

COUNTER-STEREOTYPICAL MEDIA MESSAGES AND THE REDUCTION OF
IMPLICIT STEREOTYPES ABOUT WOMEN

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ABSTRACT

One of the pro-social effects of mass media is identified as “stereotype reduction”. Recent studies on the malleability of implicit stereotypes suggest that exposure to counterstereotypical images has an effect on the reduction of implicit stereotypes. This research examines the viability of this claim by priming individuals with counterstereotypical media messages from television and films.

3 Female portrayal (sexy stereotype / nurturing stereotype / counter stereotype) X 2 Media type (news / entertainment), plus a control group was undertaken factorial experiment. One hundred and seventy five undergraduate participants were randomly assigned to one of the 7 conditions. Participants assigned to the experimental groups watched media clips corresponding to their assigned conditions. After watching media clips, participants were asked to complete the IAT (Implicit Association Test). Two different types of the IAT measured implicit stereotypes toward women. One measured stereotypes of women as sex objects and the other measured stereotypes of women as nurturing family caregivers.

Findings revealed a main effect for female portrayals. Participants who viewed counterstereotypical women in media clips produced a significantly lower score on the IAT measuring implicit female stereotypes than those who watched either stereotypically sexy women or those who watched stereotypically nurturing women. Also, the findings suggest that participants who were exposed to counterstereotypical media messages drawn from the news shows reported the lowest scores on the IAT. These scores were significantly lower than those of participants in a control group.

Findings of this study suggest that if counterstereotypical portrayals of women were more accessible in our current media environment, viewers may experience a reduction of stereotypical attitudes. Specifically, the data suggest that counter-stereotypical content in news shows may be an effective way to weaken implicit stereotypes of women. These findings contribute to the literature on pro-social effects of media.

BIOGRAPHICAL SKETCH

Sarah Choe received her bachelor's degree in Communication Arts from Sejong University, Seoul, Korea. When she was in a master's program at Cornell, she was focusing on social psychology of communication. Especially, she is interested in the effect of counterstereotypical media messages on the reduction of implicit stereotypes.

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CHAPTER 1

Introduction

Most media studies have focused on the negative effects of stereotypes in the media (Dixon & Linz, 2000; Gorham, 2006; Greenberg, Mastro, & Brand et al., 2002). In fact, the mass media have frequently been criticized for disproportionately putting emphasis on generalized stereotypic images of socially disadvantaged groups, such as women or blacks. However, a few scholars have noted that media messages often result in pro-social effects (Mares & Woodard, 2005). One promising area of research looks at how viewing counterstereotypical media messages can actually reduce stereotypical attitudes toward specific groups of people (Dasgupta et al., 2001, 2004; Mares & Woodard, 2005; Durkun, 1985). Exposing individuals to counterstereotypical messages heightens the accessibility of counterstereotypical information through a process called media priming. The highly accessible counterstereotypical ideas on gender, for example, can alter the automatic judgment about that group in a positive way. The goal of this experiment is to advance our understanding of the/concept/ topic by determining whether counter-stereotypical content presented in the mass media can reduce implicit stereotypes about females. Media clips may indeed be a successful vehicle for such messages. Women, in particular, have a history of being portrayed in stereotypical ways that often have negative characteristics. Counterstereotypical messages on television can increase our awareness that those around us do not fit into all-encompassing categories. Counterstereotypical descriptions of women in the media should result in more positive implications for the entire society.

Chapter 2

Rationale

There are two basic categories of stereotypes: Explicit and implicit. Explicit stereotypes are almost entirely under the control of the individual. These beliefs are directly expressed or publicly stated with individual's awareness (Akrami et al., 2006). Implicit stereotypes can be more difficult to change because usually individuals who hold these beliefs are not aware that the beliefs exist for them (Greenwald & Banaji, 1995).

