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GENDER DIFFERENCES IN INTRINSIC ORIENTATION AND VIEWPOINT

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Gender Differences in Intrinsic Orientation and Viewpoint

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Abstract

The relationship between gender differences and perspective change in searching a pair of images was examined in an experiment on gender differences in intrinsic orientation and viewpoint. Participants found the differences in twelve pairs of various gender stereotyped scenes. I predicted that both males and females would take longer to find the differences when there was a perspective change in the pair of images they were looking at. Additionally, I predicted that males would find differences more quickly in scenes that depicted masculine objects. On the other hand, I predicted that females would find differences more quickly in scenes that depicted feminine objects. Results suggest that perspective change and gender differences do influence the difficulty of a "find the differences" task.

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Introduction

Each day, people view their environments from various perspectives. When walking somewhere, there are various paths to take; when sitting on a bus, there are many seat choices; and when driving somewhere, there are multiple routes of travel. Every time people chose a different path, seat, or route, they are looking at the world from a different angle. A goal of this study is to explore how different perspectives can either benefit or disadvantage people.

Males and females tend to adapt to changed environments using different methods. Generally, women tend to focus more on analyzing the individual objects that they encounter in their environments whereas men tend to focus more on the holistic view of the setting they are in (Alyman & Peters, 1993). This study aims to explore the different cognitive processing skills of males and females when looking at images from different perspectives.

Cognitive researchers explore the cognitive traits that differ between males and females. These cognitive traits include perception, motor performance, reasoning, judgments, knowledge and memory. After examining how men and women perform on cognitive tasks, researchers discovered that men outperform women in certain visuospatial tasks, such as mentally rotating a 3-dimensional object. However, women outperform men when trying to memorize the location of objects in an image (LeVay & Baldwin, 2009). Therefore, men and women both have different cognitive processing skills that can aid them in a "find the differences" task.

A goal of this paper is to explore how differences in the intrinsic orientation and viewpoint of a pair of images can influence the time it takes to find differences in the images. Research shows that object recognition performance is more accurate when the object is viewed from a familiar view vs. a novel view. Additionally, performance at a novel view will decrease when the angular distance between the novel view and the closest study view increases

(McNamara, Weimin, & Xiaoou, 2009). This research can have implications in different areas. For example, when in a classroom environment, people tend to recall information more quickly when seated in a similar seat location every class (Vaught, 2007). This is because the location of learning remains familiar and is at the same perspective within the classroom. The student is hearing the professor and seeing the professor with a constancy that is necessary for learning. Therefore, it is important to further replicate results that prove objects from a familiar view are more identifiable than objects from a novel view.

When someone performs a "find the differences" task, it is important that they recognize the intrinsic orientation of the layout they are working with. Both object and scene recognition depend on identification of the intrinsic orientation axis. Identifying intrinsic orientation can influence shape (object) recognition and perception. For example, if a square is tilted 45° then someone could view it as a tilted square or a diamond depending on what is considered the top of the shape. In this study, participants are finding the differences in a pair of images where one of the images is taken 30° to the right of the intrinsic orientation axis and one image is taken 30° to the left of the intrinsic orientation axis. Therefore, it is important for participants to mentally reorient the images in relation to the intrinsic orientation axis so they can accurately find the differences between the image pair. The results of a study done on "Intrinsic Orientation and Study Viewpoint in Recognizing Spatial Structure of a Shape," indicate that people have an easier time identifying a shape that is not altered in its orientation. Once the shape was changed in orientation, participants needed to align two intrinsic orientations, the original orientation and the altered orientation, in order to identify the original shape (McNamara et al., 2009). Thus, in order for an observer to complete a "find the differences" task more quickly and easily, an image pair must consist of scenes taken from the same angle rather than from different angles. One

important consideration here is that since males are better with mental rotation of 3-dimensional objects, they should have an easier time rotating the objects and scenes in this task. However, both males and females should have more accuracy overall when finding differences in an image pair of the same perspective over image pairs that are different perspectives.

