THE EFFECT OF PRIMING A THIN IDEAL ON THE
SUBSEQUENT PERCEPTION OF CONCEPTUALLY RELATED
BODY IMAGE WORDS

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ABSTRACT

There is a substantial amount of empirical evidence in support of the claim that the thin ideal portrayed by the mass media leads to body image dissatisfaction. Furthermore, a disturbance in the perception of body image is an essential feature of eating disorders. The Stroop task has been adapted to provide a measure of selective processing for body image related words in eating disordered individuals. Building upon this previous work, the present study was designed to examine the effect of priming the thin ideal on the subsequent perception of body image related words in participants without an eating disorder. In both Experiments 1 and 2, half of the participants were primed by viewing slim female models, and half by viewing advertisements for gender-neutral shoes. In Experiment 1, all participants completed a Stroop task for three categories of stimuli: neutral words (BOOKS), shoe words (CLOGS), and body image words (THIGHS). It was hypothesized that the group primed with the thin ideal would exhibit delayed color-naming times for the body image words relative to the group primed with gender-neutral shoe ads. In Experiment 2, the eye-tracking paradigm was used to further investigate the hypothesized priming effect. In particular, this paradigm was chosen for its ability to provide fine-grained temporal information in order to examine how the predicted effect unfolds over time. It was hypothesized that participants primed by the thin ideal would spend more time fixating body image related distractor words relative to the group primed with gender-neutral shoe ads.
The results demonstrate a pattern that is consistent with the predictions, but the analyses failed to reach significance. While the lack of findings is disappointing, it was encouraging to discover that the eye-tracking paradigm is a sound methodology for investigating information processing in studies with clinical implications. The results of this study encourage future research using the eye-tracking methodology for investigations of information-processing in eating disorders.
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CHAPTER I
INTRODUCTION

Mass media often promotes a thin ideal standard that leads many females to feel badly about their weight and shape (Groesz, Levine, & Murnen, 2001). There is a vast amount of research on the thin ideal shown by the mass media, specifically visual media such as magazines and television. In their meta-analytic review of the effects of experimental presentations of the thin ideal on the body image of females, Groesz, et al. (2001) found that in general body image dissatisfaction was significantly increased for females after viewing thin media images. Yamamiya, Cash, Melnyk, Posavac, and Posavac’s (2005) study found that even a brief exposure to thin ideal media images results in a more negative body image state than does exposure to images of neutral objects.

Such body image dissatisfaction is of particular concern given that a disturbance in the perception of body image is an essential feature of eating disorders (American Psychiatric Association, 2000). Furthermore, the media’s role in body dissatisfaction could become a vicious cycle if after the development of an initial dissatisfaction, patients with an eating disorder paid extra attention to exactly the types of stimuli that led
to the dissatisfaction in the first place. Indeed there is evidence that patients selectively attend to stimuli related to their concerns, and that this attentional component might be one way in which eating disorders are maintained (Cooper & Fairburn, 1992). Consequently, a variant of the Stroop task (Stroop, 1935) has been adapted to provide a measure of selective processing for body image related words in eating disordered individuals.

In the traditional Stroop task, participants see words in various colors and their task is to name the color in which the word appears, and not to read the word itself. When the words themselves are color words that conflict with the required response (e.g., the word is blue in red font, and their task is to say "red"), participants typically experience a difficulty inhibiting their automatic reading response, which in turn results in slowed processing and increased errors. In the variant of the Stroop task relevant to the current proposal, some of the words are body image related words (e.g., thigh), and patients with eating disorders have difficulty inhibiting these words, and thus performing the task (e.g., Ben-Tovim, Walker, Fok, & Yap, 1988; Dobson & Dozois, 2004).

The current study was designed to examine the effect of priming the thin ideal on the subsequent perception of body image related words in participants without an eating disorder. It was hypothesized that a group primed by the thin ideal would be more distracted by the presence of body image related words relative to a control prime group. Specifically, the thin ideal prime group was predicted to exhibit slower color naming reaction times (RTs) for the body image related words than the control prime group. An important aim of this study was to inspect one of the ways in which exposure to the thin
ideal in the mass media may have adverse effects on participants without an eating disorder.

Importantly, the current study extends previous work by adding the eye-tracking paradigm. Monitoring eye movements allows word perception to be studied more naturally than other types of laboratory tasks and with immediate precision (Tanenhaus & Spivey-Knowlton, 1996). Participants in an eye-tracking task are not asked to make artificial judgments about what they are hearing or seeing. Instead, they simply hear a spoken word, and click on the corresponding word on the computer monitor, which appears on the screen along with some number of additional distractor words. Pairing spoken language with stimuli in our visual environment is arguably a much more natural task than, for example, having to name the color of the font of a word while attempting to inhibit our automatic reading response. Furthermore, the eye-tracking paradigm was hypothesized to be particularly useful in examining whether the primes affect early or late stages of processing because participants’ fixations are collected every 1 ms throughout each trial. Consequently, such data provide a record of when participants begin to fixate the target word, as well as whether some of distractor words are fixated earlier and more often than other distractor words. This eye-tracking paradigm, therefore, offers a powerful test of the hypothesis that participants primed with the thin ideal would spend more time fixating body image related distractor words relative to the control prime group.

Again, because the eye-tracking paradigm provides a high degree of temporal resolution, we were able to examine how the predicted effect was unfolding over time. There were at least three possibilities. First, such effects may manifest themselves
relatively early during processing, and then dissipate relatively quickly. Second, such effects may not have any immediate effect on early perceptual processes, and may only manifest themselves relatively late during processing. Third, such effects may manifest themselves relatively early during processing and continue to have an impact throughout the entire time-course of processing.

The current study combined research on thin ideal media with normal participants with the selective processing found in eating disorders. Supplementing the Stroop task measure with the eye-tracking paradigm was an innovative addition to previous research that was expected to stimulate new examinations of information processing. Future research should explore the use of eye-tracking as a measure of information processing in eating disorders, and potentially other types of clinical disorders as well.
CHAPTER II

LITERATURE REVIEW

2.1 Thin media images

Exposure to media images of thin women can lead to body image dissatisfaction in young women (Yamimiya et al., 2005). Pinhas, Toner, Ali, Garfinkel, and Stuckless (1998) examined the effect that the ideal of female beauty has on mood and body satisfaction. They found that women who are exposed to thin images experience greater body dissatisfaction and depressed mood than women exposed to images that contained no pictures of people. Furthermore, numerous studies have examined the effect of thin ideal media on body image satisfaction and have found similar results (see Carney & Louw, 2006; Groesz et al. 2001; and Posavac, Posavac, & Posavac, 1998). Because contemporary media images of ideal female attractiveness are exaggerated (e.g., removal of imperfections via airbrushing and photoshopping) and emphasize thinness, women are very likely to see a difference between their bodies and that of the media standard when comparing their bodies to those of fashion models (Posavac et al., 1998). Additionally, media influences are typically considered to be an important source from which body image attitudes originate (Cafri, Yamamiya, Brannick, & Thompson, 2005). Young women look to society’s standards of female beauty to form their own personal ideal for
physical attractiveness (Polivy, Garner, & Garfinkel, 1986). In theory, media exposure and the consequent body dissatisfaction could increase the risk for eating disorder pathology.