Definition of Implicit Stereotypes

An implicit stereotype is a belief held by a person about the supposed characteristic traits of members of a social category, and that belief operates without conscious control (Greenwald & Banaji, 1995). Automatic activation of stereotypes provides the foundation for implicit stereotyping (Greenwald & Banaji, 1995). Studies on automatic operation of stereotypes reveal that individuals who are primed with stereotypical words or images will automatically activate implicit stereotypes, regardless of their high and low scores on explicit prejudices (Banaji & Greenwald, 1995; Bargh et al., 1996; Brauer, Wasel, & Niedenthal, 2000; Devine, 1989). These findings support the argument that implicit stereotypes are activated mindlessly from memory and reflect an automatic mental process. The activation of implicit stereotypes thus occurs without perceiver awareness, control, intention (Devine, 1989; Fazio, Sanbonmatsu, Powell, & Kardes, 1986). This automatic process is described as an "inescapable habit that occurs despite attempts to ignore or bypass, triggered by exposure to a relevant stimulus cue in the environment." (Banaji & Greenwald, 1995; Banaji, Hardin, & Rothman, 1993; Macrae, Stangor, & Milne, 1994). For example, research participants instructed by an Asian-American experimenter may spontaneously activate a stereotype of

Asian-Americans (Gilbert & Hixon, 1991). Additionally, participants asked to estimate the height of a videotaped woman spontaneously activate their stereotype of women (e.g., small, short) (Pendry & Macrae, 1996). Similarly, individuals respond faster to stereotypical gender role pairs (e.g., nurse- she) than to counterstereotypical pairs (e.g., engineer- she) (Greenwald & Banaji, 1995).

How to Change Implicit Stereotypes

Although the activation of automatic beliefs and attitudes has been described as seemingly inevitable, the empirical evidence for the malleability of implicit stereotypes has been suggested by some researchers. Some studies have indeed demonstrated that automatic response can be altered by self- or social motives that suppress stereotypical thoughts intentionally (Devine, 1989; Monteith, Devine & Monteith, 1999; Wilson, Lindsey, & Schooler, 2000; Zuwerink, & Elliot, 1994; Fiske & Neuberg, 1990; Macrae & Bodenhausen, 1998), by the application of specific strategies, such as mental imagery (Blair et al., 2001), and stereotype negation training that includes media mediation (Kawakami et al., 2000; Lowery et al., 2001; Ramasubramanian, & Oliver, 2007; Steinke et al, 2007, 2006; Nathanson et al, 1999, 2002, 2003; Beentjes et al, 2002; Kawakami et al, 2000). However, recent studies have suggested that automatic beliefs and attitudes can be modified by variations in situational context (e.g., specific exposure to counterstereotypical stimulus cues) rather than by directly manipulating motivation or effort (Dasgupta, & Greenwald, 2001; Dasgupta et al., 2004; Wittenbrink, & Park, 2001).

Stimulus Cues. Studies on automaticity have suggested that automatic activation of stereotypes is triggered by an external stimulus cue in the environment and such external cues (situational stimuli) can modulate automatic processes. (Bargh et al., 1999, 1997; Wittenbrink et al., 2001). For example, a

black person's face will always activate stereotypical traits associated with blacks (e.g., poor, athletic). Yet, if you encounter an African American who behaves or appears to be counter to the stereotype (i.e., interpersonal exposure), or in a positive situation (e.g., a family barbecue), these situational cues will act as a factor that shifts the negative implicit stereotypes of blacks in a positive way (Lowery et al., 2001; Wittenbrink et al., 2001).

Recent studies on stereotype reduction indicate that individuals can temporarily modify their pre-existing automatic beliefs (implicit stereotypes) after exposure to counter-stereotypical images instead of the attempt to negate those stereotypes consciously (Dasgupta & Greenwald, 2001; Blair & Banaji, 1996; Blair, 2002, 2001; Bodenhausen et al., 1995). For example, if perceivers are involved in situations that provide frequent exposure to counter-stereotypical images, their automatic stereotyping to future similar exposures or the current ones may be altered in a pro-social way.