Gender differences can also play a role in "find the differences" tasks. During the first year of an infant's life, they develop a distinction between typical masculine and feminine toys. In developmental studies, toy preference tests are implemented in order to observe the toys that males and females prefer to play with (Raag, 1999). For example, boys prefer to play with toy vehicles, weapons, balls, and construction toys while girls prefer dolls and toy kitchen implements (LeVay & Baldwin, 2009). The cognitive schemas that develop in children, with respect to toys, tend to remain consistent throughout development. Thus, as a child matures, there is still a remembrance and an attachment to certain gendered toys. Therefore, college students may retain this attachment and selectively attend to gender-specific objects. More specifically, it is expected that males will discover stereotypical masculine objects before feminine objects, and females will discover stereotypical feminine objects before stereotypical masculine objects in a "find the differences" task. One goal of this paper is to examine how gender can influence the saliency of stereotypical gendered objects in a "find the differences" task. By examining whether males find masculine objects or whether females find feminine objects, people can better understand how gender operates as an ingrained framework that can influence an individual’s decisions, household tasks, and professional roles.

Another important component of a "find the differences" task is the difficulty observers have in noticing large changes in visual scenes (change blindness). A common change blindness task is called the 'flicker' task. In this task, an original and modified scene alternate

continuously until an observer finds a change in the images. Interestingly, this task can be extremely difficult and many people take a long time to find even the most noticeable of differences. For example, 50% of people do not notice when two cowboys sitting down exchanged heads (Rensink & Simmons, 2005).

The findings on change blindness suggest that there are certain attentional priorities which operate throughout a "find the differences" task. In an experiment that tested this idea, researchers found that semantically important changes in naturalistic scenes were detected with more ease than less semantically important changes. Possibly, this pattern occurs because attention is preferentially drawn to interesting/important objects in a scene, which would mean that changes of these objects could be detected more rapidly and accurately (Collis, Findlay, Fletcher, & Leekam, 2009). Alternatively, the central objects of interest are physically salient in the scene, rather than semantically important. This can be confirmed by research that compares change-detection rates of inverted or upright scenes in two different presentation styles (Klein & Shore, 2000). From these findings, it can be hypothesized that males will find masculine objects more easily when viewing a pair of images because the objects are more salient to them. This reasoning also applies to females finding feminine objects more easily.

In order to verify the gender of the naturalistic scenes and the artificial scene objects used in this experiment, participants completing a different study were asked to rate the scenes and objects on a scale ranging from 1-7, with 1 being most feminine, 7 being most masculine, and 4 being most neutral. These participants would have an unbiased view of the intent of the experiment, and would base their ratings solely on how masculine or feminine they believed the scenes or objects to be. Six naturalistic scenes were rated and fourteen artificial objects were rated (See appendix of masculine and feminine objects).

In this experiment, participants viewed a pair of images that showed objects in a natural or artificial scene. In the natural scenes, objects were arranged in a section of actual bedrooms of various males and females. In the artificial scenes, objects that students in lab group viewed as stereotypically male or stereotypically female were arranged in a 3' x 3' light box. The participant viewed the image pairs either from the same angle or from different angles, and tried to identify differences between the pairs of images. Each image pair was a color photograph of a scene on an 8.5 x 11 sheet of cardstock. The change in perspective of the image pairs and the gender of the participant were the independent variables. The dependent variables were the time it took for a participant to find differences and the order in which differences were found.

Method

Participants. Fifty undergraduate students from The Pennsylvania State University enrolled in introductory psychology courses participated in this study and were compensated for their time with class credit. Twenty-five males and 25 females participated in the study. Fifty-two females and 32 males participated in the verification of gender of artificial objects and naturalistic scenes part of the study.

Design. This study was a 2 x 2 x 2 mixed factorial. Gender varied between subjects, and object/image type (masculine or feminine) and perspective (same or different) varied within subjects.

Definitions. A *scene* can be defined as a set of objects taken in a gendered context. There are 2 types of scenes: a naturalistic scene and an artificial scene. A *set* is defined as a group of objects that are stereotypically feminine and/or stereotypically masculine in each scene. An *image* is defined as the original or altered scene within a varying perspective. A *pair* is defined as two images of the same scene. *Altered objects* or *differences* are defined as objects

that are removed, replaced, or flipped over.