2.2 Body image dissatisfaction in eating disorders

A disturbance in the perception of body image is an essential feature of eating disorders, and most individuals with eating disorders are preoccupied with thoughts concerning body shape and weight as well as food (American Psychiatric Association, 2000). Media's role in body dissatisfaction could become a vicious cycle if after the development of an initial dissatisfaction, patients with an eating disorder increased their attention to exactly the types of stimuli that led to the dissatisfaction in the first place. Research using cognitive theories of eating disorders has found that biased information processing in favor of dysfunctional attitudes about body appearance plays an important role in the development and maintenance of eating disorders (Johansson, Ghaderi, Andersson, 2005). Cooper et al. (1992) investigated selective processing of weight and shape related words in patients with eating disorders and found that patients selectively attend to stimuli related to their concerns, and that this attentional component might be one way in which eating disorders are maintained. Consequently, the Stroop task has been adapted to provide a measure of selective processing for body image related words in eating disordered individuals (Ben-Tovim, Walker, Fok, & Yap, 1989).

2.3 The Stroop Effect

In the traditional Stroop paradigm, the words red, blue, green, brown and purple are presented to participants. The color words are not printed in the colors they name, but are printed in each of the other four colors (e.g., the word red is printed in blue, green,
brown, and purple font), allowing the words and colors to be presented simultaneously.

One of the aims of the Stroop task is to examine the interfering effect of word stimuli on color naming (Stroop, 1935). For example, when the word blue is printed in green ink and the correct response is ‘green’, participants find it hard to inhibit their automatic reading response (in this case, incorrectly responding ‘blue’), and the result is slowed processing and increased errors. This phenomenon is called The Stroop Effect.

Klein (1963) was the first to extend the Stroop task by attempting to find a Stroop-like effect in terms other than color words. He varied the verbal text beginning with words closely related to color, then common and rare words, and finally, nonsense syllables (Klein, 1963). He found that attention-catch words cause more color naming interference than neutral words. Many studies examining a Stroop-like effect for emotional words followed, and it is now generally recognized that color-naming performance is delayed for words related to a fear or emotional concern (Dyer, 1973; Mathews & Sebastian, 1993;).

2.4 The Stroop paradigm and eating disorders

Research using a variant of the Stroop paradigm has repeatedly demonstrated that women with eating disorders are slower than controls to name the color of words related to eating, weight and shape (Channon, Hemsley, & de Silva, 1988; Cooper et al., 1992; Davidson & Wright, 2002). Typically, these studies compare a group of eating disordered patients to a group of non-eating disordered controls. RTs for color naming of food and body shape words (e.g., CAKE and FAT) are compared with color naming of neutral words (e.g., BOOK). In their meta-analysis of Stroop interference for food- and body-related words, Johansson et al. (2005) confirmed the conclusions of numerous studies that
there is a Stroop interference effect in individuals with eating disorders compared to controls. Channon et al. (1988) reasoned that individuals with an eating disorder are preoccupied with thoughts about food and body shape. Their study had two important findings. First, individuals with an eating disorder were generally slower than controls to color name all categories of word stimuli, particularly, the food-related words. This finding is in line with previous research that suggests neurocognitive impairments in eating disorders. These impairments can be caused from a number of variables including dietary restraint, preoccupation with food and body image, and the aftereffect of having an eating disorder (see, e.g., Fowler et al., 2006; Green & Rogers, 1998). Second, their findings demonstrated once again that the Stroop paradigm is useful in measuring participants' current concerns. Additional studies have compared eating disorder patients with dieters and restrained eaters. The intent is to find out if such interference is specific to individuals diagnosed with eating disorders. Cooper et al. (1992) compared normal dieters, dieters with eating disorder symptoms, and non-dieters to patients diagnosed with Anorexia or Bulimia Nervosa. Only the dieters who reported a history of eating disorder symptoms exhibited delayed color-naming times, similar to a patient diagnosed with an eating disorder, for words related to eating, weight and shape. Normal dieters and non-dieting controls had similar results.

Cognitive theories suggest that this effect is equivalent to the information processing found in other emotional disorders (such as depression and anxiety). Individuals with these disorders seem to share an attentional bias and preoccupation with stimuli that represent a fear or current concern (Williams, Mathews, & MacLeod, 1996). Eating disordered individuals demonstrate biased information processing for stimuli
related to food and body shape, and thus, delayed color naming performance (Johansson et al., 2004).

Of interest to the current study is that some studies have found a Stroop-like effect in non-clinical control groups. Ray (1979) found that exam-anxious students were slower to color name words related to test taking. Individuals who were presented with difficult or insolvable anagrams also showed Stroop interference for threat-related words (Mogg, Mathews, Bird & MacGregor-Morris, 1990). Furthermore, Lundh and Czyzykow-Czarnocka (2001) examined the effect of priming on Stroop performance. They administered a questionnaire designed to measure separation fears, and found Stroop interference for separation-related words. The study most closely related to the current study examined the role of thin ideal priming on the color naming of negative self-referent words with participants who were dissatisfied with their bodies, but not diagnosed with an eating disorder (Johansson et al., 2004). The authors found that the body dissatisfied participants were slower to color name self-referent words as a result of the thin ideal prime. Johansson et al.'s (2004) priming paradigm was used in the current study.

Building upon previous work, the current study was designed to examine the effect that priming the thin ideal has on the subsequent perception of body image related words in participants without an eating disorder. It was hypothesized that a group primed with photos of thin models would be more distracted by the presence of body image related words in a later block of trials than a control group primed with photos of shoes. In other words, the thin ideal prime group should exhibit slower color naming times for the body image related words than the control prime group. In order to examine how the
predicted effect unfolds over time, and to examine earlier stages of processing, the eye-tracking paradigm used in Experiment 2 was used in addition to the Stroop paradigm used in Experiment 1.