Dasgupta and Greenwald (2001) found that exposure to counterstereotypical group members can weaken/lessen automatic prejudice. Their results revealed that participants exposed to admired black and disliked white exemplars significantly reduced their implicit pro-white attitudes and preferences. Dasgupta's follow-up study (2004) then investigated whether exposure to women in leadership positions could temporarily undermine women's automatic gender stereotypic beliefs. This study found that participants exposed to famous women in leadership positions (e.g., Meg Whitman, CEO of e-Bay and Ruth Bader Ginsburg, US Supreme Court Justice) produced less automatic stereotypes toward women.

Media and Female Stereotypes

The mass media have been frequently criticized for stereotypical presentations of women, which are usually negative (e.g., sex object). Content

analyses have revealed that television is filled with stereotyped portrayals of gender-roles. Female stereotypes on television tend to depict women as dependent on or subservient to men, primarily located in home or domestic settings, preoccupied with physical attractiveness, sex objects, and mere decorations for men (Aubrey, & Harrison, 2004; Ford et al., 1998; Lysonski, 1985; Wyckham, 1987; Thompson, & Zerbinos, 1995). These women are typically identified as housewives and mothers who only dealing with the home, family, and marriage issues, while men are more likely to be portrayed as unmarried and in professional occupations (Signorielli, 1989). Also, women characters are presented as being overly weak, emotional, sympathetic, nurturing, and under men's protection (Greenberg, Mastro, & Brand, 2002; Herrett-Skjellum & Allen, 1996; Thompson & Zerbinos, 1995; Vande, & Streckfuss, 1992).

Given that implicit stereotypes can be reduced by changing their social context (stimulus cues), can this principle also be applied to media exposures by manipulating media content? For example, if media presents more balanced images of stereotyped groups (e.g., females) by using counterstereotypical images and media characters, can the activation of implicit stereotypes thus be weakened?

A Priming Perspective

If mass media messages are an effective means for the activation of cognitions that can affect the formation, activation, and moderation of implicit stereotypes, it is important to gain precise knowledge of how the process works. To examine the processes involved in automatic activation of attitudes from memory, many researchers have applied a priming perspective (Chen, & Bargh, 1997; Berkowitz & Rogers, 1986; Hermans et al., 2001). According to this perspective, prior exposure to a word or concept can trigger a memory and thus heighten the accessibility of related information in memory. This state of heightened

accessibility then influences the perceiver's subsequent behaviors and judgments (Bargh, & Chen, 1997; Ratcliff, & MaKoon, 1988; Berkowitz, & Rogers, 1986; Hermans et al., 2001, Givens & Monohan, 2005). Hansen and Hansen (1988, 1989, 1990) found that subjects who were primed with rock music videos that portrayed stereotypic sex-roles reported much greater linking to sex-role stereotypic behavior (e.g., male-dominant, female- submissive).

People who are repeatedly primed with counterstereotypical messages about a certain social group (e.g., African American, females) will have different attitudes and beliefs toward that social group compared to people who are primed with stereotypical concepts of that same social group. The mere presence of relevant situational features of a target group can automatically trigger social behavior, which then produces automatic categorization of a specific social group (Ratcliff, & McKoon, 1988; Shiffrin, Schneider, 1977). Smith and Zarate (1992) argue that the judgment of an object (e.g., a social group) depends on exemplar accessibility. If individuals react repeatedly to social stimulus cues in the same way, the representation of their responses should eventually be activated automatically when the individuals encounter the same social stimulus cues later (Bargh et al., 1992). The more accessible a mental construct (certain information in memory) is, the more likely that information is to be used to process and interpret social information (e.g., stereotype). Repeated or frequent activation of a construct also makes related information chronically or temporarily accessible since the threshold of activation lowers (Bushman, 1998; Bargh et al, 1988; Higgins et al, 1988; Huesmann, 1986). Exposure to counterstereotypical exemplars of stereotyped groups may thus create new characteristics of the target groups (e.g., strong females, highly educated blacks), which are not compatible with old beliefs (e.g.,

weak women, poor blacks). A new representation of the target group then will compete with the old representation.