Materials. There were 24 image pairs of artificial scenes, and there were 24 image pairs of naturalistic scenes. Within the 24 image pairs of artificial scenes, there were 6 sets of object arrangements. The 6 sets of object arrangements contained 4 photos each (left-left, right-right, left-right, and right-left), thus equaling 24 image pairs (See Figure 2). Within the 24 image pairs of naturalistic scenes, 3 sets of object arrangements were from female rooms and 3 sets of object arrangements were from male rooms. The 6 sets of object arrangements contained 4 photos each (left-left, right-right, left-right, and right-left), thus equaling 24 image pairs (See Figure 2).

In the artificial scenes, there were 14-27 different objects in the entire scene. Within these separate scenes, there were 5-6 altered masculine objects and 5-6 altered feminine objects for each image pair. The objects ranged from school supplies to personal products to toys (See Appendix of Artificial Scenes).

In the naturalistic scenes, there were naturally occurring arrangements of objects appearing in a 3’ x 6’ approximate section of a male or female room (See Appendix of Natural Scenes). Within these scenes, there were 5-6 altered objects for each image pair.

Game pieces were used to keep track of the order of differences. The game pieces were numbered from 1-12 because there was a maximum of 12 differences in each image pair. Participants were asked to place the game pieces on the objects in the order they found them. This made it easier for research assistants to record the order participants found differences. The game pieces were small enough to place on objects within each image pair.

Formation. The artificial scenes contained objects that were evaluated by lab group members as stereotypically masculine or stereotypically feminine.

For each different set of scenes, there were four photos taken of naturalistic rooms or artificial objects. The main axis of the photo was centered on and perpendicular to a room boundary or the boundary of the light box where artificial scene pictures were taken (See Figure 1). In two of the naturalistic scenes, objects found on the floor were grouped together and arranged for photographic purposes (See Appendix of Natural Scenes). For the first photo, the image pair was taken thirty degrees to the left (left-left) of the main axis of the scene. In the second photo, the image pair was taken thirty degrees to the right (right-right) of the main axis of the scene. In the third set of image pairs, two scenes were combined. There was one image pair taken thirty degrees to the left of the main axis of the scene, and one image pair taken thirty degrees to the right (left-right) of the main axis of the scene. In the fourth set of image pairs, two scenes were also combined. There was one image pair taken thirty degrees to the right of the main axis of the scene, and one image pair taken thirty degrees to the left (right-left) of the main axis of the scene (See Figure 2).

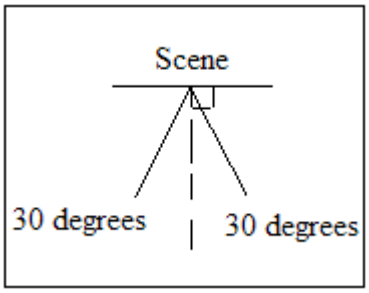

Figure 1 Photos taken from 30° to the left or right of the perpendicular/main axis in a scene.

Image Pair	Side Relative to Main Axis	Original/ Altered Image	30° To The Left of Main Axis	30° To The Right of Main Axis
1	Left	Original	X	
	Left	Altered	X	
2	Right	Original		X
	Right	Altered		X
3	Left	Original	X	
	Right	Altered		X
4	Right	Original		X
	Left	Altered	X	

Figure 2 One scene with four image pairs: left-left, left-right, right-left, right-right

Equipment. E-prime was used to create a computer program. The experiment was completed on a standard Windows computer with a CRT monitor. The computer randomly selected image pairs within the constraints of the design. Also, the computer was used by experimenters as a "stopwatch" to record how long it took participants to find the differences in each image pair.

Procedure. Informed consent forms were administered. The participant looked at an image pair side by side in front of them on a table, and searched for differences in each of 12 trials. Before each trial, participants closed their eyes and were told not to look as the research assistant set up the trial. The participant had up to 3 minutes to find the differences, and the participant was told how many differences to find in each trial. The research assistants

recorded the order in which participants found objects in the image pairs. In order to keep track of the order of differences, the participant placed game pieces on the pair of images. Game pieces were labeled and used in numbered order as the participant found differences. They could be placed on either scene in the image pair, and were to always be placed on an object. These procedures were repeated for all 12 trials (See appendix of Instructions).

