost occurs when individuals are exposed to positive stereotypes surrounding their in-group, exposure to negative stereotypes regarding other groups can cause an increase in performance as well (Shih, Pittinsky, & Ho, 2012). Walton and Cohen (2003) coined the term *stereotype lift* to describe the situation in which individuals who are exposed to negative stereotypes about another group (related to a particular domain) experience an increase in performance in that domain. For example, reminding men that a stereotype exists regarding men's mathematic ability (that men are better at mathematics than women) could increase men's performance on a math task through stereotype lift. Though little is known about the mechanisms behind stereotype lift, Walton and Cohen suggest that presenting individuals with negative stereotypes about another group gives them the opportunity to engage in a downward social comparison toward the out-group, thereby increasing their own self-efficacy and decreasing their self-doubt, which allows for better performance on the task at hand.

Stereotype Threat in Children

While the majority of stereotype threat research has focused on young adults, stereotype threat has been demonstrated among children as well. Neuville and Croizet

(2007) assessed the influence of stereotype threat on girls' math performance. In their experiment, third grade boys and girls were randomly assigned to color a neutral picture (that did not activate gender identity) or a picture that was designed to cause the children to identify with their gender. In the gender identity activation condition, boys colored a picture of a boy holding a ball, and girls colored a picture of a girl holding a doll. After coloring the picture, all of the children completed a math assessment. Results indicated that girls who were in the gender identity activation condition performed worse on the math task than girls who did not have their gender identity activated. Boys, however, were unaffected by the gender identity activation (performing equally in both conditions). This suggests that even subtle cues of gender differences can induce a decrease in children's performance on cognitive tasks.

While Neuville and Croizet (2007) utilized a pool of participants all in the same grade, Ambady, Shih, Kim, and Pittinsky (2001) conducted an experiment to determine the effect of stereotype threat across three different child age groups – lower elementary school (kindergarten – grade 2), upper elementary school (grades 3-5), and middle school (grades 6-8). Similar to Shih, Pittinsky, and Ambady's (1999) experiment with Asian American women, Ambady et al. had Asian American girls complete math assessments after activating their ethnic identity, gender identity, or no identity. Consistent with stereotype boost theory, girls who had their ethnic identity activated performed better on the math task (compared to the control group). However, results were inconsistent with regard to stereotype threat theory across age groups. The youngest age group and the oldest age group both produced results consistent with stereotype threat theory (as girls performed worse when their gender identity was activated). The middle age group,

however, performed better when their gender identity was activated. Although these results were surprising, Ambady et al. suggest that the findings are in line with developmental research that suggests that children who fall in this age group (8-10 years old) are quite prejudiced, thinking extremely highly of their own gender. This superiority complex regarding one's own gender explains why children of this age may be less likely to experience stereotype threat related to gender identity, as their opinion of their own gender is quite elevated compared to their younger and older peers.

Mitigation of Stereotype Threat in Children

In the same way that a biased gender identity appears to protect children against stereotype threat (at least in the context of the 8-10 year olds in Ambady et al.'s study), other factors can decrease children's susceptibility to stereotype threat as well. For example, mother's beliefs about gender stereotype appear to have an effect on children's tendency to confirm gender stereotypes (Tomasetto, Alparone, & Cadinu, 2011). Tomasetto et al. assessed girls' performance on a math task and also evaluated mothers' "endorsement" of gender stereotypes. Results indicated that girls whose mother's rejected gender stereotypes were unaffected by gender identity activation, whereas girls whose mothers endorsed gender stereotypes were negatively affected by gender identity activation (succumbing to stereotype threat). This suggests that parents who reject gender stereotypes – and do so in a way that reaches their children – may protect their children from the negative effects of stereotype threat in particular domains.

Research has also indicated that measures can be taken in the classroom setting to reduce the effect of stereotype threat (Bowen, Wegmann, & Webber, 2013). In a longitudinal study, Bowen et al. concluded that self-affirmation techniques may be an

effective strategy for diminishing the negative effects of stereotype threat. In their experiment, participants (who belonged to a stigmatized group in terms of academic performance) wrote self-affirming essays or neutral essays. Results indicated that those who wrote self-affirming essays suffered a lesser decline in Social Studies grades throughout the year compared to individuals who wrote a neutral essay. This suggests that self-affirming techniques mitigate stereotype threat in children as well as adults.

Present Study

Based on stereotype threat theory, girls in our study should suffer a decrease in math performance, regardless of the doll condition. Based on past research (e.g., Neuville & Croizet, 2007), all of the dolls could act as a gender-activating cue, thereby making girls aware of their gender identity (and negative stereotypes associated with their gender). Because of the negative stereotype associated with girls' math performance, girls in our study – who played with gender-activating stimuli – would be expected to perform more poorly on the math task. However, performance on the verbal assessment should not be negatively affected by the doll exposure (according to stereotype threat theory). In fact, according to stereotype boost theory, girls should perform better on the verbal task after being exposed to any of the dolls. Stereotype threat theory is not the sole model regarding gender cues' effects on performance, however.

CHAPTER 4 – SEXUALIZATION OF GIRLS AND WOMEN

In western culture, recent years have been marked by a dramatic increase in what academics and members of the media have labeled *sexualization* (Hatton & Trautner, 2011). This rise in the frequency of sexualization – particularly the sexualization of women – amassed concern from scholars, which ultimately led to the call for an APA Task Force dedicated to compile information regarding the sexualization of women and girls. In 2010, the Task Force's report on the sexualization of girls was released, providing valuable insight into the effects of the overwhelming presence of sexualization in today's society.

According to the APA Task Force (2010), *sexualization* occurs when “a person's value comes only from his or her sexual appeal or behavior, to the exclusion of other characteristics,” “a person is held to a standard that equates physical attractiveness (narrowly defined) with being sexy,” “a person is sexually objectified – that is, made into a thing for others' sexual use, rather than seen as a person with the capacity for independent action and decision making,” and/or “sexuality is inappropriately imposed upon a person” (p. 1). Utilizing this definition, it is apparent that examples of sexualization in today's culture are not challenging to find. Particularly for women, the scope of sexualization is vast (Hatton & Trautner, 2011).

Sexualization of girls and women can occur within three separate, but interrelated, domains: societal contributions, interpersonal contributions, and self-sexualization (APA Task Force, 2010). Societal contributions include the cultural norms, expectations, and ideals that are widely held and expressed largely through the media. The APA Task Force

posits that a culture can be “infused” with sexualized representations of girls and women, which reinforces the notion that such sexualization is normal and appropriate.

Interpersonal contributions, meanwhile, refer to the myriad of instances in which girls and women are treated as sexual objects by family, peers, and other members of society (APA Task Force, 2010). Girls’ and women’s relationships take place in the context of a culture that endorses sexualization, and societal influences – particularly the media – shape way in which interpersonal relationships function. Parents, friends, teachers, and peers alike are all affected by constant exposure to sexualized representations of girls and women. Consequently, individuals may – inadvertently or knowingly – express support for societal standards of sexualization. That is, girls and women are often *encouraged* to be sexualized objects by their peers and others, receiving praise (often in the form of compliments) when they adhere to societal standards related to sexualization (APA Task Force).

Because girls and women learn that adopting a sexualized appearance and engaging in sexualized behaviors is valued and rewarded by society, they are likely to internalize these ideals and engage in *self-sexualization*, a process in which girls view themselves, and treat themselves, as sexual objects (Fredrickson et al., 1998). Girls learn to want what is sexy – e.g., sexualized clothes and make-up – and train themselves to operate in ways that coincide with societal standards of sexualization (APA Task Force, 2010). According to the APA Task Force, girls engage in self-sexualization when a large component of their identity is related to their sexual appeal, when they compare their sexiness to a narrow standard for physical attractiveness, and/or when they think of themselves in an objectified manner. When girls develop self-sexualization tendencies,

they begin to see themselves solely as sexual objects, rather than complex individuals with numerous qualities and capabilities. Engaging in the process of self-sexualization is particularly damaging for girls and women, as they limit themselves (by focusing largely on physical appearance concerns) and learn to underestimate their own worth and devalue their other attributes and abilities.

The Thin Ideal – A Comorbid Phenomenon

Included in the APA's definition of sexualization is the situation in which a person is held to a standard of beauty that is narrow and stringent (APA Task Force, 2010). In western culture, a large emphasis is placed on weight and body image in terms of evaluating individuals' physical attractiveness (Penny & Haddock, 2007). Despite the increasing prevalence of obesity in this nation, it is still looked upon as a highly negative quality and is associated with negative attributions (Penny & Haddock, 2007; Collins, 1991; Dohnt & Tiggemann, 2006). Overweight individuals are commonly associated with negative characteristics and personality traits, and these stereotypes are prevalent among people of all ages (Bell, Kirkpatrick, & Rinn, 1986). People who are overweight are therefore subjected to stereotype threats and are often judged harshly solely because of their weight.

The thin ideal, which perpetuates these negative stereotypes regarding obesity, is a recurring theme and is propagated by the media, peers, and various social influences (APA Task Force, 2010). Dohnt and Tiggemann (2006) investigated the influence of the media on girls' body satisfaction and noted that the unrealistic standard for thinness expressed in the media had a detrimental effect on girls' self-esteem and body image. As exposure to media increases, so does exposure to the thin ideal. Therefore, because of the

pervasiveness of media influences, weight stigma is being perpetrated via reinforcement of the thin ideal.

The prevalence of the thin ideal reinforces both negative stereotypes regarding obesity and positive stereotypes toward thinness. A correlational study conducted by Carels and Musher-Eizenman (2010) showed that individuals with a bias against overweight individuals are also more likely to report a preference for thin individuals. The researchers ascertained that individuals who have globally negative attitudes toward obesity, and believe that weight is highly controllable, are more likely to judge obese individuals more negatively and thin individuals more favorably. Additionally, results indicated that individuals with high perceptual reliance (high propensity to judge individuals based on their physical appearance) judge obese individuals in a more negative fashion and are more likely to be pro-thin than individuals with low perceptual reliance. This suggests that the same factors that influence an anti-fat bias also promote a thin bias.

While exposure to the thin ideal affects both genders, research indicates that it has more of an effect on the female population (Collins, 1991). Because of the ideals and stereotypes that are propagated by society – especially by the media – women are encouraged to self-scrutinize and compare themselves to these unrealistic criteria (Dohnt & Tiggemann, 2006). According to Collins, men are typically more content with their body image, reporting that they are relatively satisfied with their current weight or only wish to be slightly thinner. Women, however, tend to report that they feel they are significantly above their ideal weight (Collins). This suggests that the thin ideal seems to have more of an effect on women, who are more likely to be dissatisfied with their bodies

and feel pressured by the thin ideal. Previous research has also demonstrated that, because of media influences, the standard for thinness is more likely to be applied to women, reinforcing the notion that thin is the ideal for women (Dohnt & Tiggemann, 2006).

Gender Role Development

Because the scope of sexualization appears to be greater for women compared to men – or, at the very least, appears to have a greater effect on women compared to men (Fredrickson et al., 1998) – it is important to understand the basis of this gender difference. At the crux of the sexualization phenomenon is the notion of gender roles, specifically regarding the drastically different standards that are “set” for men and women. Gender stereotypes that our society has adopted and reinforced affect how individuals develop the characteristics they take on and the actions they perform (Barg, Chen, & Burrows, 1996). Unknowingly, a majority of individuals are conforming to a set of gender roles that society has deemed appropriate (Gupta & Turban, 2008).

Gender roles are learned in a variety of ways. They are taught by family, in schools, in social groups, and through the media (McLean & Kalin, 1994). The acquisition of gender roles is a lifelong process in which individuals learn what traits or characteristics our society considers appropriate – or inappropriate – for each gender (Gupta & Turban, 2008). Gender roles are socially constructed, as societal expectations dictate what it means to be female or what it means to be male (Jabes, 1980). Because of this, women and men are socialized into different types of roles. Women tend to be socialized into expressive roles – nurturing and emotionally supportive roles – and men

tend to be socialized into instrumental roles – task-oriented roles (Rudman & Phelan, 2010).

Naturally, gender socialization contributes to individuals' career aspirations, which in turn shapes various fields into being polarized in terms of gender. According to Rudman and Phelan (2010), men tend to be in positions of power – positions that are thought to require precision, forcefulness, and quick thinking. Entrepreneurship, engineering, and forestry, for example, are fields that are dominated by men. Meanwhile, women tend to be in positions that are described as requiring human contact or emotional appeal. Roles such as nurses, childcare workers, and secretaries are stereotypical expressive roles (Rudman & Phelan). This trend in the work place leads to gender stratification, which perpetuates many of the gender stereotypes in our society (Rudman & Phelan).

As gender stereotypes are widely held in society, individuals conform to them almost unconsciously. Gender stereotypes influence attitudes people have, behaviors they perform, and actions they carry out without conscious awareness (Bargh, Chen, & Burrows, 1996). Individuals often seek to perform activities that are positively associated with their gender, and also tend to avoid activities that are not associated with their gender (Rudman & Phelan, 2010). Gender stereotypes that are well-known influence people even when a reminder of the stereotype is not present (Gupta & Turban, 2008).