Counterstereotypical priming may challenge the dominance of stereotypes in information processing and promote counterstereotypical thoughts. For example, if counterstereotypes become less accessible in the memory, they will be less able to activate new characteristics of a target group gained from prior experience when people evaluate a target group. Contrary, if the new representations of the target group (i.e., counterstereotypes) are more accessible, counterstereotypical thoughts toward a specific group will be more available in memory. This highly accessible information after priming will facilitate the retrieval of counterstereotypical notions from memory. The closer some concept is in the memory to stimulus cues, the more that concept will be activated.

Implicit evaluations of groups are, therefore, formed by high accessible stimuli that are retrieved from recent memory (Fazio et al., 1986).

If we apply this mechanism (priming effects) to a media environment, exposure to counterstereotypical representation of women images with counterstereotypical exemplars will increase the accessibility to counterstereotypical ideas of women. Consequently, automatic stereotypic evaluations of women will modify since counterstereotypical information is more available.

Therefore, the following hypothesis is proposed:

Hypothesis 1: Individuals who are exposed to media clips with counterstereotypical images of women will report lower implicit stereotypes toward women than those who are exposed to stereotypical images of women (sexy or nurturing) or those who are in a control group.

Perceived Realism

Many prior studies have demonstrated that the perceived realism of television images does influence viewer attitudes, beliefs, and behaviors (Pingree, 1978; Potter, 1988; Shapiro & Chock, 2003; Taylor, 2005). Perceived realism is defined as that level of perceived similarity between events and characters in the real environment and events and characters in the media (Shapiro & Chock, 2003). Several studies suggest that when media messages are perceived as unrealistic, they will have less influence on perceiver cognitive, behavioral reactions than when the messages are perceived as real (Atkins, 1983, Feshbach, 1972; Pingree, 1978).

Earlier studies show that the degree of perceived realism of television news is higher than that for television entertainment (Shapiro, 1990, 1991). If media messages on news shows are considered as more factual than the media messages drawn from entertainment shows, this different level of perceived realism may affect the moderation of implicit stereotypes differently. When people perceive the content of a stimulus as real, that perception promotes a processing of the information deeply, which in turn leads to better memory and more extensive learning of the content of the message (Huston et al., 1995; Salomon, 1983). Additionally, some researchers have proposed that when media messages are perceived as factual, perceivers tend to identify more closely with the protagonists or be more interested and involved in the story (Zillman, 1991; Van der Voort, 1986). That may indicate that the more realistic a depiction is in the media, the more likely it is that the image will prime related information in the viewer's memory.

Addressing all these views together, this study will investigate whether or not perceived realism on different media type (i.e., a news show vs. an

entertainment show) provides a distinct opportunity for stereotype reduction. Expecting that people will consider content of news shows as more realistic than content of entertainment shows, there will be a main effect for on the delivered content, such that the more realistic content will have a stronger effect on the moderation of implicit stereotypes. The effect of news shows may then be stronger than that of entertainment shows.

Hypothesis 2: Participants who view counter-stereotypical images of women in news shows will report the lowest implicit stereotypes toward women compared those who watch counter-stereotypical images of women in entertainment shows or those in a control group.

Clarifying the Concept of Gender Stereotypes

Studies on female stereotypes suggest that people tend to categorize women at a different subtype level (e.g., domestic attendant, sex object) than at the general category level (e.g., woman) (Clifton, McGrath, & Wick., 1976; Eckes, 1994). Especially, some studies have found that the domestic attendant and sex object subtypes are related to different groups of attributes (e.g., family vs. sexuality) instead of sharing the single category of women (Deaux et al., 1985; Eckes, 1994). However, previous studies on implicit stereotypes of women rarely paid attention to the sex object subtype, as they examined implicit stereotypes about women with family traits (Greenwald, 1996; Blair, 2001), feminine traits (Blair, 2001), or supportive attributes (Dasgupta et al, 2004).