Results

Three sets of analyses were performed in SPSS. The combined scene analysis and the artificial scene analysis used a 2 (participant gender) x 2 (match-same vs. difference perspective) mixed-model ANOVA. The analysis on masculine and feminine naturalistic scenes used a 2 (participant gender) x 2 (scene-male vs. female) mixed-model ANOVA. The first analysis combined data over scene types (Masculine, Feminine, and Artificial) and looked at response time and proportion correct. The second analysis was performed on masculine and feminine naturalistic scenes and looked at response time and proportion correct. The final analysis was performed on artificial scenes and looked at response time, proportion correct and the order in which masculine and feminine objects were identified.

All Scenes (Masculine, Feminine, and Artificial). This analysis combined data over scene types. Response time and proportion correct were analyzed using a 2 (participant gender) x 2 (match – same vs. different perspective) mixed-model ANOVA. On average, males and females found the differences in image pairs in 65.83 seconds. There was no significant effect of participant gender on response time, $F(1,61)=1.05$, ns. There was no interaction of participant gender and match, $F(1,61)=.008$, ns. Therefore, males and females had similar response times for same and different perspective image pairs. Overall, participants found differences more quickly in same perspective image pairs ($M=54.95$ s) as compared with

different perspective image pairs (M=76.72 s). There was a significant main effect of match on response time, F (1,61)=62.76, p<. 05.

On average, participants found the correct objects 96% of the time (SE=.005). There was no significant effect of participant gender on proportion correct, F (1,61)=.1, ns. There was no interaction of participant gender and match, F (1,61)=.052, ns. Therefore, both males and females correctly identified differences when looking at image pairs of same and different perspectives. Overall, both males and females were more successful when finding the differences in an image pair of the same perspective (M=.98) rather than a different perspective image pair (M=.94). There was a significant main effect of match on proportion correct, F (1,61)=20.67, p<. 05.

Masculine and Feminine Scenes. These scenes were the naturalistic scenes in the experiment. Response time and proportion correct were analyzed using a 2 (participant gender) x 2 (scene – male vs. female) mixed-model ANOVA. On average, males and females found the differences in image pairs in 48 seconds. There was no significant main effect of participant gender on scene, F(1,61)=.12, ns. There was no interaction of participant gender and scene, F (1,61)=.02, ns. Therefore, males and females did not find differences more quickly in naturalistic scenes of their same gender. Both males and females had similar response times when finding differences in male scenes and female scenes (M=48 s). There was no significant main effect of scene on response time, F (1,61)=1.32, ns. Overall, no significant effects emerged from this analysis.

On average, participants found the correct objects 97% of the time (SE=.007). There was no significant main effect of participant gender on scene, F(1,61)=.98, ns. There was no significant interaction of scene and participant gender, F (1,61)=.83, ns. Therefore, males and

females got the same proportion correct when finding differences in male or female naturalistic scenes. There was no significant main effect of scene on proportion correct, F (1, 61)=.69, ns. Overall, no significant effects emerged from this analysis.

Artificial Scenes. Response time, proportion correct, and identification of masculine/feminine objects were analyzed using a 2 (participant gender) x 2 (match – same vs. different perspective) mixed-model ANOVA. On average, males and females found the differences in image pairs in 85.07 seconds. There was no significant effect of participant gender on response time, F(1,57)=2.15, ns. There was a marginally significant interaction of participant gender and match, F (1,57)=2.88, p<. 1 (See Figure 3). Therefore, males and females had different response times when looking at artificial scene image pairs of same and different perspectives. Overall, both females and males found differences in same perspective image pairs more quickly (M=76.52 s) than in different perspective image pairs (M=93.63 s). In addition, females found differences more quickly in image pairs of the same perspective (M=69.38 s) and different perspective (M=91.77 s) than males. Males found differences in image pairs of the same perspective on average after 83.65 seconds and found differences in image pairs of different perspectives on average after 95.49 seconds. Males were only hurt a little by the change from same to different perspectives while females were hurt a lot. Males only had a difference of 11 seconds when finding differences in a same perspective image pair vs. a different perspective image pair while females had a difference of 23 seconds. There was a significant main effect of match on response time, F (1, 57)=30.31, p<. 05.