2.5 Eye-tracking

The eye-tracking methodology has been used in a variety of clinical studies. For example, Rycroft, Rusted, and Hutton, (2005) used eye-tracking to examine the effects of nicotine on visual search tasks in young adult smokers. Eye-tracking has also been used to study smooth pursuit abnormalities in schizophrenia and has revealed a possible link between the abnormalities and a specific brain region, namely the frontal cortical area (Zanelli et al., 2005). Furthermore, eye-tracking has been used with spider-phobic patients (Gerdes, Alpers, & Pauli, 2008). Reaction times were measured during a visual search for letters where spiders were used as distractors. As predicted, Gerdes et al. (2008) found longer fixations on the spider distractors for the spider-phobic patients.

The eye-tracking paradigm allows for word perception to be studied in a more natural context and with immediate precision (Tanenhaus et al., 1996). Eye-tracking provides an unobtrusive and responsive measure of visual attention. According to Henderson (2005), “a complete theory of visual attention must include an account of eye movements” (p. 171). In the current study, eye-tracking is the more realistic and more natural measure of attentional bias. Moreover, the eye-tracking paradigm was predicted to be particularly useful in examining whether the primes affect early or late stages of processing.

It was predicted that participants primed with the thin ideal would spend more time fixating body image related distractor words relative to the group primed with a
neutral distractor. The predicted effects may manifest themselves relatively early during processing, and then dissipate over time. Alternatively, effects may not have any immediate impact on early perceptual processes, and only manifest themselves relatively late during processing. Finally, such effects may manifest themselves relatively early during processing, and continue to have an effect throughout the entire time-course of processing. Recent eye-tracking research has demonstrated that tracking eye movements to printed words provides the temporal characteristics of the word recognition process (McQueen & Viebahn, 2007).

2.6 Research Purpose

There were three aims of this research study. The first aim was to compare the effects of a thin ideal prime and a control prime on the subsequent processing of body image related words in participants without an eating disorder. It was hypothesized that the group primed with the thin ideal would be more distracted by the presence of body image related words. The second aim was to examine the time-course of this priming effect with the eye-tracking paradigm. In the eye-tracking experiment, participants primed by the thin ideal were expected to spend more time fixating body image related distractor words relative to the control prime group. The final aim of the current study was to examine one of the ways in which exposure to the thin ideal in media has adverse effects on participants without an eating disorder, and to encourage future research using the eye-tracking paradigm for studies of information-processing in eating (and other types of) disorders.
2.7 Specific Hypotheses

For Experiment 1, Hypothesis 1 – participants in the thin ideal prime group were not expected to differ overall from the participants in the control prime group. In other words, a main effect for prime type was not expected. Hypothesis 2 – participants’ mean RTs for the three word types were predicted to differ significantly. In other words, a main effect for word type was predicted. Hypothesis 3 – significant differences between word types as a function of prime type were predicted. Participants in the thin ideal prime group were expected to have slower color naming RTs for the body image related words than participants in the control prime group. More specifically, a prime type by word type interaction was predicted.

For Experiment 2, Hypothesis 4 - participants in the thin ideal prime group were not expected to differ overall from the participants in the control prime group. In other words, a main effect for prime type was not expected. Hypothesis 5 - mean distance to the target and each of the distractor words as a function of time was expected to reveal significant differences. In other words, a main effect of time was predicted. Hypothesis 6 - mean distance to the target for the four word types over the course of the trial were predicted to differ significantly. In other words, a main effect for word type and a time by word type interaction was predicted. Hypothesis 7 – significant differences between the four word types as a function of prime was predicted. In other words, a word type by prime type interaction was predicted. Hypothesis 8 – mean distances to the target for each word type were expected to differ over time as a function of priming group. In other words, a time by word type by prime type interaction was predicted.
CHAPTER III

EXPERIMENT 1: THE STROOP PARADIGM

3.1 Method

3.1.1 Participants. Fifty-six female undergraduate students were recruited from the Cleveland State University participant pool. All participants were included in the analysis and received credit for their participation. Participants were randomly assigned to one of the two priming conditions (n = 28 in each condition). Participants were told that they were taking part in a study investigating contemporary mass media images. Demographic information is presented in Table 1.

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<td>African American</td>
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<td>Other</td>
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3.1.2 Stimulus material. Pilot testing was carried out to choose the pictures used in the priming paradigm. Ten female undergraduate students were asked to rate 20 pictures of slim female models from underwear advertisements (downloaded from the Internet) on how much they thought the picture depicts the thin ideal standard portrayed by the mass media on a scale of 1 (not at all) to 5 (very much) (see Appendices A, B, & C for the informed consent, instructions, and a sample of the task for the pilot study). Thirteen pictures with ratings of 4 and above were chosen from the pilot study.

The priming paradigm consisted of thirteen pictures of slim female models from underwear advertisements (the thin ideal condition) and 13 pictures depicting gender-neutral shoes taken from shoe advertisements (the control condition) (see Appendices D & E for a sample of the priming paradigms).

The Stroop task used three types of word stimuli: twelve words related to body image, 12 words related to shoes, and 12 neutral words. The word stimuli were matched on mean log frequency (Kucera & Francis, 1982), familiarity (Nusbaum, Pisoni, & Davis, 1984), mean number of letters per category, number of abstract and concrete words per category, and frequency weighted neighborhood density (Vitevich & Luce, 1998). Each word was presented once in one of the four colors (red, blue, green, or yellow), producing a total of 36 trials for each participant. Four versions of the experiment were used, in order to counterbalance ‘word color’ across participants. The complete list of words that were used in the Stroop task can be found in Appendix F.

3.1.3 Apparatus. The priming paradigm and the Stroop task were presented with SuperLab 4.0.7b software for Mac OS X. Reaction times (RTs) in milliseconds for color naming responses were recorded using an SV-1 voice key from the onset of the
presentation of the visual stimulus word until the onset of the participant's vocal response. Participants' vocal responses on the Stroop task were recorded by Mac OS X's built-in microphone using Praat software, version 5.0.34.

3.1.4 Procedure. The priming paradigm was modeled after Johansson et al.'s (2004) study of attentional bias in young women. All participants were tested individually and were asked to give their informed consent to participate in the study (see Appendix F). Participants were randomly assigned to one of the two priming conditions, viewing either slim female models or pairs of shoes. Each of the 13 pictures, presented in each priming condition, was shown for 30 seconds. Participants viewing the slim female models were asked to rate to what extent each model was in accordance with their own perception of female body image on a four-point scale (1 = not at all to 4 = very much). In the same way, participants viewing advertisements for gender-neutral shoes were asked to rate to what extent each pair of shoes is in accordance with their perception of nice looking shoes on the same four-point scale (see Appendix G). The priming task took place in a separate room from the Stroop task.