One subtype versus the other subtype may produce qualitatively different results in cognition and behavior (Lavine, Sweeney, & Wagner, 1999). For example, the sexist ads describing a woman as a sex object may activate the view that women are seductive, while portraying women as homemakers may generate the belief that women are nurturing and domestically-minded (Deaux et al., 1985;

Clifton et al., 1976) due to priming effects. That is, priming people with sexist ads or images of nurturing women will increase the accessibility of related information in the memory, and this heightened accessibility will influence people's attitudes and beliefs.

This study will focus not only on implicit stereotypes toward women identified as a home maker, but also on implicit stereotypes about women associated with sexuality, and examine how differently those two stereotypes are processed by individuals.

Hypothesis 3: Individuals who view stereotypically sexy women in media clips will increase the number of their implicit stereotypes related to sexuality traits, while individuals who watch stereotypically nurturing women in media clips will increase the number of implicit stereotypes associated with family (nurturing) attributes.

Chapter 3
Method

Participants

A group of 175 participants (52 Male and 123 Female) were drawn from a population of undergraduate students enrolled in communication courses at Cornell University (Mean age=19.71). Of that group, 107 participants were white, 34 were Asian, 15 were Hispanic, 13 were African American, and 6 were Other. As compensation for their participation in the study, each student received extra course credit.

Design

A 3 -Female portrayal (sexy stereotype / nurturing stereotype / counter stereotype) X 2 -Media type (news / entertainment), plus a control group undertook a factorial experiment (see Table 1 for the experimental design). Participants were randomly assigned to one of seven conditions in a post-test only, between- subjects experiment.

Table 1. Experimental Design

	Counter-stereotype	Nurturing stereotype	Sexy stereotype	Control Group
News Show	<i>n</i> =25	<i>n</i> =25	<i>n</i> =25	<i>n</i> =25
Entertainment Show	<i>n</i> =25	<i>n</i> =25	<i>n</i> =25	

Measures

Stimulus Material

Selection of media clips. The experiment selected 24 media clips, representing stereotypical and counterstereotypical images of women from both news shows (e.g., ABC news, CNN news) and entertainment shows (e.g., movies, dramas). Stereotypical clips were selected based on traditionally accepted social norms that distinguished typical feminine behaviors and personality traits from typical masculine behaviors and personality traits. On the pervasive use of female stereotypes on television, women appeared as dependent on or subservient to men, primarily in the home or in domestic settings, preoccupied with physical attractiveness, sex objects, or as decorations for men (Aubrey & Harrison, 2004; Ford et al., 1998; Lysonski, 1985; Wyckham, 1987; Thompson & Zerbinos, 1995). In the research, we focused especially on two different kinds of female stereotypes in the media: Sexy and nurturing images of women (e.g., a cheerleader dancing sexually for a guy vs. a mom taking care of her son,).

Counterstereotypical clips were chosen on the basis of behaviors and personality traits that were usually considered counter to contemporary cultural norms (see Aubrey & Harrison, 2004). For example, in a gender stereotype, a male character would be portrayed as a leader or decision –maker, while a female character would be described as a follower. Then in a counterstereotype, a female character would be seen as a leader or decision- maker while a male character is portrayed as a follower. The clips with counterstereotypes showed women who in leadership or professional roles, such as U.S. President or a female pilot.

To maintain a similar level of perception of stereotypicality in both news shows and entertainment shows, a similar story line was used. For example, in a news nurturing stereotype condition, there was reporting about a mom and her life

with her kids. Corresponding to this story, in the entertainment nurturing condition, the scene of a mom spending time with her children was used (see Appendix A).

To pre-test the validity of media clips conveying either stereotypes or counterstereotypes of women, 17 undergraduate students evaluated the clips. After watching the media clips, they were asked to rank the most stereotypical media clips. Also, they rated how stereotypical or counterstereotypical each media clip was based on a 5-point Likert scale. The media clip that ranked and rated the lowest was eliminated for each condition after comparing its mean with those of other clips; the result was 6 conditions that included 3 different media clips. For each condition, these 3, 30- sec clips played continuously, for a total viewing time of 1.5 min.