Because of the extensive presence of gender stereotypes and the impact they have on societal gender roles, certain psychological traits are universally associated with men, just as certain traits are universally associated with women. Traits such as dominance, confidence, ambition, and rationality are associated with men, while traits such as

generosity, compassion, empathy, and irrationality are associated with women (Garcia, Calcáneo, Soto, & Rodarte de Lara, 2007).

Much like gender stereotypes regarding psychological traits are salient in our society, gender stereotypes regarding physical traits are also abundant. As such, certain physical traits have come to be commonly associated with men, while other physical traits are associated with women. These gender stereotypes regarding physical characteristics dictate what it means to be physically attractive, as they shape standards or norms for physical beauty.

While there are narrow standards for physical attractiveness for each gender, these standards are quite different for men and women (Salusso-Deonier, Markee, & Pedersen, 1993). Some qualities are valued for both genders (e.g., leanness), but most ideals are different for women than they are for men. For example, the ideal for women includes an “hour-glass” shape (i.e., a large bust, small waist, and large hips), and both men and women show a preference for women who exemplify this ideal. Meanwhile, the standard for men includes a lean, muscular build with a large frame and broad shoulders (Salusso-Deonier et al.).

Because the ideal body types are different for women and men, each gender contends with a different set of demands associated with the pressure to attain their respective gender stereotyped physical ideals. However, despite the differences in the ideals for each gender, the consequences for failing to adhere to physical expectations are severe for both women and men (Salusso-Deonier et al., 1993). Likewise, the consequences for violating psychological gender stereotypes are damaging as well (Moss-Racusin, Phelan & Rudman, 2010). In fact, when gender stereotypes - regarding

both psychological and physical characteristics – are broken in society, there can be strong backlash against the perpetrator(s) that cause harm across a variety of domains.

According to Moss-Racusin et al. (2010), men who stray from stereotypic expectations are perceived as being less confident, less ambitious, weak, and uncertain. Their research suggests that men who break the norms are immediately associated with traits consistent with a low economic status, such as weakness and indecisiveness. The fear of being perceived in such a negative light pressures men to conform to societal expectations and reinforces gender stereotypes (Moss-Racusin et al.).

Likewise, Rudman and Glick (2001) determined that women are equally coerced into adhering to gender stereotypes, noting that women who deviate from gender norms are penalized as well, especially in the workplace. Specifically, women who express agency (thereby violating the gender stereotype of feminine “niceness”) are more likely to be discriminated against for managerial positions, despite the fact that agency is a valued quality for managers. According to Rudman and Glick, this situation depicts the ultimate “Catch-22” for women – As agency is required of leaders, women are viewed as “unfit” to lead if they are not agentic; however, women also experience backlash from expressing the gender “atypical” quality of agency.

Women experience repercussions when they break physical ideals as well as psychological expectations. Specifically when women do not fulfill the cultural ideal of thinness, the consequences are vast (APA Task Force, 2010; Penny & Haddock, 2007; Salusso-Deonier et al., 1993). While both men and women experience societal backlash from being overweight, the effects are greater for women – that is, overweight women are viewed in a more negative fashion than overweight men (Penny & Haddock). And, as

gender roles and expectations – regarding thinness and other physical characteristics – are constantly reinforced via multiple avenues, the pressure to conform is relentless.

Mechanisms of Sexualization

According to the APA Task Force (2010), sexualization operates - and is reinforced – through many different mechanisms. Similarly, many psychological theories seek to explain the vast scope of the sexualization of girls and women. *Socialization theories* (e.g., social learning theory and gender schema theory) posit that girls and women learn gender-appropriate roles (which include the presence of sexualization) by observing others and striving to fulfill those gendered expectations because of the rewards associated with doing so. *Sociocultural theories* postulate that girls and women learn appropriate gender roles (including appearance and behavior components) through culture, and girls are limited by the culture in which they exist. That is, only certain options are made available to girls because of cultural beliefs, values, and ideals. Therefore, in a culture of sexualization, girls are only exposed to sexualized ideals.

Much like girls learn gender roles from cultural and social vectors, girls learn to accept the overwhelming presence of sexualization as a cultural norm. In fact, *cognitive theories* argue that gender stereotypes (including sexualization and objectification of women as an “appropriate” norm) operate automatically in both women and men (APA Task Force, 2010). Because of this, individuals may not even be consciously aware of exposure to sexualized depictions of women.

Because of the overpowering presence of sexualization, individuals are continuously exposed to sexualized representations of women via a multitude of media influences. According to the APA Task Force (2010), media content is both a reflection

of culture and a contributor to culture. Because sexualization has manifested as a cultural norm, sexualized depictions of women are apparent in numerous forms of media.

Television

Viewers of television shows are exposed to an abundance of sexualized images of women (APA Task Force, 2010). While most television shows feature more male characters than female characters, female characters are significantly more likely to be depicted in a sexualized fashion, particularly in terms of physical attractiveness and provocative dress (Eaton, 1997). Ward (1995) also found that sexual comments are persistent in television, and sexual remarks disproportionately sexually objectify women. These sexual remarks are largely directed toward women's bodies – especially women's breasts – and the remarks are overwhelmingly delivered by men (Lampman et al., 2002).

Aside from verbal sexual objectification of women, television shows also depict non-verbal forms of sexualization. Lampman and her colleagues (2002) classify ogling, leering, and staring at women as non-verbal forms of sexualization, and again these non-verbal actions are more often carried out by male characters. Because many television shows portray these forms of sexualization as normative, cultural standards about the appropriateness of sexually objectifying women are reinforced (APA Task Force, 2010).

Music

While content analyses of song lyrics in terms of the sexualization of women have not yet been performed, the APA Task Force (2010) notes that it is evident that today's popular music is laden with sexualization. In an analysis of adolescents' media consumption, Brown, L'Engle and Pardun (2005) found that sexual content appeared more frequently in adolescents' music choices compared to their television, movie, or

magazine choices. In fact, finding examples of current music that contain sexualized messages is not a challenging task. While the choices are nearly endless, these examples – gathered from the Billboard Top 100 songs of 2013 – demonstrate the sexualization of women that occurs in today's music:

- *“OK, now he was close, tried to domesticate you/But you're an animal, baby it's in your nature”* (Robin Thicke, “Blurred Lines,” 2013)
- *“Pose for your class picture/Now kiss my a** if you hating/I'm getting a** or I'm skating, bitch”* (Lil Wayne, “Love Me,” 2013)
- *“My body is your party, baby/Nobody's invited but you, baby/I can do it slow now/Tell me what you want.”* (Ciara, “Body Party,” 2013)

These three examples demonstrate the sexualization and degradation of women that is present in many song lyrics. All three of these songs describe the female body as a sexual object designed to deliver male pleasure in one form or another. They also demonstrate a power differential that highlights gender inequality and reinforces gender stereotypes.

While limited data have been collected regarding the sexualization of women in song lyrics, a fair amount of research has investigated the content of music videos in terms of sexualization. The APA Task force (2010) reported that content analyses have determined that 44-81% of music videos contain sexual imagery. Andsager and Roe (1999) noted that women are more frequently dressed in provocative clothing compared to men. Similarly, Arnett (2002) concluded that women typically serve as “decorative objects” in music videos, dancing and posing rather than playing music instruments. Furthermore, women are often shown in poses that emphasize their bodies, particular

body parts (e.g., breasts), and sexual readiness (i.e., posed in positions that suggest the desire for sexual activity) (Vincent, Davis, & Boruskowski, 1987).

Aside from the presence of women as dancers and decorative objects, the artists themselves are also often sexualized in their music videos (APA Task Force, 2010). Andsager and Roe (1999) posit that female artists – young artists, in particular – are encouraged to present themselves in a more “mature” or “cutting-edge” fashion by dressing more provocatively and more “adult-like.” Musicians like Britney Spears, Christina Aguilera, and Jennifer Lopez provide examples of this phenomenon. According to Andsager and Roe, this sort of tactic draws more attention to the artists’ physical appearance and sexuality and takes focus away from the artists’ musical talent, thereby reinforcing the notion that these female artists are sexual objects rather than talented musicians.

Magazines

According to the APA Task Force (2010), magazines act as another vector of sexualization, as a dominant theme of magazines – especially magazines designed for female audiences – is the presentation of women as sexually desirable objects. Furthermore, women’s magazines stress the importance of presenting oneself as a sexual object in order to gain male attention. Women’s magazines describe to girls and women the way(s) to dress, style their hair, and apply makeup in order to capture the attention of men (APA Task Force).

Sexualization is not limited to women’s magazines, although the expression of sexualization is different for magazines that are not designed specifically for a female audience. Hatton and Trautner (2011) conducted a content analysis of *Rolling Stone*

magazine to determine if the frequency of sexualization has changed over time and if the occurrence of sexualization differs by gender. Hatton and Trautner analyzed the images on the magazine's cover from 1967 to 2009 (931 images total) and determined that sexual representations of women have increased significantly over time (from 1967 to 2009). However, sexual representations of men have not significantly increased over time. Furthermore, Hatton and Trautner noted that the majority of the images of men (across time) were nonsexualized, while the majority of the images of women were sexualized.

In addition, Hatton and Trautner (2011) discovered that the intensity of the sexualization of men and women (when sexualization does occur) is quite different. In fact, Hatton and Trautner introduced a new category of *hypersexualization* to capture the difference in the degree of sexualization across images. From the 1960s to the 1990s, there was a rise in the percent of sexualized images of women on the cover of *Rolling Stone*. With the addition of the new classification of hypersexualization, a decrease in sexualized images of women was actually observed from the 1900s to the 2000s. However, a significant increase in hypersexualized images of women was observed from the 1980s to the 2000s. This suggests that women are becoming sexualized to a greater degree – that is, the intensity of the sexualization of women has increased over time. Very few male covers were classified as hypersexualized, however, demonstrating that the increase in the intensity of sexualization is limited to women.

Videogames

While many individuals view videogames as a pastime that children and adolescents primarily engage in, videogames are actually played by adults as well. In fact, the average age of videogame players is 35 years old (Behm-Morawitz & Mastro,

2009); this suggests that playing videogames is no longer a fleeting childhood interest – rather, it is a pastime that is engaged in throughout the lifespan.

Because many different age groups are exposed to videogames, the manner in which women are depicted in these games affects the attitudes and beliefs of a vast array of individuals. Miller and Summers (2007) conducted a content analysis of videogames and noted that the depiction of women in videogames largely falls in line with the portrayal of women in other media forms, specifically regarding sexualization. In their content analysis, male characters outnumbered female characters significantly (in 49 games, 282 male characters were present compared to 53 female characters). Despite female characters being highly underrepresented in videogames, they are significantly more often hypersexualized when they are present, dressed in revealing clothing and portrayed as objects of sexual desire (Miller & Summers).

Aside from the physical appearance of female videogame characters, the roles that female characters perform contribute to their sexualization. Miller and Summers (2007) determined that the vast majority (73.5%) of female videogame characters are not playable, meaning they cannot be chosen as the protagonist (main character who is played by the game), thus reinforcing the female characters' subordinate status in the games. Additionally, female characters are significantly more likely than men to be depicted as sexual objects rather than beings with purpose or action (Miller & Summers). Likewise, women in videogames are significantly more likely to be depicted as victims or prizes compared to men (Provenzo, 1991).

Advertising

Television commercials are large contributors to the sexualization of women (APA Task Force, 2010). In television commercials, women are far more likely than men to be shown in a state of “undress” or depicted as sexual objects (Lin, 1997). The APA Task Force notes that beer commercials are one of the biggest offenders, as 75% of beer ads feature women in sexualized roles.

Print advertisements – particularly magazine advertisements – also actively participate in the sexualization of women (APA Task Force, 2010). The APA Task Force determined that women in magazine advertisements are often three times more likely than men to be depicted as decorative objects (e.g., draped over a car to enhance the desirability of the car). When women are displayed in this fashion, they are portrayed as extensions of the product rather than active consumers of the product, thereby reinforcing the notion that women are not functioning, independent actors.

Women are not the only group sexualized via advertising. Despite advertisers’ ambitions to avoid directly sexualizing young girls, O’Donohue, Gold and McKay (1997) suggest that advertisements indirectly sexualize girls, noting that girls often appear in advertisements with a sexualized adult woman, wearing matching clothing or posed in a similar (sexualized) fashion. The APA Task Force (2010) also notes that adult women are often “dressed down” to look like little girls – wearing a schoolgirl outfit, for example – while young girls are often “dressed up” to look more adult. This type of advertising is dangerous, as it blurs the lines between childhood and adulthood and inappropriately places sexuality upon young girls.

Products

While advertisements may not be directed at children, an array of products is designed specifically for child consumption. Some of these products, intended for children, deliver messages of sexualization. Dolls like Barbie have received a great deal of attention on this front, as they present an unrealistic standard of beauty to children (Dittmar, Halliwell, & Ive, 2006). The APA Task Force (2010) determined, however, that Barbie is no longer the only offender. The Task Force specifically notes the emergence of a new series of dolls – “Bratz,” – that is highly sexualized. The Bratz dolls are similar to Barbie in terms of physical shape – large breasts, impossibly small waist – but their faces are quite different. The Bratz dolls feature unrealistically large eyes with excessive amounts of makeup, and their lips are pursed in sexy fashion rather than positioned in a smile. The clothing options available for the Bratz dolls are also highly sexualized – miniskirts, fishnets, and high heels are all common articles of clothing for the dolls. The APA Task Force posits that exposure to this type of sexualization could be damaging for children, particularly as the Bratz line is marketed for girls who are four to eight years old – girls who are still learning gender roles and what is normative for girls and women.