During a subsequent block of trials, all participants performed the Stroop task on an individual basis. In order to become familiar with the task, a practice session consisting of 12 trials was presented (color naming strings of XXXX, OOOO, and color words written in the appropriate colors). Participants were instructed to ignore the content of the word (or letters) and name the color in which the word (or letters) were printed as quickly and accurately as possible (see instructions in Appendix H for instructions and Appendix I for a complete list of words used in Experiment 1). RTs to correct responses were measured and compared across the three word type conditions.
Upon completion of the Stroop task, participants were asked to complete a written questionnaire that collected demographic information, measured body dissatisfaction using the body dissatisfaction subscale from the Eating Disorder Inventory (Garner, Olmstead, & Polivy, 1983), and a memory recall test for all of the stimulus words presented (see Appendix J). The body dissatisfaction measure was used to assess potential differences between high and low body dissatisfied participants. The memory test was analyzed to determine if encoding the crucial body image related words lead to better recall, which would help to determine whether this priming paradigm can have long lasting effects (i.e., effects on participants' long-term memory). Participants were debriefed, thanked and given credit for their participation. Each experimental session of Experiment 1 took no more than 30 minutes.

3.2 Results

The two priming groups did not differ in age, race, or grade level (see Table 1). To control for outliers in Stroop response times, RTs below 200 ms and above 2,000 ms were excluded for each participant (overall less than 1% of all responses). Errors on the Stroop task did not exceed 10% for any of the participants. A 2 X 3 mixed analysis of variance (ANOVA) with prime type as a between participants factor and word type as a within participants factor was conducted to test the hypothesis that the thin ideal prime group would exhibit slower color naming times for the body image related words relative to the control prime group. Although the thin ideal prime group had longer RTs (mean = 712.55) than the shoe prime group (mean = 692.91), the main effect for prime type was not significant F(1, 54) = 1.136, p = .291, η² = .021, observed power = .182. This was consistent with Hypothesis 1, participants in the thin ideal prime group were not expected
to differ largely from the participants in the control prime group. Overall, there was a
main effect of word type, \( F (2, 108) = 3.67, p = .029, \eta^2 = .064, \) observed power = .665. This finding is consistent with Hypothesis 2, participants' mean RTs for the three word types were predicted to differ significantly. The crucial interaction of prime type by word type did not reach significance \( F (2, 108) = .757, p = .472, \eta^2 = .014, \) observed power = .176, even though the pattern of Stroop response RTs followed the prediction. The prediction made in Hypothesis 3, participants in the thin ideal prime group were expected to have slower color naming RTs for the body image related words when compared to the control prime group, was not supported. Although traditionally the interaction should be significant before group comparisons are made, it was decided to make the comparisons for two reasons. First, the pattern of results is consistent with the original predictions, and secondly, the comparisons were planned in advance. See Table 2 for mean RTs for prime by word type showing the predicted pattern of results.

<table>
<thead>
<tr>
<th>Word Type</th>
<th>Body Prime (n = 28)</th>
<th>Shoe Prime (n = 28)</th>
<th>Total (n = 56)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>731.98</td>
<td>702.70</td>
<td>717.34</td>
</tr>
<tr>
<td>Shoe</td>
<td>707.38</td>
<td>681.83</td>
<td>694.60</td>
</tr>
<tr>
<td>Neutral</td>
<td>698.30</td>
<td>691.21</td>
<td>694.76</td>
</tr>
<tr>
<td>Total</td>
<td>712.55</td>
<td>691.91</td>
<td>702.23</td>
</tr>
</tbody>
</table>

Because the pattern of results was consistent with predictions, an exploratory analysis was conducted using a median split to create two groups, one high and one low body dissatisfaction group. Using only the data from the high body dissatisfaction group (scores of 16 – 45 on the body dissatisfaction scale, \( n = 27 \) or 48.2\% of the participants), mean RTs on the Stroop task are reported in Table 3. The magnitude of the difference
between groups is higher and continues to be consistent with the predicted results.

Regrettably, the main effect of prime type did not reach significance $F (1, 25) = 1.659, p = .210$, $\eta^2 = .062$, observed power = .236, word type was significant $F (2, 50) = 6.162, p = .004$, $\eta^2 = .198$, observed power = .872, and the interaction for prime by word type was not significant $F (2, 50) = .896, p = .415$, $\eta^2 = .035$, observed power = .196. Establishing a group with high body dissatisfaction does give the observed results a higher effect size and more power.

Table 3. Mean RTs for High Body Dissatisfaction

<table>
<thead>
<tr>
<th>Word Type</th>
<th>Body Prime (n = 14)</th>
<th>Shoe Prime (n = 13)</th>
<th>Total (n = 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>749.79</td>
<td>701.00</td>
<td>725.40</td>
</tr>
<tr>
<td>Shoe</td>
<td>702.47</td>
<td>674.09</td>
<td>688.28</td>
</tr>
<tr>
<td>Neutral</td>
<td>690.92</td>
<td>676.75</td>
<td>683.83</td>
</tr>
<tr>
<td>Total</td>
<td>714.39</td>
<td>683.95</td>
<td>699.17</td>
</tr>
</tbody>
</table>

Exploratory analysis was conducted to investigate the correlation between body effect, which is the body image related word RT minus the neutral word RT, and body dissatisfaction scores (see Table 4). For the thin ideal prime group only, body effect was significantly correlated with the body dissatisfaction score $r = .338$, $p = .039$, one-tailed. This result was not found in the shoe primed group $r = .177$, $p = .184$. This seems to be consistent with previous research that found a Stroop effect after priming for the high body dissatisfied group (see, e.g., Johansson et al., 2005). Groesz, et al. (2001) found body image dissatisfaction was increased for females after viewing thin media images. Although the current study found a similar increase in body dissatisfaction, the difference was not significant $t(54) = .577$, $p = .567$. 

18
Table 4. Means (M) and standard deviations (SD) for body effect, body dissatisfaction and prime picture rating

<table>
<thead>
<tr>
<th></th>
<th>Body Prime (n=28)</th>
<th>Shoe Prime (n=28)</th>
<th>Total (n=56)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Body Effect</td>
<td>33.68 (79.45)</td>
<td>11.50 (49.52)</td>
<td>22.59 (66.54)</td>
</tr>
<tr>
<td>Body Dissatisfaction Score</td>
<td>18.86 (10.33)</td>
<td>17.14 (11.87)</td>
<td>18.00 (11.06)</td>
</tr>
<tr>
<td>Prime Rating (1 low – 4 high)</td>
<td>2.74 (.70)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

A final exploratory analysis was conducted for recall of body image related words. The thin ideal prime group had a mean recall of 20.00%, and the shoe prime group had a mean recall of 18.72%. The independent t-test revealed that this difference was not significant t = .362, p = .719.