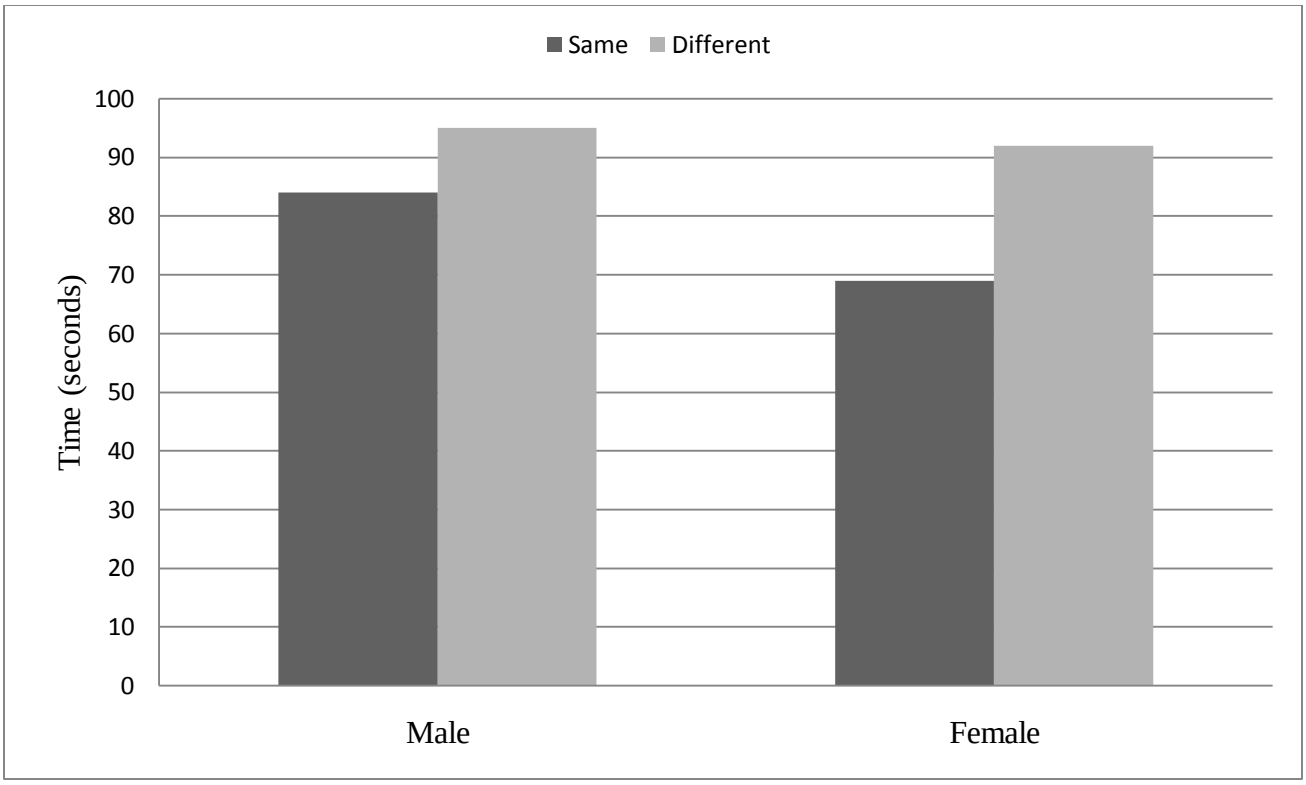

Figure 3 Response time and gender interaction in artificial scenes

On average, males and females found the correct objects 96% of the time (SE=.011). There was no significant effect of participant gender on proportion correct, F (1,57)=.25, ns. There was no interaction of participant gender and match, F (1,57)=1.76, ns. Therefore, males and females found the same percentage of differences when looking at image pairs of same and different perspectives. Overall, both males and females were more successful when finding the differences in an image pair of the same perspective (M=.97) rather than a different perspective image pair (M=.94). There was a significant main effect of match on proportion correct, F (1, 57)=11.95, p<. 05.