Dolls are not the only product that convey messages of sexualization to young girls. The clothing choices that are available for girls also facilitate the sexualization process (APA Task Force, 2010). In fact, “sexy” clothing is increasingly available in youth and teen sizes, and clothing stores designed specifically for children are offering more adult options for their young clientele. Sexy lingerie – e.g., thong panties and lacy bras and camisoles – are now being sold to, and marketed for, young girls. Cosmetics

companies also target young girls, manufacturing products that are designed to appeal to children rather than adult women. Because of this, girls are encouraged to engage in behaviors and actions that enhance their physical appearance, rather than focusing on other attributes (APA Task Force).

Effects of Sexualization

Adults

Because of the ideals and gender stereotypes that are perpetuated in society, largely via the media, women are encouraged to self-scrutinize and compare themselves to unrealistic standards. According to objectification theory (Fredrickson et al., 1998), adult women engage in self-objectifying behaviors that produce shame about their bodies and negatively affect their mental abilities. The process of self-objectification is likely to be developed over prolonged exposure to unrealistic standards of beauty and near-constant sexualization of women.

Fredrickson and her colleagues first introduced the concept of objectification theory in 1998. In their seminal study, Fredrickson et al. sought to discover the effects of sexualization, noting that American culture is overwhelmingly saturated with sexualization. In fact, Fredrickson et al. argued that sexual objectification is “always present,” as individuals constantly assess each others’ bodies and treat individuals as body parts rather than complete humans with intricate identities. To determine the influence of the sexualization of women, Fredrickson et al. performed two experiments. In the first, female participants completed a body shame measure and a “taste test” while wearing either a swimsuit or a sweater. In accordance with objectification theory, women who were in the swimsuit condition performed reported more body shame than women

who were in the sweater condition. Additionally, women who were in the swimsuit condition ate fewer cookies during the taste test than women in the sweater condition, although both groups reported equal liking of the cookies. These findings support objectification theory, suggesting that when individuals are placed in a sexualized condition (e.g., asked to wear a swimsuit) they self-scrutinize, focus more on their bodies and, furthermore, feel worse about their bodies.

In Fredrickson et al.'s (1998) second experiment in their seminal study, the same paradigm was utilized and extended. While the first experiment contained only female participants, the second experiment included male participants as well (who were in either a swimsuit (i.e., swimming trunks) condition or a sweater condition). Male and female participants completed the same body shame measure and taste test from the first experiment, but they also completed a measure of trait self-objectification as well as a math test. As in the first experiment, women in the swimsuit condition reported higher body shame and consumed less food than women in the sweater condition. Men in the swimsuit condition, however, did not report higher levels of body shame than men in the sweater condition, nor did they consume less food than men in the sweater condition. Additionally, women in the swimsuit condition performed worse on the math test than women in the sweater condition. Men performed the same on the math test in both conditions, however. Finally, women in the swimsuit condition reported higher levels of trait self-objectification than women in the sweater condition. Men reported the same level of trait self-objectification in both conditions, however. These findings indicate that sexual objectification causes an increase in self-objectification – which in turns produces

an increase in body shame – and a decrease in cognitive abilities for women, but not for men.

Further research has continually supported objectification theory, demonstrating detrimental outcomes for sexually objectified women. Quinn et al. (2006) utilized Fredrickson et al.'s original paradigm to determine the effect of sexualization on women's cognitive abilities in the form of performance on a modified Stroop task. Following Fredrickson et al.'s procedure, Quinn et al. asked participants to try on either a one-piece swimsuit or a sweater and then complete a body shame measure and the modified Stroop task. In agreement with objectification theory, women who were in the swimsuit condition reported higher body shame and did not perform as well on the modified Stroop task (i.e., women's reaction times were longer when they were placed in a sexualized condition). This demonstrates that sexualization slows women's cognitive processing, thereby inhibiting their processing speed.

To extend the application of objectification theory, Calogero (2004) performed an experiment that assessed the influence of anticipating a male or female gaze on women's appearance concerns. Female participants were first asked to complete a demographic questionnaire and a measure of self-objectification. The participants were then either told that they would be interacting with a stranger (either male or female) or were not told any information about interacting with a stranger (in the control group). The participants were then asked to complete the last three questionnaires (body shame, social physique anxiety, and dietary intent measures) while they waited for the stranger to be ready (or were just asked to complete the questionnaires if they were in the control group). Results indicated that women who anticipated interacting with a male stranger reported higher

body shame and social physique anxiety compared to participants who expected to interact with a female stranger or no stranger. This suggests that anticipating a male gaze increases women's appearance concerns, thereby acting as a mechanism of objectification.

While a significant amount of research has demonstrated that exposure to sexualization can have a damaging impact on body satisfaction, further research has demonstrated that experiences of sexualization may influence eating behavior as well. In a survey study, Moradi, Dirks, and Matteson (2005) demonstrated correlations between sexual objectification experiences and eating disorder symptoms, indicating that women who reported experiencing sexual objectification were also more likely to report symptoms of eating disorders. A positive correlation was also found between sexual objectification experiences and internalization of beauty standards, body surveillance, and body shame. This suggests that an internalization of beauty standards (i.e., media representation of the ideal figure) may influence women's ideas about their own bodies and thereby influence their propensity to self-objectify.

While experiences of sexualization are damaging for body and appearance concerns, sexual objectification can also be dehumanizing. When women are sexually objectified, they are reduced to their body parts and are liable to be dehumanized (Puvia & Vaes, 2013). In fact, a cognitive recognition bias exists that facilitates this dehumanization process for women, but not for men. Gervais et al. (2012) determined that both men and women are able to recognize parts of women's bodies as female faster than they can recognize parts of men's bodies as male. This finding indicates that perceivers – both male and female – see women in a manner that is consistent with

objectification theory. That is, women are reduced to their body parts, particularly their sexual body parts. Furthermore, this bias exists at a basic cognitive level (i.e., cognitive processing).

The effects of sexualization are immediate and pervasive, but there is evidence to suggest that the negative outcomes linger past the experience of sexualization. Quinn, Kallen, and Cathey (2006) revisited Fredrickson et al.'s paradigm, but they altered it slightly to determine whether self-objectifying thoughts continued after women who experienced sexualization were removed from the sexualized situation. Following Fredrickson et al.'s design, participants tried on either a swimsuit or a sweater and completed a cognitive task and a body shame measure. However, participants also performed an additional task (a free response thought listing task) after they had re-dressed in their own clothes. Results indicated that women who were in the sexualized condition listed significantly more body-related words in the free response task than women who were in the non-sexualized condition. Additionally, this effect was mediated by shame, as women who reported more shame were more likely to report body-related words in the free response task. This suggests a lingering effect of sexualization, as women who experience sexualization are more likely to continue to have body-focused thoughts after they are removed from the sexualized condition.

Children

While children's experiences of sexualization are different than adult's, they are just as damaging. Machia and Lamb (2009) argue that girlhood is rapidly becoming sexualized, largely through the media. Specifically, many advertisements feature adult women who are dressed as young girls yet are highly sexualized. This sexualization of

girlhood is problematic for a multitude of reasons and places sexuality inappropriately on children.

In a longitudinal study, Dohnt and Tiggemann (2006) determined that peer and media influences affect children as young as five years old. Dohnt and Tiggemann assessed 5-8 year old girls' self-esteem, body satisfaction, peer influences, media influences at two different times, with one year in between the two measurements. Results indicated that perception of peers' desire for thinness (at time 1) was a predictor of girls' own desire for thinness, appearance satisfaction, and self-esteem (at time 2), such that girls who perceived that their peers wanted to be thinner (at time 1) expressed higher desire for thinness, lower appearance satisfaction, and lower self-esteem at time 2. Girls' own desire for thinness (at time 1), meanwhile, predicted self-esteem (at time 2), such that girls who expressed higher desire for thinness (at time 1) reported lower self-esteem at time 2. Additionally, media influences (at time 1) predicted appearance satisfaction (at time 2), with higher rates of appearance-focused media consumption resulting in lower appearance satisfaction. These results indicate that peers and media transmit appearance-related ideals (e.g., the thin ideal) that affect how girls feel about their own bodies.

In an experimental study, Durkin and Paxton (2002) investigated the direct effects of exposure to sexualized advertisements on girls' body satisfaction. Prior to the experimental manipulation, Durkin and Paxton measured body dissatisfaction, self-esteem, physical appearance comparison tendency, internalization of the thin ideal, depression, and identity confusion. One week later, participants, who were girls in grades 7 and 10, viewed advertisements that featured either "idealized" women (i.e., slim and

“sexy”) or accessories (e.g., handbags, shoes). After viewing the advertisements, participants completed the set of measures once more. Girls in the sexualized advertisement condition experienced an increase in depression and a decrease in body satisfaction after viewing the images. Additionally, internalization of the thin ideal and appearance comparison tendencies predicted the decrease in body satisfaction (i.e., girls who reported high internalization of the thin ideal and high appearance comparison tendencies suffered a greater decrease in body esteem following exposure to the idealized images). This suggests that, while all girls were affected by exposure to the sexualized stimuli, certain factors – e.g., internalization of the thin ideal and tendency to engage in appearance comparisons – may influence the extent to which girls are affected by exposure to sexualized images.

Aside from influencing girls’ feeling about their own bodies, sexualization can also influence others’ perceptions of girls. Graff, Murnen, and Smolak (2012) sought to investigate the effect of girls’ clothing choices on the perceptions of girls. In their experiment, adult women viewed pictures of the same girl (who participants were told was in fifth grade) with either childlike clothing (i.e., jeans and a t-shirt), mildly sexualized clothing (i.e., a dress with a moderate length), or highly sexualized clothing (i.e., a very short dress). After viewing the picture of the girl, participants rated her on a variety of characteristics (including masculine, feminine, and “status” traits). Results indicated that the highly sexualized girl was rated lower in masculine characteristics (e.g., capable, competent, determined) and lower in status traits (e.g., morality and self-respect). There was no difference between the mildly sexualized girl and the childlike girl, however. This suggests that sexualization of girls affects perceptions of their traits,

specifically following the stereotype that “sexy” (adult) women are not competent or intelligent (Graff et al.).

While adult women in Graff et al.’s experiment rated sexualized children as less competent and less moral than non-sexualized children, girls still appear to have an aspiration to be “sexy.” Starr and Ferguson (2012) investigated girls’ tendencies to self-sexualize utilizing paper dolls. Girls (ages 6-9) were given two paper dolls, one of which was non-sexily dressed and one of which was sexily dressed. Girls were asked which doll looked the most like them, which doll they would like to look like, which doll they thought was more popular, and which doll they would like to play with. (The girls received a different set of two paper dolls for each question, with one being sexualized and one being non-sexualized.) Results indicated that girls reported they felt they looked like the non-sexualized doll, but they wanted to look like the sexualized doll, they thought the sexualized doll was more popular, and they wanted play with the sexualized doll rather than the non-sexualized doll. This suggests that although girls may not view themselves as “sexy,” they may aspire to be sexy, perhaps because of the perceived social benefits of being sexy (according to the girls’ responses).

In accordance with Starr and Ferguson’s (2012) findings, many girls seek to engage in play with sexualized stimuli, especially dolls. However, doing so may lead to negative outcomes. Dittmar, Halliwell, and Ive (2006) investigated the effect of exposure to different kinds of dolls on girls’ body image. In their experiment, girls (ages 5-8) read a picture book that had images of either Barbie, Emme (a doll with a more attainable body shape), or neutral images (pictures that did not include a doll). After reading the story, the girls completed two body esteem measures – body satisfaction and desire to be

thin. Results demonstrated that younger girls (ages 5½ - 7½) were negatively affected by exposure to Barbie, as young girls in the Barbie condition reported lower body esteem and higher desire to be thin than girls in the other two conditions. Older girls (ages 7½ - 8½), however, were unaffected by the experimental manipulation. This suggests that exposure to Barbie is uniquely damaging (as exposure to the other doll did not negatively influence body esteem), and the negative effect of Barbie is age-related. Dohnt and Tiggemann's results suggest that exposure to sexualized and idealized dolls is especially damaging for young girls.

Present Study

While a significant amount of research has investigated the effect of sexualization on women's body satisfaction and mental abilities, the effect of these factors on girls' self-esteem and math and verbal performance is highly understudied. Girls' experiences of these factors is likely to be similar – and just as damaging to their self-esteem and mental abilities – at younger ages, especially for young girls as they begin to form ideas about their sense of self, sense of worth, and competence (Harter, 1999). However, because of a lack of research in this area, the extent of the effects of sexualization on girls' cognitive abilities and self-esteem has yet to be determined.

Additionally, the research that has been conducted regarding girls' experiences of sexualization has primarily focused on media influences – advertisements in particular. The effect of dolls on girls' self-esteem is understudied, and study of dolls in general has largely been focused around Barbie. However, other doll lines have arisen that are even more sexualized than Barbie, and the influence of other types of dolls has been neglected.