3.3 Discussion

The results demonstrate a pattern that is consistent with the predictions, but the analyses failed to reach significance. The thin ideal prime group was slower to color name all categories of stimuli overall when compared to the control prime group. The thin ideal prime group had the slowest color naming times for the body image related words. It is possible that this study was simply lacking power, and if it were conducted again with a larger sample size, significance may be reached.

Another explanation for the lack of findings could be that the prime was not effective in activating body image dissatisfaction, and therefore, the predicted emotional Stroop interference effect. Future studies on the effect of thin ideal priming should consider using a stronger priming paradigm (e.g., a priming paradigm that ensures each participant is carefully attending to the stimuli). A short-term priming paradigm should also be explored in future studies. In the short-term priming paradigm, participants
would view a picture, then immediately perform the Stroop task. Thin ideal priming may have a more robust effect in a short-term priming paradigm.

Even though all of the hypotheses were not confirmed, this study had several strengths. The pattern of results found seem to indicate a trend consistent with the hypothesis that a thin ideal prime would result in longer RTs to body image related words in a subsequent Stroop task. The results may be indicative that thin ideal media does have some effect on females. This merits further investigations in order to carefully examine the extent to which the thin ideal standard in the mass media can affect processing in females, and the clinical importance that this may have for eating disordered patients.
CHAPTER IV

EXPERIMENT 2: THE EYE-TRACKING PARADIGM

4.1 Method

4.1.1 Participants. Fifty-six new female undergraduate students were recruited from the Cleveland State University participant pool. All participants were included in the analysis and received credit for their participation. Participants were randomly assigned to one of the two priming conditions (n = 28 in each condition). Participants were told that they are taking part in a study investigating contemporary mass media images (see Appendix K). See Table 5 for demographic characteristics.

| Table 5. Mean (M) and standard deviation (SD) for age, grade level, and race. |
|--------------------------|--------------------------|--------------------------|
|                         | Body Prime (n=28)        | Shoe Prime (n=28)        | Total (n=56) |
| Age in years Class      | 21.73 (4.13)             | 21.86 (4.27)             | 21.80 (4.16) |
| Freshman                 | 17                       | 16                       | 33           |
| Sophomore                | 3                        | 5                        | 8            |
| Junior                   | 2                        | 7                        | 9            |
| Senior                   | 2                        | 0                        | 2            |
| Other                    | 4                        | 0                        | 4            |
| Race                     |                          |                          |              |
| White/Caucasian          | 18                       | 15                       | 33           |
| African American         | 5                        | 8                        | 13           |
| Other                    | 5                        | 5                        | 10           |
4.1.2 Stimulus material. The priming stimulus materials were the same as that used in Experiment 1.

The eye-tracking paradigm used four types of word stimuli: twelve target words, and the same 12 words related to body image, 12 words related to shoes, and 12 neutral words used in Experiment 1. The word stimuli were matched the same as in Experiment 1. Each word was presented once, producing a total of 12 trials for each participant. A complete list of words used in the eye-tracking paradigm can be found in Appendix L.

4.1.3 Apparatus. The priming paradigm was presented with SuperLab 4.0 software for Windows. The eye-tracking paradigm was presented, and participants’ fixations were recorded using an SR Eyelink 1000 Eye-Tracker equipped with both Experiment Builder and Data Viewer.

4.1.4 Procedure. All participants were tested individually and were asked to give their informed consent to participate in the study (see Appendix M). Participants performed exactly the same priming paradigm as that used in Experiment 1. Also consistent with Experiment 1, the prime task took place in a separate room from the eye-tracking task.

During a subsequent block of trials, all participants performed the eye-tracking task on an individual basis. In order to become familiar with the task, a practice session consisting of 6 trials was presented (target and neutral words were used exclusively for the practice session). Participants heard spoken words over headphones and saw the corresponding word plus three distractor words and four shapes (a circle, a square, a triangle and a diamond) on the computer screen. Participants were instructed to click on the written word corresponding to the spoken word, drag it, and drop it onto the square
shape as quickly and as accurately as possible (see instructions in Appendix L). The precise location of the words was randomized on each trial, and all words appeared near the outer edges on the computer monitor. Similarly, the precise location of the shapes was randomized on each trial, and all shapes appeared in the inner portion of the screen. Mean target and distractor fixation times were compared across the three word type conditions and at various points throughout the trial (e.g., first third, middle third, and final third of each trial) (see Table 6). Note: the center of each word to the center of the screen is 500 pixels.

Upon completion of the eye-tracking task, participants were asked to complete a written questionnaire that collected demographic information, measured body dissatisfaction using the body dissatisfaction subscale from the Eating Disorder Inventory (see Appendix K) (Garner, Olmstead, & Polivy, 1983), and a memory recall test for all the stimulus words presented. The body dissatisfaction measure was used to assess differences between high and low body dissatisfied participants. The memory test was analyzed to determine if encoding the crucial body image related words lead to better recall, which will help to determine whether this priming paradigm has long lasting effects. Participants were debriefed, thanked and given credit for their participation. Each experimental session of Experiment 2 took no more than 30 minutes.

4.2 Results

The two priming groups did not differ in age, race, or grade level (see Table 5). A 2 X 4 X 4 mixed analysis of variance (ANOVA) was carried out with prime type as a between participants factor and word type and time as within participants factors to compare mean distance in pixels to the target and each of the distractor words as a
function of time (McLennan, 2008). Results of the between subjects effects revealed the prime type was not significant $F(1, 54) = 1.082, p = .303, \eta^2 = .020$, observed power is .175. This is consistent with Hypothesis 4, participants in the thin ideal prime group were not expected to differ largely from the participants in the control prime group. As expected, within subjects effects revealed a main effect for time $F(3, 162) = 39.884, p < .001, \eta^2 = .425$, observed power = 1.0. The two-way interaction of time by prime type did not reach significance $F (3, 162) = .426, p = .735, \eta^2 = .008$, observed power = .134. Results did reveal a main effect for word type $F(3, 162) = 917.77, p < .001, \eta^2 = .944$, observed power = 1.0, but the crucial word type by prime type interaction was not significant $F (3, 162) = .466, p = .707, \eta^2 = .009$, observed power = .143. The interaction of time by word type did reach significant $F(9, 486) = 114.75, p < .001, \eta^2 = .680$, observed power = 1.0. Contrary to predictions, time by word type by prime type did not reach significance $F(9, 486) = 1.495, p = .147, \eta^2 = .027$, observed power = .714. The prediction made in Hypothesis 8, mean distance to the target for each word type were expected to differ over time as a function of the priming group, was not supported with this finding. See Table 6 for the overall average of each trial in Experiment 2.