The final analysis looked at a dependent variable pertaining to the order that the participant found differences. This variable was the difference in average position in order that male and female objects were found. Positive values indicated that feminine objects were

found earlier. It was expected that males would find masculine objects before feminine objects and females would find feminine objects before masculine objects. There was no significant effect of participant gender on identification of masculine and feminine objects, $F(1,57)=.66$, ns. Both males and females did not identify masculine or feminine objects in a certain order when finding differences ($M=.49$). There was no interaction of participant gender and match, $F(1,57)=.29$, ns. Therefore, males and females did not find stereotypical masculine or feminine objects in a particular order when looking at either an image pair of the same or different perspective. There was no significant main effect of match on identification of masculine and feminine objects, $F(1,57)=2.02$, ns. Overall, no significant effects emerged from this analysis.

Verification of Gender of Artificial Objects and Naturalistic Scenes. Verification of the gender of artificial objects and naturalistic scenes was analyzed using a 2 (participant gender) x 2 (gender of objects and scenes - masculine vs. feminine) mixed-model ANOVA. On average, participants rated artificial objects and scenes as a 3 ($M=3.683$) when using the scale ranging from 1-7, where 1 represented more feminine objects or scenes, and 7 represented more masculine objects or scenes. There was no interaction of participant gender and the ratings of the gender of objects and scenes $F(1,82)=.085$, ns. Therefore, males and females did not identify the gender of objects and scenes differently. Overall, participants rated the feminine scenes and objects as more feminine on the scale from 1-7 ($M=1.879$), and participants rated the masculine scenes and objects as more masculine on the scale ($M=5.487$). There was a significant main effect of the masculinity vs. femininity of the objects and scenes on verification of the gender of the objects and scenes $F(1,82)=1542.74$, $p<.05$.

Discussion

The study examined gender differences in intrinsic orientation and viewpoint of image pairs. It was theorized that participants would take more time to find the differences in image pairs of different perspectives rather than image pairs of the same perspective. Results from previous studies suggest that objects are more easily identified from a familiar view than from a novel view (McNamera et al., 2009). The findings in this study confirm that "find the differences" tasks completed from images of the same angle result in a faster response time than when completed from images of two different angles. Also, it was expected that males would find differences more quickly in stereotypically masculine scenes, and females would find differences more quickly in stereotypically feminine scenes. In addition, for artificial scenes, it was predicted that males would find stereotypically masculine objects over stereotypically feminine objects, and that females would find stereotypically feminine objects over stereotypically masculine objects. However, there were no significant results when looking at the gender stereotyped scene response times or the gender stereotyped masculine/feminine object's response times.

Interestingly, the analysis of artificial scenes yielded a marginally significant interaction of gender and match. This interaction shows that, on average, females completed the "find the differences" task more quickly regardless of the perspective of the image pair. However, males, on average, were not slowed as much relative to different perspectives of image pairs. In other words, males were not hurt as much with the change in perspective, indicating that males view image pairs more holistically and are better with three-dimensional rotation tasks.

When looking at the results for females, one may think it counterintuitive that they should find differences more quickly in both the same perspective and different perspective task.

While it was originally expected that females would not be as effective in finding the differences, the results show otherwise and there are various explanations for this. One reason females demonstrated better performance when finding differences is because of their ability to analyze and memorize individual objects within a scene. This is also known as object-location memory (Hassan & Rahman, 2007). In addition, females may complete "find the differences" tasks, which are generally done from the same perspective, more frequently. For example, these types of tasks may be in magazines created for a more feminine audience. Another reason females were faster with finding differences may be because of the objects used in the scenes. Although no significant results were found when looking at gender stereotypes in scenes or objects, there is a possibility that females, on average, are more sensitive to gendered objects. Since participants did not rate every single object used in the artificial scenes, there is potential for the objects to be considered more feminine or gender neutral. Therefore, more ratings of all the objects would have helped to see if that was the case.