The present study was designed to determine whether sexualization influences girls' body satisfaction and performance on math and verbal tasks. The study examined the role of sexualization in females (ages five to eight), assessing the effect of sexualized and objectified stimuli (in the form of fashion dolls) on girls' body esteem and cognitive performance. The study sought to investigate whether exposure to sexualized dolls influenced girls' ideas about their own body and their ability to perform cognitive tasks.

The study manipulated exposure to one of three dolls that were physically similar but represented different levels of sexualization: no sexualization (in the form of Corolle Camille doll), moderate sexualization (in the form of a Barbie Fashionista doll), and high sexualization (in the form of a Bratz doll). The three dolls were selected to represent their respective levels of sexualization based on determinations from the APA Task Force of the Sexualization of Girls (2010) and previous research assessing the sexualization of Barbie specifically (Dittmar, Halliwell, & Ive, 2006). Following exposure to one of the three doll sexualization conditions, we measured body esteem, appearance satisfaction, verbal ability, and mathematical ability, and desire for thinness. In accordance with objectification theory (Fredrickson et al., 1998), we would expect girls in the sexualized doll conditions to report lower body esteem and appearance satisfaction and perform more poorly on the math and verbal tasks.

CHAPTER 5 – PRESENT RESEARCH

In the present study, the effect of sexualization on girls' body esteem and cognitive ability was tested. The study examined the influence of exposure to sexualized stimuli on 5-8 year-old girls, specifically assessing the effect of exposure to sexualized fashion dolls on girls' body esteem and cognitive performance.

The study manipulated exposure to one of three fashion dolls that represented different levels of sexualization: Corolle Camille represented low sexualization, Barbie Fashionista represented moderate sexualization, Bratz Cloe represented high sexualization. Following exposure to one of the three dolls, we measured body surveillance, appearance satisfaction, verbal ability, and mathematical ability, and desire for thinness.

Each participant was randomly assigned to engage in ten minutes of free play with one of the three dolls. All of the dolls were relatively similar in terms of material composition, height, and hair color, displaying blonde hair and fair skin. The dolls differed in body type, with the Corolle Camille doll being the most "realistic" or "attainable" body type, the Barbie being a moderately accurate (though still unattainable) body type, and the Bratz doll being the most drastic and hypersexualized body shape (See Figure A for images of the three dolls). The dolls also differed in terms of dress, with the Corolle Camille doll being the most modestly dressed and the Bratz doll being the most proactively dressed. Following the free play session (with one of the three dolls), the participants completed the body esteem measures and both the verbal and mathematical tests.

Hypotheses

Hypothesis 1 – Based on previous research regarding the influence of sexualization on women and girls (e.g., Dittmar, Halliwell, & Ive, 2006; Fredrickson et al., 1998), we derived a hypothesis predicting that the girls in both sexualized doll conditions would report lower appearance satisfaction, higher desire for thinness, and higher body surveillance compared to the girls in the non-sexualized doll condition. Furthermore, we predicted that girls in the most sexualized doll condition (Bratz Cloe) would report greater body dissatisfaction (i.e., lower appearance satisfaction, higher desire for thinness, and higher body surveillance) than girls in the moderately sexualized doll condition (Barbie Fashionista).

Hypothesis 2 – Additionally, we predicted that girls in the sexualized doll conditions would perform more poorly on both the math and the verbal tasks. Similarly, we hypothesized that girls in the Bratz Cloe condition would perform more poorly than girls in the Barbie Fashionista condition on both the math and verbal tasks. According to objectification theory (Fredrickson et al., 1998), it was expected that girls in the sexualized doll conditions would engage in self-objectification, which would cause a decrease in their body esteem and cause them to be more conscious of their own bodies, thereby impairing their ability to perform well on the cognitive tasks.

CHAPTER 6 – METHOD

Participants

Twenty-two girls took part in this study, all of whom were between the ages of five and eight. Two participants' data were completely excluded, as they were accidentally exposed to a doll from a different study (not one of the three dolls from the present study). Additionally, we excluded the math and verbal scores from a participant who had a neuroblastoma and was well behind grade-level in math and reading. We utilized this participant's body esteem data, however, as those measures are designed for use with much younger children, and she demonstrated no difficulty understanding the items on those measures.

Of the 20 participants whose data were included, seven of the participants were in kindergarten, 6 in first grade, 4 in second grade, and 3 in third grade. Ten girls were in the Corolle Camille (non-sexualized) condition, 3 were in the Barbie Fashionista (moderately sexualized) condition, and 7 were in the Bratz Cloe (highly sexualized) condition. Power analyses indicated that approximately 7 participants per condition would be needed given a large effect size (Cohen's $d = .8$), approximately 22 participants per condition would be needed given a medium effect size (Cohen's $d = .5$), while approximately 82 participants per cell would be necessary given a small effect size (Cohen's $d = .2$).

In addition, data were also collected from the parents/guardians who accompanied their daughters in the study. Therefore, a total of 40 participants were included in our study – 20 girls and 20 parents/guardians. One of the parents/guardians was male, and nineteen of the parents/guardians were female.

Participants for this study were recruited via four methods: re-contact from previous studies, letters distributed to classrooms in the 509J school district and two local preschools, flyers, and advertisements in a local newspaper. Via the re-contact method, participants who had completed other studies in the Lifespan Social Development lab (and had previously given permission for the lab to keep their contact information for notification of future studies) were contacted and informed about the new study in which they could participate. Additionally, letters were sent home to the families of children in kindergarten through third grade at cooperating Corvallis 509J schools (including Adams, Hoover, Jefferson, Muddy Creek, and Wilson elementary schools). Parents and/or guardians who were interested in the study could contact the Lifespan Social Development lab for more information about the study and/or to enroll in the study. Via the flyer method, flyers with details about the study were posted in family-friendly places in Corvallis, OR (e.g., the Boys and Girls Club of Corvallis). Interested participants could take a flyer and contact the Lifespan Social Development Lab – via phone or e-mail – to enroll in the study. Lastly, advertisements were placed in a local paper (the Valley Parent, a free paper for families in the Benton and Linn County area). Individuals who read the advertisements were also able to contact the lab to make an appointment to participate.

Because children are defined as a vulnerable population, extra precautions were taken to ensure the participants' rights were protected and all ethical responsibilities were met. Research assistants were trained on detecting signs of discomfort in children, and parents/guardians were able to watch their children on a monitor via a video feed to ensure that their child was not experiencing stress because of the study. Both the parents/guardians and the child participants received compensation for participating in

the study. Parents/guardians were given \$10 as compensation for their participation in the study. The children were given a book (*Shapesville*) that contained positive messages about body shapes and sizes, and they were also offered an array of stickers.

Materials

Upon entering the study, child participants were randomly assigned to one of three doll conditions (see Figure 1). The three dolls were selected to represent their respective levels of sexualization based on determinations from the APA Task Force of the Sexualization of Girls (2010) and previous research assessing the sexualization of Barbie specifically (Dittmar, Halliwell, & Ive, 2006). Additionally, prior to pilot testing, we asked naïve coders to rate the sexualization of the three dolls. On a scale of 1 to 5 (with 1 indicating very non-sexualized and 5 indicating very sexualized), our six coders rated Corolle Camille as a 1.67 on average, Barbie Fashionista as a 3.67 on average, and Bratz Cloe as a 4.67 on average.



Figure 1. Doll conditions (From left to right – Corolle Camille (low sexualization), Barbie Fashionista (moderate sexualization), Bratz Cloe (high sexualization))

The randomly assigned doll was placed upon a table in the experiment room, and the doll's outfits – different for each condition – were laid out next to the doll on the same table. Upon entering the experiment room, the child participant engaged in ten minutes of free play with the assigned doll and a trained research assistant. Because this stage of the experiment was timed, a clock was placed in the experiment room for the purpose of monitoring time of the free play session. There was no time limit on the remaining portions of the experiment, and therefore no time recordings were taken after the completion of the free play session.

After the free play session, child participants were asked to answer age-appropriate questions that measured appearance satisfaction, body surveillance, and desire for thinness. These questions were read to the child participants, who verbally responded to the questions. The body esteem measures used can be found in Appendices A, B, and C.

Appearance Satisfaction

Dohnt and Tiggemann (2006) adapted Mendelson and White's (1982) Body Esteem Scale for Children (which is a 24-item measure designed for use with children who are between the ages of seven and twelve) for use in a younger population. This adaptation, which Dohnt and Tiggemann dubbed the Appearance Satisfaction Scale, preserves the content from the Body-Esteem Scale for Children but alters its delivery to make it usable for younger children. Mendelson and White's Body Esteem Scale for Children previously demonstrated reasonable split-half reliability ($\alpha = .85$). Additionally, Mendelson and White compared the Body-Esteem Scale for Children to the Self-Body

Scale, and a positive correlation ($r = .67$) was found, suggesting reasonable convergent validity for the measure.

The Appearance Satisfaction Scale utilizes a delivery method based on Harter and Pikes' (1984) Pictorial Scale of Perceived Competence and Social Acceptance, which was designed for use in children ages four to seven (Harter & Pikes, 1984). On the basis of this pictorial format, children are shown two pictures – one of a happy face, and one of a sad face (Figure 2). Children are prompted to respond to body esteem items by pointing to one of the two faces and answering a follow up question to express frequency or extremity of the initial responses.



Figure 2. Appearance satisfaction stimuli

Utilizing Dohnt and Tiggemann's procedure, child participants were prompted to respond to questions on the Appearance Satisfaction in this two-part fashion. First, the child participants were asked to distinguish if they were "happy" or "unhappy" with a particular aspect of their body or appearance (e.g., their weight or size). Then, child participants were prompted to indicate if they felt that way "usually" or "only sometimes." For example, a girl (participant) would be told, "This girl is happy with the way she looks right now," and the experimenter would point to the picture of the happy face; then the child would be told, "This girl is unhappy with the way she looks right

now,” and the experimenter would point to the picture of the sad face. The experimenter would then ask the participant which picture (happy or sad) was more like her. For the follow up question, the experimenter would ask the child if she felt that way “sometimes” or “usually.”

For each item, if a child participant indicated she was “happy usually,” that was coded as a 4. A child participant who indicated she was “happy only sometimes” was coded with a response of 3. If a child participant indicated she was “sad only sometimes,” that was coded as a 2. Lastly, if a child participant indicated she was “sad usually,” that was coded as a 1. A high total score indicated the child participant had higher appearance satisfaction, while a low total score indicated the child participant had lower appearance satisfaction.

Body Surveillance

To measure body surveillance, we utilized an adaptation of McKinley and Hyde’s (1996) Body Surveillance subscale of the Objectified Body Consciousness Scale. The original scale was designed for adults, and we adapted the measure to be appropriate for use with children. The Body Surveillance scale was designed to measure the degree to which girls view their bodies as if they were an outside observer (i.e., focusing more on how their bodies look rather than how they feel). High internal reliability ($\alpha = .89$) and good construct validity ($\alpha = .81$) have been demonstrated in the original Body Surveillance subscale of McKinley and Hyde’s measure. Utilizing Dohnt and Tiggemann’s approach, we transformed the Body Surveillance scale so that it followed a pictorial format similar to the Appearance Satisfaction Scale.

Following Dohnt and Tiggemann’s procedure, child participants were shown a

picture of two smiley faces (Figure 3). The two smiley faces were exactly the same to ensure that girls did not choose one of the faces based on preference for its appearance). Children were prompted to respond to body surveillance items by pointing to one of the two faces and answering a follow up question to express frequency or extremity of the initial response. For example, a girl (participant) would be told, “This girl thinks it is more important that her clothes are comfortable than whether they look good on her,” and the experimenter would point to the picture of one of the smiley faces; then the child would be told, “This girl thinks it’s more important that her clothes look good than be comfortable,” and the experimenter would point to the picture of the other smiley face. The experimenter would then ask the participant which picture was more like her. For the follow up question, the experimenter would ask the child if she felt that way “a little” or “a lot.”

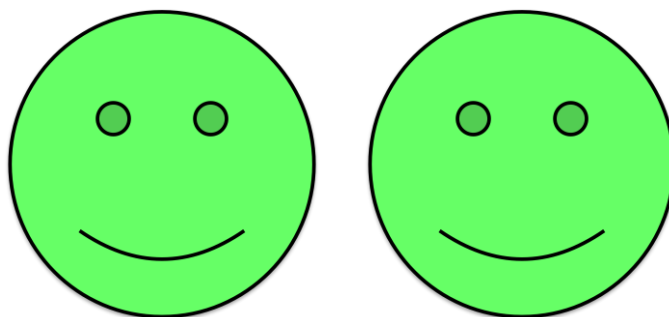


Figure 3. Body surveillance stimuli

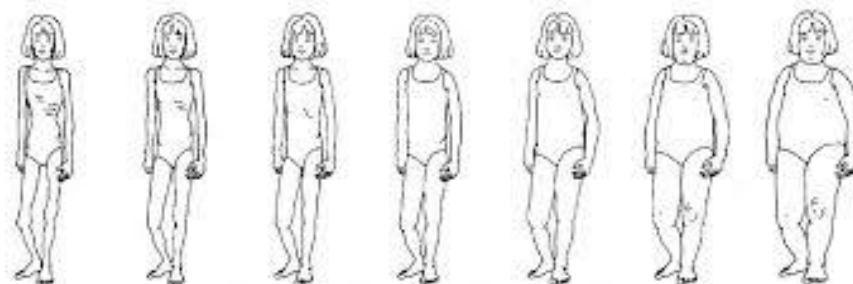
A child participant who indicated she was concerned with function over appearance (i.e., more concerned with how her body feels rather than how it looks) “a lot” was coded with a response of 1 for that item. If a child participant indicated she was concerned with function over appearance “a little,” that was coded as a 2. A child participant who indicated she was concerned with appearance over function (i.e., more

concerned with how her body looks rather than how it feels) “a little” was coded as a 3. Lastly, if a child participant indicated she was concerned with appearance over function “a lot,” that was coded as a 4. Higher total scores on the Body Surveillance Scale indicated girls’ frequent monitoring of their own appearance and thoughts about how the body looks opposed to how it feels and/or functions.