<table>
<thead>
<tr>
<th>Word Type</th>
<th>Body Prime (n = 28)</th>
<th>Shoe Prime (n = 28)</th>
<th>Total (n = 56)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral</td>
<td>654.21</td>
<td>654.68</td>
<td>654.44</td>
</tr>
<tr>
<td>Shoe</td>
<td>655.20</td>
<td>646.20</td>
<td>650.70</td>
</tr>
<tr>
<td>Body</td>
<td>664.02</td>
<td>667.03</td>
<td>665.52</td>
</tr>
<tr>
<td>Target</td>
<td>385.03</td>
<td>376.35</td>
<td>380.64</td>
</tr>
</tbody>
</table>

Exploratory analysis was conducted for recall of body image related words. The thin ideal prime group had a mean recall of 13.53%, and the shoe prime group had a
mean recall of 11.65%. The independent t-test revealed that this difference was not significant $t (54) = .435$, $p = .672$. Using only the data for the high body dissatisfied group (scores of 16 – 45 on the body dissatisfaction scale), mean distance to the target over the course of the trial is shown in Table X. Dividing the groups into high and low body dissatisfaction does not change the results for Experiment 2.

<table>
<thead>
<tr>
<th>Word Type</th>
<th>Body Prime (n = 15)</th>
<th>Shoe Prime (n = 13)</th>
<th>Total (n = 28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>656.75</td>
<td>660.13</td>
<td>658.44</td>
</tr>
<tr>
<td>Shoe</td>
<td>661.29</td>
<td>643.19</td>
<td>652.24</td>
</tr>
<tr>
<td>Neutral</td>
<td>659.29</td>
<td>653.88</td>
<td>656.59</td>
</tr>
<tr>
<td>Total</td>
<td>386.04</td>
<td>373.97</td>
<td>380.01</td>
</tr>
</tbody>
</table>

4.3 Discussion

The eye-tracking paradigm was expected to complement the Stroop task as a measure of information processing and to further investigate the hypothesized priming effect. It was predicted that the thin ideal prime group would spend more time fixating body image related distractor words relative to participants in the control prime group. It was envisioned that the eye-tracking results would be particularly useful in examining the stages of processing throughout each trial. Knowledge of when the effects manifest themselves during the trial would give a unique account of the influence of the word stimuli. While the lack of significant findings is disappointing, it was encouraging to discover that the eye-tracking paradigm is a sound methodology for investigating information processing. The eye-tracking data recovery program produced accurate results for both priming groups as is evidenced by the significant differences found for word type and time.
The priming task may not have been potent enough to find the predicted results. Perhaps future research should include eye-tracking as a measure of information processing for participants with an eating disorder. Another possible explanation for the lack of significance could be the group primed with thin models was intentionally avoiding the body image related words. This would be in line with a psychophysiological model of attention to threat stimuli, where participants divert attention away from threat stimuli (see e.g., Harrison & Turpin, 2003).
CHAPTER V

GENERAL DISCUSSION

The current study was designed to investigate the effect of thin ideal media on the perception of body image related stimuli for participants without an eating disorder. It was predicted that the group primed with the thin models would be more distracted by the presence of body image related words relative to a control prime group. The eye-tracking paradigm was intended to complement the Stroop task as a measure of information processing. It was envisioned that the eye-tracking results would be particularly useful in examining the stages of processing throughout each trial.

The results demonstrate a pattern that is consistent with the predictions, but the analyses failed to reach significance. It is possible that this study was simply lacking power. Future research using the emotional Stroop task and the eye-tracking paradigm with non-clinical control groups should consider using a larger sample size.

It is also probable that the priming paradigm was not strong enough to activate body image dissatisfaction, and therefore, the predicted emotional Stroop interference. Although each participant was told to look at the thin models 30 seconds, there was no way to ensure that they were carefully attending to the stimuli. Females may not see the thin fashion models as a comparison standard. Perhaps a more realistic priming paradigm
would have lead to more robust effects. Additionally, the effects of thin ideal exposure may depend on initial body satisfaction (Johansson et al., 2005). Future research might consider splitting the participants into groups of high and low body satisfaction post-experimentally.

A short-term priming paradigm should also be explored in future studies using both the Stroop and the eye-tracking paradigm. In the short-term priming paradigm, participants would view a picture, then immediately perform the task. Thin ideal priming may have a more robust effect in a short-term priming paradigm.

While the results were not as expected, this study had a combination of strengths and limitations. To the best of my knowledge, this was the first study to supplement a Stroop task with an eye-tracking paradigm. Previous research has found that the Stroop task is not always sensitive enough to find effects in non-clinical control groups (Dobson & Dozois, 2004). New measures of attentional bias and information processing are necessary for research on information processing in participants without the disorder that is being investigated. The exploratory analysis does validate the possibility of replicating this study with the mentioned changes to the design.

Finally, it was encouraging to confirm that the eye-tracking paradigm is a sound methodology for investigating information processing and that the Stroop paradigm results showed a trend consistent with predictions.
REFERENCES


words in young women: The role of thin ideal priming and body shape dissatisfaction. 

*Personality and Individual Differences, 38*, 723-733.


of Eating Disorders, 25, 223-226.


APPENDIX A
(Inform Consent for Pilot Study)

Pilot Study
Participant Consent Form

This research is being conducted by Teresa Markis as part of her thesis project for a Master's degree from the Psychology Department at Cleveland State University under the direction of her thesis advisor Dr. Conor T. McLennan. Contact information for both Teresa and Dr. McLennan appear below.

As a participant in this study, you will be asked to view some pictures from magazine advertisements and to rate how the picture represents the thin ideal depicted in the mass media. The purpose of this research is to investigate contemporary mass media images. Your participation will be limited to one session lasting approximately 10 minutes. Please be aware that you are not required to participate in this research, and you may discontinue your participation at any time without penalty.

Your responses will be completely confidential. Your name will appear only on this informed consent form and the researcher’s experiment log. These will be kept in a locked file cabinet. The confidentiality of your identity will be maintained at all times.

Risk associated with participation in this study is minimal and not beyond that of daily living. Possible risks include fatigue and possible uneasiness from viewing pictures of thin fashion models. If fatigue occurs, you can take as much time as you need to complete the experiment. If you feel any discomfort while viewing the pictures, you may stop at any time without penalty. Your data are important to this research project, and I hope that your participation contributes to your learning about psychological research.

Participation is completely voluntary and you may withdraw at any time. For further information regarding this research, please contact Teresa Markis at (216) 712-1533, email: t.markis@csuohio.edu, or Dr. Conor T. McLennan (216) 687-3750, email: c.mclennan@csuohio.edu.

Should you need further assistance, you may schedule an appointment at the Cleveland State University Counseling and Testing Center by calling (216) 687-2277.