The hypothesis about males finding stereotypical masculine objects before stereotypical feminine objects and females finding stereotypical feminine objects before stereotypical masculine objects in artificial scenes did not yield any significant results. In addition, the hypothesis about males finding differences in naturalistic masculine scenes more quickly and females finding differences in naturalistic feminine scenes more quickly was not confirmed. Therefore, these hypotheses could be wrong and reflect no interaction between gender and masculine/feminine objects in artificial scenes as well as no interaction between gender and naturalistic scenes or there could be multiple limitations of this study that must be considered.

There were a few limitations in this study that should be examined and improved for future studies. First, in the artificial scenes, objects such as box cutters, scissors, and pink

markers were used to represent masculine and feminine objects. However, males and females both use these objects, but it was hoped that certain colors or tools would aid in the masculinity or femininity of the objects. In future studies, it would be best to verify that all objects are masculine or feminine in nature because the objects used in this study may not be a good representation of gender stereotypes. A second limitation in this study includes having a small sample size. If the sample size were larger, then it would be easier to measure individual differences. By asking participants about their experience with "find the differences" tasks and their mental rotation skills, then it would be easier to understand why some males and/or females completed the experiment with particular strategies or abilities. In future studies, both the gendered objects should be altered and the sample size should be larger to ensure these results are accurate.

A study on "Change blindness in driving scenes" researched how location of objects can influence their saliency (Crundall, Underwood, & Galpin, 2009). This is a more realistic example of how change blindness can influence situations. This study relates to “find the differences” tasks because it explains the way in which people may search for objects in a scene. In this study, researchers used change blindness as a way to explain driving accidents. Because of the selective attention drivers may give to billboards or attractive pedestrians that may catch the driver’s eye, they are more likely to get into an accident. These distractions are not relevant to driving, but provide a diversion from the monotonous task of driving for hours on end. This study shows that irrelevant changes to a scene can make people take more notice of them. Potentially, participants in the study on gender differences in intrinsic orientation and viewpoint could have searched for objects that looked out of place or caught their attention rather than looking for objects that reflected their gender.

Also, if an observer uses an object-location strategy to find differences between a pair of images, then this could rule out the hypothesis that the gender stereotypical objects are more salient depending on an observer's gender (De Hann, Izendoorn, & Postma, 1998). The object-location strategy may explain the method participants used during the "find the differences" task. In other words, participants did not search for objects based on their gender, rather they concentrated more on the relative location of objects to other objects in an image pair.

Through the study on gender differences and intrinsic orientation and viewpoint we have learned about the performance of males and females in "find the differences" tasks. We discovered that the nature of male and female spatial skills as well as perspective changes do make a difference in terms of "find the differences" tasks. The significant results that emerged from this experiment can be helpful in understanding how males and females learn and think differently. Males tend to think in a holistic manner when analyzing scenes and objects while females tend to think of individual objects and analyze scenes. The information collected from this study can be applied to future studies that look at the mental rotation and object-location methods that males and females use in change blindness tasks. Also, these results can be generalized to real world settings. When males and females look at a blueprint of a house, males will be more likely to use distance concepts and cardinal directions in order to understand it. Generally, they will also be able to understand where one area is in relation to another more easily than women. Women will be more likely to focus on individual details and specific areas of the blueprint. As a whole, men would be more likely to remember the relative positions of where certain areas were in relation to other areas, whereas women would be more likely to remember individual sections of the blueprint as well as the details within those sections. Hopefully, researchers will continue to explore the unique differences that exist between the

minds of men and women. By studying these differences people can better understand not only the learning processes and professional skills of men and women, but the ways in which males and females perceive their environments and the world as a whole.