Desire for Thinness

To measure girls’ desire for a thin body type and wish to change their current body size, we utilized a pictorial measure designed by Collins (1991). The Desire for Thinness measure has demonstrated adequate reliability ($\alpha = .71$), and it appropriate for use with younger children. Following the procedure of Collins, girls were shown a set of seven child figures that ranged from very thin to very heavy (Figure 4a). Girls were asked to color the figure that “looks the most like you look now” (actual self), “looks the way you want to look now” (ideal self), and “looks the way you think most girls your age want to look” (peer ideal). The order of the three questions was randomized, and girls were given a new sheet (depicting the same seven figures) to color for each question. Additionally, girls were presented with seven adult figures that ranged from very thin to very heavy (Figure 4b), and they were asked to color the figure that “looks the way you want to look when you grow up.” The adult scale (utilized as a measure of future ideal self) was always presented after the three “present time” questions had been asked. For all four questions (3 “present” and 1 “future”), the children were instructed to color one figure and to flip the sheet of paper over when they were finished, thus ensuring the confidentiality of their answers so that they could feel more comfortable answering the questions honestly.

a. Present (actual self now, ideal self now, peer ideal now)



b. Future (ideal self as an adult)

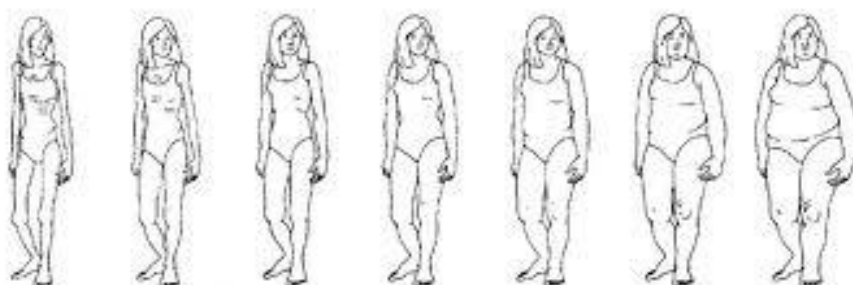


Figure 4. Desire for thinness stimuli

Responses on the Desire for Thinness Scale were coded the same for each of the four questions; each figure was assigned a numerical value (ranging from very thin = 1 to very heavy = 7, such that “4” represented the mid-point, or “average” weight). A child participant who indicated she felt she currently looked like figure 5 (i.e., slightly heavier than the average of “4”) and also indicated that she would like to be like figure 3 (i.e., slightly lighter than the average of “4”) would be classified as having desire for thinness.

Academic Performance Measures

Along with the body esteem measures, child participants completed grade-appropriate math and verbal assessments. There were four possible math and verbal tests – kindergarten level, first-grade level, second-grade level, and third-grade level – and the child participant was given the assessment that corresponded with her current grade in

school. To ensure our academic measures were grade-appropriate, a third-grade teacher in the Corvallis 509J school district assessed the math and verbal tasks for all four of the grade levels. Each math and verbal test contained ten questions that were selected from the Oregon Common Core standards and took approximately 10 minutes to complete. The math and verbal questions were administered verbally, and the questions were also shown to the children (who could read along if they would like). Some questions were free response, while others were multiple-choice. The verbal and math assessments used can be found in Appendix D.

Both the verbal and math assessments were scored on the basis of correct answers. Math performance was scored by the total number of math problems the child participant answered correctly (0 = no questions answered correctly; 10 = all questions answered correctly). Verbal performance was scored by the total number of verbal questions the child participant answered correctly (0 = no questions answered correctly; 10 = all questions answered correctly). A higher score on the math task indicated higher mathematic ability, while a lower score indicated low mathematic ability. Likewise, a higher score on the verbal task indicated higher verbal ability, while a lower score indicated low verbal ability.

Adult Measure – Body Esteem

While the child participants engaged in the free-play session and completed the various measures, parents/guardians were asked to provide some basic information about their children –e.g., favorite toy to play with, amount of time spent playing with fashion dolls – and complete the Body Esteem Scale for Adults and Adolescents (Mendelson, White, & Mendelson, 2001). The BESAA is a multidimensional measure of body esteem

that has 23 items and three subscales – appearance, attribution, and weight.

The BESAA has demonstrated adequate validity, as its appearance subscale was positively correlated with global self-esteem component of the Rosenberg's Self-Esteem Scale. The other two subscales (weight and attribution), however, were not consistently correlated with global self-esteem. The BESAA has also proven to be reliable for use with both men and women. For men, high reliability coefficients have been demonstrated for all three subscales (ranging from .85 - .91 across age groups for the appearance subscale, .87 - .91 for the weight subscale, and .75 - .88 for the attribution subscale). For women, high reliability coefficients were have also been produced (ranging from .91 - .94 for appearance, .94 - .96 for weight, and .75 - .84 for attribution). These high reliability coefficients indicate the three BESAA subscales are internally consistent for both men and women.

The BESAA has 23 items – some positively worded and others negatively worded - and the administration of BESAA required approximately ten minutes. Respondents indicated their level of agreement on items via a 5-point Likert Scale ranging from “never” to “always.” For example, if an individual always likes what he or she looks like in pictures (which is one of the items in the BESAA), the individual indicated that by circling a 5 for that particular item. Following completion of the BESAA, negative items were reverse scored, and a total score was calculated. Higher scores on the BESAA indicated higher levels of body satisfaction, while lower scores on the BESAA indicated higher levels of body dissatisfaction. The BESAA can be found in Appendix E.

Procedure

Upon entering the study, the parents/guardians were first asked to read the informed consent form and were given a verbal description of its contents as well. Upon reading the document, parents/guardians were then asked if they had any questions regarding the study and if they were sure that they would like to participate and would like their child to participate. Before the parents/guardians agreed to be a part of the study and signed the informed consent document, they were assured their personal information (and their daughters' personal information) would be kept confidential. They were told that only the researchers would see their filled out documents and that after the data were entered electronically (with no attachment to their identity) their documents would be stored in a secure location for three years and would then be shredded.

After consent was obtained from the parents, the children were led through the assent process. A verbal description of the study was given to the children using age-appropriate language, and children were allowed to ask any questions they had about the study. Child participants who were five or six years old verbally assented to participate in the study, and a trained research assistant recorded that the child assented to participate. Child participants who were seven or eight years old were asked to sign their name on the assent form to indicate their assent to participate.

Once consent from the adult and assent from the child were both obtained, the child was invited into the experiment room with a trained research assistant. The parent/guardian of the child was remained in the control room (where consent and assent were obtained) next door to the experiment room and was able to watch his or her daughter on a monitor via a video feed.

As the study followed a between-subjects design, each child participant was exposed to only one level of the independent variable. Therefore, each participant engaged in free play with only one of the three dolls. After the participants completed the free play session, a different trained research assistant (who was masked to the doll condition) entered the room and administered the measures. Child participants verbally completed the appearance satisfaction measure, desire for thinness measure, and body surveillance measure and were then verbally given instructions for the completion of the math and verbal assessments. While the children were answering the appearance satisfaction, desire for thinness, and body surveillance measures and completing the math and verbal assessments, the parents/guardians were able to watch their children from an adjacent observation room via a video feed displayed on a monitor. Parents/guardians were also asked to fill out a questionnaire that contained questions about the children's home activities and also contained a Body Esteem Scale for Adults and Adolescents (BESAA) for the adult to fill out.

After the child participants had finished the body esteem measures and completed the math and verbal assessments, they were told the study was over and were then read the first two pages of the book *Shapesville* as their debriefing. The pages read expressed that all different shapes and sizes of people are possible and valuable. The children were also allowed to take this book home with them. Meanwhile, adult participants were given the debriefing form and were encouraged to ask any questions they might have about the study. There was no deception used in this study. Participants were aware that their responses to body esteem measures as well as their performance on math and verbal tasks was being measured; they just did not know that specifically that the effect of sexualized

dolls on these outcome variables was being measured. This information was all clearly detailed in the debriefing form and resulting conversation.

CHAPTER 7 – RESULTS

Data Reduction

Preliminary analyses of means by condition suggested no difference between the Barbie Fashionista and Bratz Cloe conditions. Therefore, given the small number of girls in the Barbie condition, we collapsed across the two sexualized doll conditions such that data analyses compared the sexualized doll conditions (as one group) to the non-sexualized doll condition. Additionally, grade of the child and body esteem of the parent were tested as covariates, and neither yielded significant results. An interaction between parent body esteem and doll condition was also investigated, and no significant interaction was found.

Appearance Satisfaction

We hypothesized that exposure to sexualized stimuli (in the form of sexualized fashion dolls) would negatively affect girls' appearance satisfaction. Therefore, it was predicted that girls in the non-sexualized doll condition (Corolle Camille) would report higher appearance satisfaction than girls in the two sexualized doll conditions (Barbie Fashionista and Bratz Cloe).

The data were analyzed with a one-way Analysis of Variance (ANOVA). Contrary to our hypothesis, there was not a significant main effect for doll condition on appearance satisfaction, $F(1,18) = .069$ $p = .795$. Girls in the sexualized doll conditions reported similar appearance satisfaction ($M = 28.6$, $SD = 3.43$) compared to the girls in the non-sexualized doll condition ($M = 28.2$, $SD = 3.37$).

Body Surveillance

We hypothesized that exposure to sexualized dolls would induce self-sexualization, thereby increasing the extent to which girls viewed their bodies as if they were an outside observer. Therefore, it was predicted that girls in the sexualized doll conditions would report higher body surveillance than girls in the non-sexualized doll condition.

The data were analyzed with a one-way Analysis of Variance (ANOVA). Contrary to our predictions, there was not a significant main effect for doll condition on body surveillance, $F(1,18) = .197$ $p = .663$. Girls in the sexualized doll conditions reported similar body surveillance ($M = 8.0$, $SD = 2.67$) compared to girls in the non-sexualized doll condition ($M = 8.7$, $SD = 4.22$).

Desire for Thinness

We hypothesized that girls in the sexualized doll conditions would experience greater desire for thinness than the girls in the non-sexualized doll condition. It was predicted that girls who were exposed to the sexualized dolls would report a higher actual self score (i.e., they would report themselves as being heavier than the girls who were exposed to the non-sexualized doll), a lower ideal self score (i.e., they would report themselves as wishing they were thinner than the girls who were exposed to the non-sexualized doll), and a lower peer ideal score (i.e., reporting that girls their age want to be thinner than the girls in the non-sexualized doll conditions would report that girls their age want to be). Additionally, it was predicted that girls in the sexualized doll condition would report a lower future ideal score (i.e., they would report wanting to be thinner when they grow up compared to girls in the non-sexualized doll condition).

The data were analyzed utilizing a Repeated Measures Analysis of Variance (ANOVA). The desire for thinness scale was treated as a within-subjects factor (with four levels: actual self, ideal self, peer ideal, and future ideal), and the doll condition was treated as a between-subjects factor. Contrary to our predictions, there was not a significant main effect for doll condition, $F(1,18) = .080, p = .781$. The doll condition did not affect girls' responses on the desire for thinness scale. There was also not a significant main effect of the desire for thinness scale, $F(1,18) = .374, p = .548$, suggesting that participants did not differ in their responses to the different scale items. Additionally, there was no interaction between the doll condition and the desire for thinness scale, $F(1, 18) = .003, p = .956$. The doll condition did not affect responses to the four questions on the desire for thinness scale differentially. For means and standard deviations of the desire for thinness scale items by doll condition, see Table 6.1.

Table 7.1

Mean Body-Perception Score by Doll Condition and Desire for Thinness Scale Item.

	Non-Sexualized Doll <i>Mean (SD)</i>	Sexualized Dolls <i>Mean (SD)</i>
Actual Self	3.4 (1.35)	3.5 (0.85)
Ideal Self	3.1 (0.88)	3.2 (1.55)
Peer Ideal	3.2 (1.55)	3.5 (1.90)
Future Ideal	3.2 (0.79)	3.2 (1.40)

Note. A lower score represents a thinner body-perception (minimum score = 1); a higher score represents a higher body-perception (maximum score = 7).

In addition to the Repeated Measures ANOVA, we conducted one-way ANOVAs to test for group differences in the difference scores produced by the desire for thinness items. To compare actual self to ideal self, a one-way ANOVA comparing the difference scores (ideal self – actual self) was utilized. Difference scores were computed such that a heavier actual self compared to ideal self would result in a negative score, while a heavier ideal self than actual self would result in a positive score. Contrary to our hypothesis, there was not a significant main effect for doll condition on desire for thinness (ideal self – actual self), $F(1,18) = .000$ $p = 1.0$. Girls in the sexualized doll conditions reported similar differences in actual self compared to ideal self ($M = -.30$, $SD = .95$) compared to the girls in the non-sexualized doll condition ($M = -.30$, $SD = 1.25$).