There are two copies of this consent form. After signing them, keep one copy for your records and return one to the researcher. Thank you in advance for participating in our research study. Please indicate your agreement to participate by signing below.

I am 18 years or older and have read and understood this consent form and agree to participate.

I understand that if I have any questions about my rights as a research participant I can contact the Cleveland State University Institutional Review Board at (216) 687-3630.

Signature: ________________________________

Name: ________________________________ (Please Print)

Date: ________________________________
APPENDIX B
(Instructions for Pilot Study)

Language Research Laboratory
Chester Building Room 32

Welcome to the Language Research Laboratory. We appreciate your helping us today.

In the experiment that you will be participating in today, you will see 20 pictures taken from underwear advertising for women. Your task is to rate the pictures on a scale of 1 (not at all) to 5 (very much) on how much you think the picture depicts the thin ideal portrayed by contemporary mass media, specifically visual media such as magazines and television.

A typical trial will proceed as follows: a picture will appear on the screen. As quickly and accurately as possible, press a number from 1 to 5 to indicate how much you think the picture depicts the thin ideal in the mass media. As soon as you have made a response, a new trial will begin.

If you have any questions, please ask the experimenter now.

Let the experimenter know when you are ready to begin the experiment.

Thank you.
APPENDIX C
(Example of Pilot Paradigm)

Please rate this picture on a scale from 1 (not at all) to 5 (very much) on how much you think the picture depicts the thin ideal portrayed by contemporary mass media.

1  2  3  4  5
not at all  a little  moderately  quite a bit  very much
APPENDIX D
(Example of Priming Paradigm)

THIN IDEAL PRIME

Please rate to what extent this model is in accordance with your own perception of female body ideal on a four-point scale
(1 = not at all to 4 = very much)
APPENDIX E
(Example of Priming Paradigm)

GENDER-NEUTRAL SHOE PRIME (CONTROL)

Please rate to what extent this shoe is in accordance with your own perception of nice looking shoes on a four-point scale
(1 = not at all to 4 = very much)
APPENDIX F
(Informed Consent for Experiment 1)

Stroop Task
Participant Consent Form

This research is being conducted by Teresa Markis as part of her thesis project for a Master's degree from the Psychology Department at Cleveland State University under the direction of her thesis advisor Dr. Conor T. McLennan. Contact information for both Teresa and Dr. McLennan appear below.

As a participant in this study, you will be asked to view some pictures from magazine advertisements, complete a short task on the computer, and a short questionnaire. The purpose of this research is to investigate contemporary mass media images. Your participation will be limited to one session lasting approximately 30 minutes. Please be aware that you are not required to participate in this research, and you may discontinue your participation at any time without penalty. You may also omit any items on the questionnaire you prefer not to answer.

Your data and responses on the questionnaire will be completely confidential. Your name will appear only on this informed consent form and the researcher’s experiment log. These will be kept in a locked file cabinet. The confidentiality of your identity will be maintained at all times.

Risk associated with participation in this study is minimal and not beyond that of daily living. Potential risks include fatigue and possible discomfort in disclosing sensitive information. If fatigue occurs, you can take as much time as you need to complete the experiment. If you do not feel comfortable answering any questions, you can skip the question, and you may stop at any time without penalty. Your data are important to this research project, and I hope that your participation contributes to your learning about psychological research.

Participation is completely voluntary and you may withdraw at any time. For further information regarding this research, please contact Teresa Markis at (216) 712-1533, email: t.markis@csuohio.edu, or Dr. Conor T. McLennan (216) 687-3750, email: c.mclennan@csuohio.edu.

Should you need further assistance, you may schedule an appointment at the Cleveland State University Counseling and Testing Center by calling (216) 687-2277.

There are two copies of this consent form. After signing them, keep one copy for your records and return one to the researcher. Thank you in advance for participating in our research study. Please indicate your agreement to participate by signing below.

I am 18 years or older and have read and understood this consent form and agree to participate. I understand that if I have any questions about my rights as a research participant I can contact the Cleveland State University Institutional Review Board at (216) 687-3630.

Signature: __________________________________________

Name: ____________________________________________ (Please Print)

Date: ____________________________________________
APPENDIX G
(Instructions for Priming Paradigm)

Language Research Laboratory
Chester Building Room 32

Welcome to the Language Research Laboratory. We appreciate your helping us today.

In the experiment that you will be participating in today, you will be viewing pictures of female models, and you are asked to rate to what extent each model is in accordance with your own perception of female body image on a four-point scale (1 = NOT at all to 4 = VERY much).

A typical trial will proceed as follows:

A picture will appear on the computer screen.

After you have had a chance to look at the picture, a rating scale will appear below the picture. Once the rating scale has appeared, please use the number keys on the keyboard to rate to what extent each model is in accordance with your own perception of female body image on a four-point scale (1 = NOT at all to 4 = VERY much).

As soon as you have responded, a new trial will begin.

If you have any questions, please ask the experimenter now.

Let the experimenter know when you are ready to begin the experiment.

Thank you.
Language Research Laboratory  
Chester Building Room 32

Welcome to the Language Research Laboratory. We appreciate your helping us today.

In the experiment that you will be participating in today, you will see words written in different color fonts on the computer screen. Your task is to ignore the meaning of the words and to simply name the color in which they are printed as quickly and accurately as possible.

A typical trial will proceed as follows: a word will appear on the screen. As quickly and accurately as possible, name the color in which the word is printed. As soon as you have made a verbal response, a new trial will begin.

We will begin with a brief practice phase to familiarize you with the experiment.

If you have any questions, please ask the experimenter now.

Let the experimenter know when you are ready to begin the experiment.

Thank you.
<table>
<thead>
<tr>
<th><strong>BODY</strong></th>
<th><strong>SHOE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat</td>
<td>Run</td>
</tr>
<tr>
<td>Arm</td>
<td>Toe</td>
</tr>
<tr>
<td>Hips</td>
<td>Kick</td>
</tr>
<tr>
<td>Flesh</td>
<td>Pump</td>
</tr>
<tr>
<td>Obese</td>
<td>Shoe</td>
</tr>
<tr>
<td>Plump</td>
<td>Walk</td>
</tr>
<tr>
<td>Waist</td>
<td>Boots</td>
</tr>
<tr>
<td>Figure</td>
<td>Footing</td>
</tr>
<tr>
<td>Flabby</td>
<td>Leather</td>
</tr>
<tr>
<td>Thighs</td>
<td>Sneaker</td>
</tr>
<tr>
<td>Stomach</td>
<td>Moccasin</td>
</tr>
<tr>
<td>Buttocks</td>
<td>Stocking</td>
</tr>
</tbody>
</table>