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Appendix

Artificial Scene Objects:

Feminine Objects





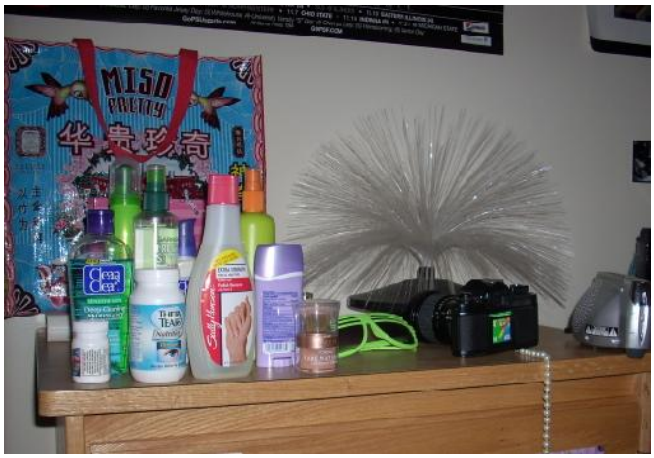

Masculine Objects







Naturalistic Scenes:
Feminine Scenes



Masculine Scenes

Objects grouped together for photographic purposes:

Instructions:

-If object is moved, put one game piece on object

-If object is replaced, count two different objects (new one and old one)

-Each object is only counted once

-Do the best you can, but if you need clarification on what an object is you may ask experimenter

-5, 6, 10, or 12 differences must have game pieces on them

-Set up game pieces between each trial in order (1-12), and place them on the objects in the order you find them

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HONORS & AWARDS

Schreyer Honors College, Pennsylvania State University, University Park — Fall 2008-present
Phi Eta Sigma, Pennsylvania State University, University Park — Fall 2006-present
Dean's List, Pennsylvania State University, University Park — Fall 2006-present
Psi Chi, Pennsylvania State University, University Park — May 2009-present
Psi Chi Undergraduate Research Conference Best Poster Award — March 2010

RESEARCH INTERESTS

Cognitive research on gender differences in perspective and viewpoint tasks
Post Traumatic Stress Disorder & affect on future relationships
Child development & artistic interventions to cure childhood depression
Types of attachment & affect on future relationships
Response to neutral stimuli after traumatic events

RESEARCH EXPERIENCE

Research Assistant — Fall 2008-Spring 2009
Cognitive Research Lab, Principal Investigator: Richard Carlson, Ph.D., Pennsylvania State University, University Park

- Working on thesis about gender differences in intrinsic orientation and viewpoint
- Run studies with undergraduate Penn State students at the Psych 100 level, attend weekly lab meetings, test new studies

Research Assistant — Fall 2008-Spring 2009
Relationship Research Lab, Principal Investigator: Amy Marshall, Ph.D., Pennsylvania State University, University Park

- Conduct phone interviews with potential aggressive couples in the State College area using Survey Crafter Pro software
- Edit various surveys, investigate various EPrime programs for accuracy, completed a stroop task that assisted graduate student with research

PAPERS & POSTERS

Talbot, A.B. & Harris, J. (2008) *Gender Differences in Attitudes Towards Homosexuals*. Pennsylvania State University, University Park, Pennsylvania.

Talbot, A. & Carlson, R. (2010) *Gender Differences in Intrinsic Orientation and Viewpoint*. Pennsylvania State University, University Park, Pennsylvania.

PRESENTATIONS

The Pennsylvania State University Undergraduate Research Conference Spring 2010
The Pennsylvania State University Psi Chi Research Conference Spring 2010

RELATED SKILLS

Experienced with computer applications such as SPSS, Eprime, and PsychInfo
Superior organizational skills
Creative & artistic skills

EXTRACURRICULAR ACTIVITIES

The Second Mile, FRIENDS Program: State College, Pennsylvania Fall 2007-present

- Spend time with at-risk children once or twice a month in various settings
- Gain experience working with a diverse group of children with various disabilities, broken households, and low SES backgrounds

THON, IFC Panhellenic Dance Marathon: Student Philanthropy Fall 2006-present

- Outfitting Chair - Designed our committees shirts & submitted them to a licensed printer in the State College area
- Public Relations Committee, Fall 2007-Spring 2008 - Photographed various events leading up to thon such as 100 Days Until THON, The THON 5K, & The Family Carnival; Photographs featured in the THON magazine called The Diamonder
- Rules & Regulations Committee, Fall 2006-Spring 2007, Fall 2008-present - In charge of planning Icebreakers for our group & helping fundraise for children with Cancer