A one-way ANOVA was also utilized to compare actual self to peer ideal. Difference scores were computed such that a heavier actual self compared to peer ideal would result in a negative score, while a heavier peer ideal compared to actual self would result in a positive score. Contrary to our hypotheses, there was not a significant main effect for doll condition on desire for thinness (peer ideal – actual self), $F(1,18) = .083$ $p = .777$. Girls in the sexualized doll conditions reported similar differences in their actual self compared to peer ideal ($M = .00$, $SD = 1.83$) compared to girls in the non-sexualized doll condition ($M = -.2$, $SD = 1.23$).

Academic Performance

We hypothesized that exposure to sexualized dolls would induce self-objectification, thereby impairing girls' ability to perform cognitive tasks. Therefore, it was predicted that girls in the sexualized doll conditions would score lower on both the math and verbal tasks than the girls in the non-sexualized doll conditions.

Math - The data were analyzed with a one-way Analysis of Variance (ANOVA). Contrary to our predictions, there was not a significant main effect for doll condition on math performance $F(1,18) = .069$ $p = .795$. Girls in the sexualized doll conditions scored just as well on the math task ($M = 7.33$, $SD = 1.55$) as girls in the non-sexualized doll conditions ($M = 7.20$, $SD = 2.24$).

Verbal – The data were analyzed utilizing a one-way Analysis of Variance (ANOVA). There was not a significant main effect for doll condition on verbal performance, $F(1,18) = .074$, $p = .789$. Girls in the sexualized doll conditions scored similarly on the verbal task ($M = 8.11$, $SD = 1.27$) compared to girls in the non-sexualized condition ($M = 8.30$, $SD = 1.70$).

Academic Performance, Comparative - Additionally, a paired t-test was utilized to evaluate differences between math and verbal scores. Regardless of doll condition, girls scored higher on the verbal task than they did on the math task, $t_{18} = 2.32$, $p = .032$. On average, girls scored 8.21 ($SD = 1.48$) on the verbal task compared to 7.26 ($SD = 1.85$) on the math task.

CHAPTER 8 - DISCUSSION

While a significant amount of research has investigated the effect of sexualization on women, few researchers have examined children's experiences of sexualization. Additionally, the majority of the research that has investigated girls' experiences of sexualization has focused on media influences, particularly advertisements (APA Task Force, 2010). The effect of sexualized fashion dolls on girls' perceptions of their own bodies is highly understudied, and study of dolls in general has largely been focused on Barbie (APA Task Force). Our study sought to investigate the effect of not only Barbie, but also of other sexualized dolls (in particular, the Bratz Cloe doll), on girls' body esteem and cognitive performance.

Based on previous research regarding the influence of sexualization on women and girls (e.g., Dittmar, Halliwell, & Ive, 2006; Fredrickson et al., 1998), we hypothesized that the girls in both sexualized doll conditions (Barbie Fashionista and Bratz Cloe) would report lower body esteem than girls in the non-sexualized doll condition (Corolle Camille). According to objectification theory (Fredrickson et al., 1998), exposure to the sexualized dolls would cause girls to engage in self-sexualization, which would cause a decrease in their body esteem and make them more conscious of their own bodies (i.e., more likely to view their bodies as if they were an outside observer). Therefore, we predicted that girls in the two sexualized doll conditions would report lower appearance satisfaction, higher desire for thinness, and higher body surveillance compared to the girls in the non-sexualized doll condition. Contrary to our predictions, we found no differences between the appearance satisfaction, desire for

thinness, or body surveillance of the girls in the sexualized doll conditions compared to the non-sexualized doll condition.

Additionally, we predicted that girls in the sexualized doll conditions would perform more poorly on both the math and the verbal tasks compared to girls in the non-sexualized doll condition. Based on objectification theory (Fredrickson et al., 1998), we had expected that girls in the sexualized doll conditions would engage in self-objectification, which would shift girls' attention toward appearance concerns, thereby impairing their ability to perform well on the cognitive tasks. Contrary to our hypotheses, girls in the sexualized doll conditions performed just as well on both the math and the verbal tasks as girls in the non-sexualized condition.

Although we did not find significant differences between the body esteem and cognitive performance of girls in the sexualized doll conditions compared to the non-sexualized doll condition, past research has demonstrated negative effects of sexualization. Fredrickson and her colleagues (1998) determined that sexualizing women directly (i.e., having them wear a swimsuit) causes them to express more shame about their bodies, restrict their eating, and show less capability in performing cognitive tasks. Quinn et al. (2006) also demonstrated that women who experience sexualization continue to have body-focused thoughts after they are removed from the sexualized situation.

Furthermore, past research has indicated that women are negatively affected by sexualization cues even if they are not directly sexualized themselves; exposure to sexualized images of women has also elicited negative outcomes for women. Anschutz, Engels, Becker and van Stien (2008) found that women who watched a portion of a movie with sexualized female characters reported lower body satisfaction and

demonstrated restricted food intake compared to women who watched the same movie clip with a wider aspect ration (i.e., a “stretched out” version of the same movie, so that the characters appear heavier).

While the majority of sexualization research has focused on adult women, similar outcomes have been demonstrated for young girls as well. Durkin and Paxton (2002) found that girls who viewed images of sexualized women suffered a decrease in body satisfaction and an increase in depression compared to girls who viewed images of accessories. Additionally, internalization of the thin ideal and appearance comparison tendency predicted the decrease in body satisfaction (i.e., girls who were high in internalization of the thin ideal and had a high appearance comparison tendency suffered a greater decrease in body esteem after exposure to the sexualized images). This suggests that individual differences may influence the way girls are affected by exposure to sexualization.

While Durkin and Paxton (2002) determined that viewing images of idealized women negatively affected girls’ body satisfaction, further research has suggested that exposure to other sexualization cues has similar damaging effects. Dittmar et al. (2006) found that exposure to a book with illustrations of Barbie negatively affected girls’ body satisfaction and increased their desire for thinness. Additionally, exposure to a book with illustrations of a different doll, Emme (who was more normative in body size and proportion than Barbie) did not negatively affect body esteem.

In a similar experiment, Anschutz and Engels (2010) utilized Barbie and Emme to investigate the effect of different types of dolls on girls’ body image and food intake. Results indicated that girls who played with Barbie did not differ in body image

compared to girls who played with Emme. However, girls who played with Emme (the average-sized doll) ate significantly more food than girls who played with Barbie. This suggests that, although the dolls did not directly affect the body image of girls, exposure to different types of dolls directly influenced girls' food intake such that girls who were exposed to an idealized doll demonstrated restricted eating compared to girls who were exposed to a more normative doll.

Despite the results observed in previous research, we did not find a negative effect of exposure to sexualization on girls' appearance satisfaction, body surveillance, desire for thinness, or academic performance. While Fredrickson and her colleagues (1998) as well as other researchers (e.g., Quinn et al., 2006) directly imposed sexualization on women (by having them wear a swimsuit while performing various tasks), we did not directly impose sexualization on the girls in our study (nor could we ethically) in the same manner. It is possible that directly experiencing sexualization affects women in a different manner than being exposed to sexualization cues via other methods (e.g., sexualized fashion dolls). Women who are directly sexualized are placed in a situation that more forcefully draws attention to their bodies, which explains why women in Fredrickson et al.'s swimsuit condition, for example, experienced more shame about their bodies compared to women who were not placed in the sexualized situation. Directly experiencing sexualization – especially in situations when the sexualization is imposed as opposed to chosen – undoubtedly causes an attentional shift toward appearance concerns. Similarly, because imposing sexualization upon women appears to cause women to engage in appearance-focused thinking, the shift in attention gives reason for a decrease

in cognitive performance, as cognitive resources are drawn toward appearance concerns opposed to being utilized for performing the cognitive task at hand.

Although directly experiencing sexualization may be different than being exposed to other cues of sexualization, exposure to sexualized stimuli in other studies (e.g., Durkin & Paxton; 2002; Anschutz et al., 2008) has demonstrated a negative effect associated with viewing sexualized stimuli in multiple forms. In Anschutz et al.'s study, adult women were asked to watch a 30-minute video clip that contained either idealized depictions of women or more normative depictions of women. This exposure time is significantly longer than the exposure time in our study (which was only 10 minutes). It is possible that a longer exposure time heightens the impact of the sexualization cues, thereby causing individuals to be more likely to engage in self-sexualization, for example. Additionally, every participant in Anschutz et al.'s experiment interacted with the video clip in the same way (i.e., every person watched the exact same 30-minute clip, heard the exact same words, saw the exact same story line). In our study, children engaged in a free-play session with the doll they were randomly assigned to play with. While we opted for this exposure method to make the experience as naturalistic as possible (i.e., have the exposure be something a child may do on a normal day), it did allow for differences during the exposure period. Some children, for example, created storylines that included the doll going to the park, to school, or to the grocery store. Other children created storylines that included the doll going to a dance, on a date, or shopping with her friends. Because of the differences in the activities that the children chose to have the dolls do, it is possible that girls received different "doses" of sexualization regardless of the condition they were assigned to (i.e., a child who was randomly

assigned to the non-sexualized doll condition who had the doll get dressed up to go on a date with her boyfriend may have inserted sexualization cues into the free play session that were unrelated to the doll condition).

Despite differences in the free play session, we would have expected the girls to be affected by exposure to the different dolls. Particularly because of the results obtained by Dittmar et al., we expected girls in our sexualized doll conditions (Barbie Fashionista and Bratz Cloe) to report lower body esteem than the girls in our non-sexualized doll condition (Corolle Camille). However, the exposure method utilized by Dittmar et al. was more controlled than ours was as well. In their study, girls were read a book that contained illustrations of Barbie, illustrations of Emme, or no illustrations. Because the girls all read the same story, the only thing that differed between conditions was the physical appearance of the doll. Therefore, no other aspects of sexualization were inadvertently inserted into the exposure period. Perhaps our results would have been different had we prepared storylines for the research assistants to lead the children through rather than having the children create their own storylines for the dolls.

While our results were not in accordance with past sexualization research – as we found no effect of the sexualization level of the doll on girls’ body esteem or cognitive performance – we did find a significant difference between girls’ math scores and verbal scores that may be indicative of a stereotype threat cue. Regardless of doll condition, girls tended to score better on the verbal task than they did on the math task. According to Steele and Aronson (1995), exposure to a doll would activate girls’ gender identity, thereby bringing attention to their group affiliation (female) and the negative stereotypes surrounding that group. Because of the stereotype that boys are better at math than girls,

placing the girls in a situation in which they were made aware of their gender (i.e., exposing them to feminine dolls) would make them susceptible to succumb to stereotype threat, causing them to be more likely to perform in a way that falls in line with the negative stereotype regarding girls' math abilities.

Previous research with children has demonstrated a negative effect of stereotype threat on girls' math performance in similar situations. Neuville and Croizet (2007), for example, found that girls who colored a picture of a girl holding a doll succumbed to stereotype threat, performing more poorly on a math test than girls who colored a neutral picture (that did activate girls' gender identity). Unlike Neuville's and Croizet's study, however, our study did not contain a control condition, as all three of the dolls could act as gender-activating stimuli. Therefore, we cannot conclude that the underperformance on the math task was the effect of a stereotype threat cue. It is possible that girls in our sample were simply better at math tasks compared to verbal tasks. Additionally, it is possible that our math task was simply harder than our verbal tasks. In order for us to determine the presence of a stereotype threat cue, we would have to include a control condition (e.g., playing with blocks or Legos) that did not activate girls' gender identity.

Limitations

Although the results of our study suggest that the sexualization level of dolls does not influence girls' body esteem or academic performance, there are several limitations that may explain our atypical results. While our study was carefully designed to protect against experimenter effects (by masking research assistants to the doll condition), other sources of bias were present in our study. Notably, only one of our body esteem measures (the desire for thinness measure) was administered in such a way that the child's

responses were confidential. Our other two body esteem measures – appearance satisfaction and body surveillance – were administered such that a child responded verbally (or by pointing) to a question asked directly by the research assistant. Because children feel a great deal of pressure to provide the “right answers,” they are likely to pick up on hints or cues unconsciously given by the research assistant as to which answers are most desirable (Calmilletti, 2011). Therefore, it is quite possible that our participants picked up on subtle cues given by the research assistants that choosing the smiley face was more pleasing to the research assistant than choosing the sad face, for example. This phenomenon would explain the unusually high scores (average across conditions = 28.4/32) on the appearance satisfaction measure in particular.

While the appearance satisfaction scores may have been influenced by social desirability, the Appearance Satisfaction Scale may also suffer from reliability issues. The Appearance Satisfaction Scale is being used in another study currently in progress in our lab, and approximately 40 child participants have completed the Appearance Satisfaction Scale for that study. Utilizing the data from those 40 participants, I conducted a reliability analysis on the Appearance Satisfaction Scale, which yielded a reliability coefficient of .562. Granted, a sample size of 40 is not ideal for computing a reliability analysis. However, the preliminary reliability coefficient of .562 is not promising for the internal consistency of this measure.