**NEUTRAL**

Bed  
Lamp  
Vase  
Chair  
Shelf  
Bench  
Towel  
Table  
Carpet  
Curtain  
Blanket  
Wardrobe
APPENDIX J
(Questionnaire and Memory Recall Task)

FOR LRL USE:
Room # ______________________
Participant # ______________________
___ (credits) OR $ ______________
Experiment ______________________
Date ______________________
Experimenter ______________________

Thank you for taking the time to fill out our questionnaire. It has 34 questions and should take no more than 10 minutes to complete. Please fill in the following information:

Date of Birth: ______________________
Gender: ______________________
Grade Level (please circle): Freshman, Sophomore, Junior, Senior,
Other (please specify) ______________________
Major: ______________________
Ethnic Background (please circle): Hispanic, African American,
Asian American, White/Caucasian, American Indian, European American
Other (please specify) ______________________
Have you ever been diagnosed with an Eating Disorder (please circle):
Yes No (Note: all information provided on this questionnaire will be strictly confidential).

Please circle a response for each of the following statements:

1. I watch fashion-related shows on TV.  Always Usually Often Sometimes Rarely Never
2. I think that my stomach is too big.  Always Usually Often Sometimes Rarely Never
3. I am happy with the amount of shoes I own.  Always Usually Often Sometimes Rarely Never
4. I have a paid subscription for a fashion magazine.  Always Usually Often Sometimes Rarely Never
5. I think that my thighs are too large.  Always Usually Often Sometimes Rarely Never
6. I would choose a fashion magazine in a waiting room.  Always Usually Often Sometimes Rarely Never
7. I shop on the Internet for shoes.  Always Usually Often Sometimes Rarely Never
8. I think that my stomach is just the right size.  Always Usually Often Sometimes Rarely Never
9. I choose shoes by how they look, not by how comfortable they feel.  Always Usually Often Sometimes Rarely Never
10. In general, I wear the same shoes everyday.  Always Usually Often Sometimes Rarely Never
11. I purchase fashion magazines regularly.  Always Usually Often Sometimes Rarely Never
12. I feel satisfied with the shape of my body.  Always Usually Often Sometimes Rarely Never
13. I am happy with the size of my feet.  Always Usually Often Sometimes Rarely Never

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14. I like the shape of my buttocks.  
15. I like comfortable shoes.  
16. I think my hips are too big.  
17. I look at fashion magazines.  
18. I think that my thighs are just the right size.  
19. I watch the Victoria’s Secret Fashion Show.  
20. I think that my hips are just the right size.  
22. I buy shoes whenever I see a pair I like.  
23. I do not look at fashion magazines.  
24. My friends would describe me as someone who likes shoes.  
25. I think my buttocks are too large.  
26. I avoid watching fashion-related shows on TV.  
27. I own more than 20 pairs of shoes.
Recall Memory Task

Please list all of the words that you remember seeing or hearing over headphones and on the computer screen in the experiment that you participated in today.

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 
11. 
12. 
13. 
14. 
15. 
16. 
17. 
18. 
19. 
20. 

Thank you participating in this important research study. The researcher is available to answer any questions that you may have.
APPENDIX K
(Instructions for Experiment 2)

Language Research Laboratory
Chester Building Room 32

Welcome to the Language Research Laboratory. We appreciate your helping us today.

In the experiment that you will be participating in today, you will hear words over headphones and see words written on the computer screen. Your task is to click on the written word corresponding to the spoken word, drag it, and drop it onto the square shape in the center of the screen as quickly and as accurately as possible.

A typical trial will proceed as follows: words will appear written on the screen, a beep will sound indicating a spoken word is about to be presented, and finally you will hear a word over your headphones. As quickly and as accurately as you can, drag the written word corresponding to the spoken word you just heard and drop it onto the square shape. As soon as you have dropped the correct word onto the correct shape, a new trial will begin.

We will begin with a brief practice phase to familiarize you with the experiment.

If you have any questions, please ask the experimenter now.

Let the experimenter know when you are ready to begin the experiment.

Thank you.
APPENDIX L
(Target Words used in Experiment 2)
Note: The body, shoe, and neutral words were the same as in Experiment 1 and are listed in Appendix I.

TARGET
Car
Book
Drum
Pipe
Sled
Truck
Barrel
Beetle
Candle
Pliers
Whistle
Scissors
APPENDIX M
(Informed Consent for Experiment 2)

Eye-tracking
Participant Consent Form

This research is being conducted by Teresa Markis as part of her thesis project for a Master's degree from the Psychology Department at Cleveland State University under the direction of her thesis advisor Dr. Conor T. McLennan. Contact information for both Teresa and Dr. McLennan appear below.

As a participant in this study, you will be asked to view some pictures from magazine advertisements, complete a short task on the computer, and a short questionnaire. The purpose of this research is to investigate contemporary mass media images. Your participation will be limited to one session lasting approximately 30 minutes. Please be aware that you are not required to participate in this research, and you may discontinue your participation at any time without penalty. You may also omit any items on the questionnaire you prefer not to answer.

Your data and responses on the questionnaire will be completely confidential. Your name will appear only on this informed consent form and the researcher's experiment log. These will be kept in a locked file cabinet. The confidentiality of your identity will be maintained at all times.

There are minimal risks associated with participating in this research study. The risks are not beyond those of daily living. Potential risks include fatigue and possible discomfort in disclosing sensitive information. If fatigue occurs, you can take as much time as you need to complete the experiment. If you do not feel comfortable answering any questions, you can skip the question, and you may stop at any time without penalty. During the eye-tracking portion of the experiment, you will be exposed to infrared light. The infrared light that you will be exposed to is a natural component of sunlight, and you will be exposed to less than the typical exposure by sunlight. Your data are important to this research project, and I hope that your participation contributes to your learning about psychological research.

Participation is completely voluntary and you may withdraw at any time. For further information regarding this research, please contact Teresa Markis at (216) 712-1533, email: t.markis@csuohio.edu, or Dr. Conor T. McLennan (216) 687-3750, email: c.mclennan@csuohio.edu.

Should you need further assistance, you may schedule an appointment at the Cleveland State University Counseling and Testing Center by calling (216) 687-2277.

There are two copies of this consent form. After signing them, keep one copy for your records and return one to the researcher. Thank you in advance for participating in our research study. Please indicate your agreement to participate by signing below.

I am 18 years or older and have read and understood this consent form and agree to participate.

I understand that if I have any questions about my rights as a research participant I can contact the Cleveland State University Institutional Review Board at (216) 687-3630.

Signature: __________________________________________

Name: ______________________________________________ (Please Print)

Date: ___________________________________________________________________