The low reliability of the Appearance Satisfaction Scale could stem from a variety of factors. First and foremost, the length of the scale could be a concern. The Appearance Satisfaction Scale only has eight items (that are relevant to body esteem), and Furr and Bacharach (2008) suggest that, in general, longer tests tend to be more reliable than

shorter tests. Aside from its short length, it is also possible that the items are confusing for the children, thereby increasing the amount of error and decreasing the reliability of the measure. Specifically, some of the questions may be too similar, which may make children feel the need to interpret items that are asking the same thing as asking different things. For example, one item in the Appearance Satisfaction Scale states, “This girl really likes her weight” while another item states, “This girl’s weight makes her happy.” These items are quite similar, and yet girls often respond differently to the second item. Therefore, the repetitive nature of the questions may add confusion and error to the measure.

Our other two body esteem measures – desire for thinness and body surveillance – may suffer from reliability issues as well. Both of these measures only contain four items, and the questions on these measures are also somewhat repetitive by nature. Additionally, with a four-item scale, the range of scores a participant could obtain is quite limited, thereby creating difficulty in determining group differences. Although we opted for shorter measures in an effort to keep the children engaged in the task (and thereby continuing to provide meaningful answers to the questions), it is possible that our shorter measures were unable to adequately capture differences in desire for thinness or body surveillance.

In addition to concerns with regard to our body esteem measures, it is also possible that our math and verbal tasks were not as valid as we would have expected. As we utilized items from the year-end Oregon Common Core standards to formulate the tasks, we would have anticipated that these tasks would be an adequate measure of math and verbal ability. However, despite the fact that these year-end “tests” were completed

(in our study) at various times throughout the school year, the average score on both the verbal and math tasks was quite high. It appears that we may have had a ceiling effect; the tests may have been too easy, thereby resulting in high scores across condition that failed to capture potential difference between true math and verbal ability.

Despite the high average scores on the math and the verbal tasks, we still observed a significant difference between math and verbal scores; regardless of condition, girls scored higher on average on the verbal task compared to the math task. Although this difference in verbal and math performance may be indicative of a stereotype threat, our lack of a control condition is a limitation that renders us unable to test for a stereotype threat effect. Because we lacked a control condition that did not act as a gender-activating cue, we cannot conclude that the difference in math and verbal scores was caused by exposure to the dolls. The difference in math and verbal scores may simply be indicative of a difference in difficulty of the two tasks.

Additionally, our small sample size was a limitation that could potentially explain the lack of significant differences between conditions. Power analyses indicated that approximately 82 participants in each condition (for a total of 246 participants) would be necessary to detect differences given a small effect size (Cohen's $d = .2$). Therefore, our small sample size limited our ability to detect small effect sizes. It is possible that a study with a much larger sample could show differences that we were unable to. However, our data do not suggest any difference (not even a slight, insignificant difference) between the conditions in the direction of our hypotheses. Therefore, it is likely that our effect size is trivial or non-existent (computed effects sizes for our study ranged from 0.0 to 0.198). Because of this, a study with a larger sample size would likely not find significant

differences in the direction of our predictions, as sample size does not change effect size (Simmons, 2013).

Future Directions

Although our hypotheses were not supported, our study still provides useful information for future research. Most notably, our paradigm is one of the first (of the child sexualization studies) that adequately controls for experimenter effects. Because of a lack of masking in previous studies, past results may have been influenced by experimenter effects. In Dittmar et al.'s (2006) study, for example, the same experimenter who read the book (and was therefore aware of the condition) administered the body esteem measures. Therefore, it is conceivable that the experimenter inadvertently acted in a way that influenced girls' responses to the measures. Our paradigm provides an effective way for future researchers to eliminate the possibility of experimenters influencing girls' responses in such a way that group differences are created by experimenter bias instead of the manipulation of the sexualization condition.

Future researchers would also benefit from our adaption of the administration of Collins' (1991) desire for thinness measure. We found no evidence that past researchers counterbalanced the items of this measure; it seems as though the three present items (actual self, ideal self, and peer ideal) were always asked in the same order (first actual self, then ideal self, and finally peer ideal) in previous studies. Therefore, it is plausible that past studies demonstrated a significant difference between girls' actual self and ideal self, for example, because of the order of the questions asked. Because of this, we chose to counterbalance the three present items (actual self, ideal self, and peer ideal). Future researchers could counterbalance the three items as we did, and, with a larger sample

size, could investigate differences between girls who received the prompts in the typical order (actual self, ideal self, peer ideal) compared to those who received the prompts in a different order.

Additionally, future researchers would benefit from adding a control condition that was completely non-sexualized and non-gendered. Our study sought to determine whether the level of sexualization of a doll was influential; therefore, we included three dolls that aimed to represent a non-sexualized condition, a moderately sexualized condition, and a highly sexualized condition. Despite our efforts to present our non-sexualized doll (Corolle Camille) in a completely non-sexualized fashion, naïve coders still indicated that the doll was not entirely void of sexualization cues. For example, although her clothes were not nearly as revealing as Barbie's or Cloe's clothing, they were still quite feminine (e.g., one of her summer dresses was a halter top) and could have been interpreted in a sexualized fashion. Additionally, there was not as large of a "sexualization gap" between Barbie and Cloe as we would have liked. While our naïve coders rated Barbie as twice as sexualized as Camille, Cloe was only rated as slightly more sexualized than Barbie. Future researchers should seek to find dolls that more adequately represent the intended levels of sexualization, and they should also included a non-gendered control condition to allow for testing of stereotype threat effects.

CHAPTER 9 – CONCLUSION

Contrary to our predictions, girls in our study were unaffected by a brief exposure to sexualized dolls. Girls who engaged in a free play session with sexualized dolls reported similar body esteem as girls who played with a non-sexualized doll. Additionally, girls in the sexualized doll conditions performed equally well on the math and verbal tasks compared to girls in the non-sexualized doll condition. If our results are accurate, this is a positive development indeed. Past research has indicated that girls who are exposed to sexualized stimuli report being less satisfied with their bodies (e.g., Dittmar et al., 2006; Durkin & Paxton, 2002). Perhaps girls are learning to avoid engaging in self-comparisons with fashion dolls, as they represent unrealistic standards of beauty. Or perhaps girls are developing schemas regarding self-worth and beauty that include more than physical appearance alone.

However, although we did not find a direct negative influence of exposure to sexualized dolls on body esteem or academic performance for the girls in our study, sexualization may have other negative consequences for girls. Notably, sexualization can influence others' perceptions of girls. Graff, Murnen, and Smolak (2012) found that adult women rated a girl dressed in sexualized clothing as less capable, competent, and moral as the same girl dressed in non-sexualized clothing. This suggests that engaging in self-sexualization (e.g., dressing provocatively) negatively affects individuals' perceptions of girls' traits.

Despite adult women in Graff et al.'s (2012) experiment rating sexualized girls as less competent and less moral than girls who were not sexualized, Starr and Ferguson (2012) determined that girls still appear to have a desire to be "sexy." In their experiment,

girls (ages 6-9) were presented with two papers dolls - one of which was dressed in a non-sexily dressed and one of which was sexily dressed. The girls in their experiment reported feeling that they looked like the non-sexualized doll, but they also reported wanting to look like the sexualized doll and believing that the sexualized doll as more popular. This suggests that at least some girls may aspire to be sexy, perhaps because of the alleged social benefits of being sexy (Starr & Ferguson). So, although girls in our study were unaffected by a brief exposure to sexualized dolls, it does appear that girls are still gathering information regarding gender roles and expectations, in some form, from exposure to similar cues of sexualization. This brings into question, what exactly do girls learn from dolls?

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Appendix A – Appearance Satisfaction Scale

Show pictures of smiling face and sad face.

- This girl is happy with the way she looks right now (Smiling picture).
- This girl is not happy with the way she looks right now (Sad picture).
- Which girl is more like you?
- Are you '**only sometimes**' or '**usually**' like (chosen picture)?

(1) = Sad Usually, (2) = Sad Sometimes, (3) = Happy Sometimes, (4) = Happy Usually

1. This girl is pretty happy about the way she looks, this one is not happy. Which one is more like you?

	1	2	3	4
--	---	---	---	---
2. This girl likes/does not like what she sees when she looks in the mirror at herself.

Which one is more like you?	1	2	3	4
-----------------------------	---	---	---	---
3. This girl likes/does not like to eat pizza.

Which one is more like you?	1	2	3	4
-----------------------------	---	---	---	---
4. This girl worries/does not worry about the way she looks.

Which one is more like you?	1	2	3	4
-----------------------------	---	---	---	---
5. This girl thinks/does not think she has a good body.

Which one is more like you?	1	2	3	4
-----------------------------	---	---	---	---
6. This girl really likes/does not like what she weighs.

Which one is more like you?	1	2	3	4
-----------------------------	---	---	---	---
7. This girl really likes spinach. This girl really does not like spinach.

Which one is more like you?	1	2	3	4
-----------------------------	---	---	---	---
8. This girl wishes/does not wish she were thinner.

Which one is more like you?	1	2	3	4
-----------------------------	---	---	---	---
9. This girl's weight makes her/does not make her happy.

Which one is more like you?	1	2	3	4
-----------------------------	---	---	---	---
10. This girl wishes she could have recess more often, this one is fine with recess the way it is.

Which one is more like you?	1	2	3	4
-----------------------------	---	---	---	---
11. This girl is/is not proud of her body.

Which one is more like you?	1	2	3	4
-----------------------------	---	---	---	---

Appendix B – Body Surveillance Scale

Show pictures of two smiling girls.

1. This girl thinks it is more important that her clothes are comfortable than whether they look good on her (point to one). This girl thinks it's more important that her clothes look good than be comfortable (point to second). Which girl is more like you? Is it important to your clothes (are comfortable/look good) a lot or a little?

(1) = Comfortable; a lot, (2) = Comfortable; a little, (3) = Look good; a little, (4) = Look good; a lot

1 2 3 4

2. This girl thinks more about how her body feels than how her body looks (point to first). This girl thinks more about how her body looks than how her body feels (point to second). Which girl is more like you? Do you think about how your body (feels/looks) a lot or a little?

(1) = Feels; a lot, (2) = Feels; a little, (3) = Looks; a little, (4) = Looks; a lot

1 2 3 4

3. This girl thinks about how she looks during the day (point to first). This girl doesn't think about how she looks (point to second) during the day. Which girl is more like you? Do you think about the way you look a lot or a little? **OR** Do you never think about how you look during the day, or do you think about how you look a little during the day?

(1) = Think; a lot, (2) = Think; a little, (3) = (Doesn't) Think; a little, (4) = (Doesn't) Think; never

1 2 3 4

4. This girl is more concerned with what her body can do than how it looks (point to first). This girl is more concerned with how her body looks than what it can do (point to second). Which girl is more like you? Are you concerned with (what your body can do/how it looks) a lot or a little?

(1) = Can do; a lot, (2) = Can do; a little, (3) = Looks; a little, (4) = Looks; a lot

1 2 3 4

Appendix C – Desire for Thinness Scale

a. Actual self now, ideal self now, peer ideal

1. Three ratings of child figures: Actual self now, Ideal self now, peer ideal

Show child figures (one at a time), ask them to color in the figure who:

1. looks the most like you look now.

_____ (Circle child's response. 1 = most thin; 7 = most heavy)

1 2 3 4 5 6 7

2. shows the way you want to look now.

_____ 1 2 3 4 5 6 7

3. shows the way you think most girls your age want to look.

_____ 1 2 3 4 5 6 7

2. One rating of adult figures: Ideal self in the future.

Show adult figures, ask them to color in the figure who:

1. shows the way you want to look when you grow up?

(Circle child's response. 1 = most thin; 7 = most heavy)

1 2 3 4 5 6 7

Appendix D – Academic Tasks

D1. Kindergarten Verbal Task

1. “Two words rhyme when they sound alike at the end. I am going to read two words; I want you to tell me if they rhyme or do not rhyme.”

Write a check mark if the child gets the answer correct, and write an ‘x’ if the child does not

1. bed – fed _____
2. top – hop _____
3. run – soap _____
4. hand – sand _____

2. “I am going to tell you a word and I want you to tell me a word that rhymes with it.”
(The answers may be real or nonsense words)

Practice Items: Help the student identify when two words rhyme by using the following practice items. sun... _____ cat... _____

Test Items: Read each word and allow the student to respond. Write the word that the student responds with on the line. Mark those items that the student answers correctly with a rhyming match. The answer may be a real word or a nonsense word.

1. pain _____
2. cake _____
3. fox _____
4. see _____

3. Can you tell me the name of each of these letters? Yes No
B A I S C D F E P
L R Z J U H G W X
V Y N O K M T Q

4. Can you tell me the sound each letter in the top row makes? Yes No
B A I S C D F E P
L R Z J U H G W X
V Y N O K M T Q

D2. Kindergarten Math Task

- | | | |
|---|---------|-----------|
| 1. Can you count to 10 for me? | Yes | No |
| 2. Can you count to 50 by 5s for me? | Yes | No |
| 3. Can you count to 100 by 10s for me? | Yes | No |
| 4. Can you write the numbers 0-20 right here? | Yes | No |
| 5. How many stars are there here? | Correct | Incorrect |



- | | | |
|--|---------|-----------|
| 6. Are there more stars here (point to first group) or here (point to second group)? | Correct | Incorrect |
|--|---------|-----------|



- | | | |
|--|---------|-----------|
| 7. Ok, here is a pile of animals (show child toys). Can you count out 20 of them for me? | Yes | No |
| 8. Ok, here are 5 animals. Can you find how many more I would need to make 10 altogether? | Yes | No |
| 9. Great, now we have 10! If I take away these two animals right here, could you tell me how many are left? | Correct | Incorrect |
| 10. Can you tell me the name of all these shapes? (show cards with square, rectangle, triangle, circle, cube, sphere). (Ok to prompt with “is this one a circle or a sphere” or similar as needed for cube and sphere) | Yes | No |

D3. First Grade Verbal Task

(Read the following, or have child read aloud, as she is comfortable)

"Mom," Jane said. "Can I make our lunch?"

"That would be delightful," said Jane's mother. "I will sit at the table in case you need help." Jane got two plates. She put a slice of bread on each plate. Then she put the cheese on the bread.

"What else can we eat?" Jane asked.

"Some fruit would be delicious," her mother said. Jane thought apples tasted good, too. So she washed two apples. She put an apple on each plate.

Then Jane poured milk in two glasses and she got them each a napkin. She gave her mother a yellow napkin and she took a blue one.

"Lunch is ready!" Jane said. She put the plates on the table.

"This looks good, Jane!" said Jane's mother. "You are a very good cook!"

1. Which of these things happened first?
 - A. Jane put cheese on the bread.
 - B. Jane poured the milk.
 - C. Jane got two plates.
2. Which of these things happened last?
 - A. Jane poured the milk.
 - B. Jane's mother sat down at the table.
 - C. Jane got two napkins.
3. What is the story about?
 - A. Jane makes lunch.
 - B. Jane learns to like apples.
 - C. Jane's mother eats lunch.
4. At the end of the story, how does Jane most likely feel?
 - A. proud
 - B. sad
 - C. full
5. What does "delicious" mean?
 - A. bitter
 - B. yummy
 - C. hungry

D3. First Grade Verbal Task (Continued)**Bird's Nest**

(Read the following, or have child read aloud, as she is comfortable)

A bird built a nest in the loft of a barn. Every day the bird gathered sticks and grass from the ground. Every day the nest got bigger. Sometimes the bird sang a song when she worked. One day the bird did not leave the nest. It sat on the nest for a very long time. The bird warmed two blue eggs. All of a sudden the eggs cracked and two baby robins appeared.

6. What does the word gathered mean?

- A. made
- B. picked up
- C. threw down

7. Which color were the bird's eggs?

- A. blue
- B. white
- C. brown

8. How many babies were in the nest?

- A. two
- B. three
- C. four

9. The bird sat on the nest to

- A. sing songs.
- B. build a nest.
- C. warm eggs.

10. The bird's nest was made of

- A. straw and cloth
- B. mud and rocks
- C. grass and sticks

D4. First Grade Math Test

1. Which number tells how many tens are in 83?

- A. 3
- B. 8
- C. 80

2. Which of these is equal to 12?

- A. $3 + 11$
- B. $15 - 4$
- C. $7 + 5$

3. Which number is greater than 45?

- A. 71
- B. 29
- C. 37

4. What fraction of the circle here is shaded? (show card with $\frac{1}{2}$ of the circle colored)

- A. $\frac{1}{2}$
- B. $\frac{1}{4}$
- C. $\frac{1}{3}$

5. Which number shows seventy-three?

- A. 17
- B. 37
- C. 73

6. Jennifer is counting out loud by fives. Which number should she say?

- A. 10
- B. 12
- C. 14

7. Which of these equals the same as $3 + 5$?

- A. $6 + 4$
- B. $2 + 7$
- C. $1 + 7$

8. What number belongs in the space below?

20, 19, 18, 17, __, 15, 14

- A. 16
- B. 13
- C. 12

9. Which numbers are in order from least to greatest?

- A. 11, 12, 13
- B. 25, 28, 27
- C. 59, 57, 60

10. Which group shows the numbers from lowest to highest?

- A. 23, 12, 45, 47

B. 12, 23, 45, 47

C. 47, 12, 23, 45

D5. Second Verbal Task

1. The band played music at the parade.

Which word in the sentence is an action word?

A. played

B. music

C. parade

2. The children _____ running to catch the bus.

Which word correctly completes this sentence?

A. is

B. are

C. was

3. Which word can be used in place of the underlined words in the sentence below?

Julie and Jason live there.

A. She

B. They

C. There

4. Which sentence would be BEST to put at the start of the paragraph below?

Jim likes to play football. His sister plays baseball. His brother is on a basketball team. His parents like to ski in the winter.

A. Jim has a large family.

B. Jim's family enjoys sports.

C. Playing sports is good exercise.

5. Which is the BEST way to combine these two sentences into one sentence?

I woke up. I ate breakfast.

A. I woke up but I ate breakfast.

B. I woke up after I ate breakfast.

C. I woke up, and then I ate breakfast

D5. Second Grade Verbal Task (Continued).**Let's Go on a Hike**

Have you ever been on a hike? A hike is a long walk. Sometimes a hike is in a park or a forest.

On a hike you may be distant from other people. So be sure you are safe. First, you should always take an adult with you. You should have a map that tells you where you are going. The map should tell you how far you will be hiking.

You should wear good shoes. You should take plenty of water to drink. And you should tell other people that you are going on the hike. That way, they can watch for you. They can make sure you are safe.

Hikes are fun! But safe hikes are the most fun of all.

Circle the child's responses below

1. Take an adult with you on a hike to

- A. be safe.
- B. show you rocks.
- C. have fun.

2. You should bring water

- A. to give to plants.
- B. to wash your face.
- C. for you to drink.

3. What should tell you how far you will be hiking?

- A. an adult
- B. a map
- C. a friend

4. This story is about

- A. why maps are important.
- B. where to take a hike.
- C. safe ways to take a hike.

5. A hike is like a

- A. party.
- B. walk.
- C. game.

D6. Second Grade Math Task

1. Which is the number of hundreds in 827?
A. 2
B. 7
C. 8
2. Which number has a 2 in the tens place, a 5 in the ones place, and a 6 in the hundreds place?
A. 256
B. 526
C. 625
3. How many nickels are there in a dollar?
A. 4
B. 10
C. 20
4. Which number has the same digit in the hundreds and ones places?
A. 331
B. 202
C. 144
5. Which number should go in the box?
 $19 + \square = 19$
A. 0
B. 1
C. 19
6. $17 - 8 =$
A. 9
B. 10
C. 11
7. Dana had 17 pages to read. So far, she has read 9 pages. How many pages does she have left to read?
A. 7
B. 8
C. 9
8. Which number makes the number sentence true?
 $5 + 2 + \quad = 12$
A. 5
B. 6
C. 7
9. What number belongs in the space below? (*Write the number in the space.*)
35, 30, 25, 20, _____, 10, 5
10. What number comes next? (*Write the number in the space.*)
10, 20, 30, 40, 50, 60, _____

D7. Third Grade Verbal Task

1. I like to go to the lake. I like to run on the shore and fly kites. Swimming in the lake is fun, too. I like to ride on the paddleboats. Going to the lake is great fun.

Which is the topic sentence of this paragraph?

- A. I like to go to the lake.
- B. I like to run on the shore and fly kites.
- C. Swimming in the lake is fun, too.
- D. I like to ride on the paddleboats.

2. George is a wonderful student.

Which sentence supports this topic sentence?

- A. George's mom writes stories.
- B. George pays attention in class.
- C. George has a friend named Sam.
- D. George likes to play guitar after supper.

3. Amber has a serious case of the sillies. Everything is funny to Amber. She sees a dog with one brown ear and she laughs until she falls down in the grass. Kittens love yarn. A case of the sillies is not such a bad thing.

Which sentence does NOT belong in this paragraph?

- A. Amber has a serious case of the sillies.
- B. Everything is funny to Amber.
- C. Kittens love yarn.
- D. A case of the sillies is not such a bad thing.

4. Julie has a new friend named Mary. Mary comes to visit Julie after school sometimes. Mary's school plans class trips to the zoo sometimes. Julie shows Mary some pictures of her family. Julie and Mary like being friends.

Which sentence does NOT belong with the rest of the paragraph?

- A. Julie has a new friend named Mary.
- B. Mary comes to visit Julie after school sometimes.
- C. Mary's school plans class trips to the zoo sometimes.
- D. Julie shows Mary some pictures of her family.

5. The sentence that tells what a paragraph is about is called:

- A. the last sentence.
- B. the topic sentence.
- C. the longest sentence.
- D. the supporting sentence.

D7. Third Grade Verbal Task (Continued)

6. We always have spaghetti for supper on Thursdays.

The underlined word is

- A. a verb.
- B. a noun.
- C. a pronoun.
- D. an adjective.

7. Our classmate ramona enjoys her school.

Which word in this sentence should have a capital letter?

- A. classmate
- B. ramona
- C. enjoys
- D. school

8. Tonite we will measure the length of the highway.

Which underlined word is NOT spelled correctly?

- A. tonite
- B. measure
- C. length
- D. highway

9. The hummingbird have a long bill which it uses to get nectar from flowers.

Which word should replace the underlined word?

- A. has
- B. haves
- C. halve
- D. haven't

10. She danced beautifully in the school musical.

Which word does *beautifully* describe?

- A. she
- B. danced
- C. school
- D. musical

D8. Third Grade Math Task

1. Which list contains only even numbers?

- A. 1, 2, 3, 4
- B. 5, 10, 15, 20
- C. 1, 3, 5, 7
- D. 2, 4, 6, 8

2. Use the chart below to answer this question.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40

Sally will cross out the numbers she says as she counts by 5. Next she will cross out all the even numbers on the chart above. Which number will she NOT cross out?

- A. 20
- B. 23
- C. 35
- D. 38

3. Which number is the same as five hundred twenty-two?

- A. 50022
- B. 5220
- C. 5022
- D. 522

4. At the zoo there are 167 snakes inside the Reptile House, 22 snakes outside the house, and 309 baby snakes in a special cage. Which is the BEST estimate of the total number of snakes?

- A. 300
- B. 400
- C. 500
- D. 600

5. Marla made the rectangle shown above using black and white tiles. What part of the rectangle is made of black tiles? (show card with $\frac{6}{10}$ shaded rectangle)

- A. 0.4
- B. 0.5
- C. 0.6
- D. 0.7

6. There are 31 students in Mrs. Kelsy's class. On Wednesday, 10 of those students were absent. How many students were in class on Wednesday?

- A. 20
- B. 21
- C. 30
- D. 41

D2. Third Grade Math Task (continued)

7. Which number sentence is NOT true?

- A. $243 \times 1 = 243$
- B. $427 \times 0 = 427$
- C. $687 \times 1 = 687$
- D. $915 \times 0 = 0$

8. April was collecting 25 cents from each student in her class to buy a gift for their teacher. On Tuesday, she received money from 6 students. She wanted to keep track of the money she received, so she wrote

$25 + 25 + 25 + 25 + 25 + 25 = \underline{\hspace{2cm}}$.

What other way could April have written this sentence?

- A. $6 \times 25 =$
- B. $25 \div 6 =$
- C. $6 + 25 =$
- D. $25 - 6 =$

9. Allison is 2 years older than Selena. Kathy is only 1 year older than Selena. Does this make Allison the oldest?

- A. No, because Kathy could be the oldest.
- B. No, because Kathy could be the same age as Allison.
- C. Yes, because Allison is 1 year older than Kathy.
- D. Yes, because Allison is 2 years older than Kathy.

10. Maria counts aloud by fours. Julie counts aloud by sevens. Which number below will both say?

- A. 14
- B. 21
- C. 28
- D. 32

Appendix E – Body Esteem Scale for Adults and Adolescents

Please circle the number that best corresponded to your feelings about your body. Feel free to leave an answer blank if you are uncomfortable answering.

	Almost Never	Rarely	Sometimes	Often	Almost Always
I like what I look like in pictures.	1	2	3	4	5
Other people consider me good looking.	1	2	3	4	5
I'm proud of my body.	1	2	3	4	5
I am preoccupied with trying to change my body weight.	1	2	3	4	5
I think my appearance would help me get a job.	1	2	3	4	5
I like what I see when I look in the mirror.	1	2	3	4	5
There are lots of things I'd change about my looks if I could.	1	2	3	4	5
I am satisfied with my weight.	1	2	3	4	5
I wish I looked better.	1	2	3	4	5
I really like what I weigh.	1	2	3	4	5
I wish I looked like someone else.	1	2	3	4	5
People my own age like my looks.	1	2	3	4	5
My looks upset me.	1	2	3	4	5
I'm as nice looking as most people.	1	2	3	4	5
I'm pretty happy about the way I look.	1	2	3	4	5
I feel I weigh the right amount for my height.	1	2	3	4	5
I feel ashamed of how I look.	1	2	3	4	5
Weighing myself depresses me.	1	2	3	4	5
My weight makes me unhappy.	1	2	3	4	5
I am treated more positively because of my looks.	1	2	3	4	5
I worry about the way I look.	1	2	3	4	5
I think I have a good body.	1	2	3	4	5
I'm looking as nice as I'd like to be.	1	2	3	4	5