Dependent Variables

The Basic IAT Concept. Implicit stereotypes were measured use the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998). In the IAT, the stimuli consisted of female and male first names (e.g., Michelle and John) and words typically used to describe males and females (e.g., “family” for women and “career” for men). The IAT asked subjects to pair two concepts (e.g., female name + family, or male name + career). The basic concept was that the more associated two concepts are, the more rapidly subjects should be able to respond to the concept. So, if the concept of ‘female’ and ‘family’ was considered strongly associated, it should be easier to match them. If the concept of ‘female’ and ‘career’ was not considered strongly associated, it should take longer for participants to recognize that relationship.

The prediction was that participants would respond faster when women’s names and family attributes were a pair than when men’s names and career attributes were a pair and then showing considerably slower reaction time for

opposite combinations of stimuli (female name + career and male name + family). Basically, IAT measures reaction time. If somebody reacts faster to an associated pair (e.g., male name + career and female name + family) than an unassociated pair (female name + career and male name + family), that would mean that the individuals have stronger stereotypical beliefs regard gender than counterstereotypical beliefs about gender. In sum, reaction time measured by the IAT indicated how accessible stereotypical or counterstereotypical ideas were.

Construction of the IAT. The subjects completed two sets of the IAT because the study focused on “sexuality” as well as “family (nurturing)”. Studies on gender stereotypes have found that the domestic attendant and sex object subtypes of women are related to different groups of attributes (Deaux et al., 1985; Eckes, 1994). One subtype versus the other might produce qualitatively different results in cognition and behavior (Lavine, Sweeney, & Wagner, 1999). since one of the purposes of this study was to distinguish different stereotypes of women (i.e., nurturing vs. sexy) in the media and their effects, two different kinds of dependent measures were constructed to see if there was indeed any difference between sexy stereotypes and nurturing stereotypes for women.

The first set was constructed using the standard IAT, which usually measures implicit stereotypes about women (female + family and male + career) (i.e., the Family IAT) (refer to Project Implicit website).¹ The second set of the IAT was created to measure how strongly sexuality is associated with females. The word that describes sexuality attributes was chosen by undergraduate RAs, who were given words related to sexuality and asked to rate how closely those words associated with sexuality. Finally, the top five words selected were used to construct “the Sexuality IAT”.

¹ <http://implicit.harvard.edu>

Each IAT consisted of five steps in each of which participants were given a series of word categorization tasks. In the first step, 5 female names and 5 male names were presented in the middle of a computer screen (e.g., Jennifer, John). The names belonged to the category shown on either the right or left part the screen (i.e., female, male). The participant responded by pressing the “E” key for the left and “I” key for the right. In the second step, the concept words were introduced. The participants categorized these words presented in the middle of the screen (e.g., wedding, business) based on the category shown on the right (e.g., family) or the category on the left (e.g., career). In the third step, the categories presented in Steps 1 and 2 were combined as a one block set (Female + Family and Male + Career). The participants now responded to words that referred to “female” or “family” on the left and to words that referred to “male” or “career” on the right. In the fourth step, participants completed the word categorization tasks again from the first stage, but used the opposite keys to respond. Finally, in the fifth step, the categories were combined again as a single set, but with the opposite combination. The participants responded to words that referred to “female” or “career” on the left and to words that referred to “male” or “family” on the right.

For a set on sexuality, the same 5-stage process was repeated, but presenting words that referred to sexuality (e.g., provocative, sensual). Stages 3 and 5 consisted of 60 trials each. Response latencies (reaction time) during each step were recorded. (See Appendix B for all IAT stimuli, and see Table 2 for the IAT design)

Table 2. The IAT Design (Greenwald, Nosek, & Banaji, 2003)

Block	No. of trials	Function	Items on the left	on the right
1	20	Practice	Female	Male
2	20	Practice	Family/Sexuality	Career
3	20	Practice	Female + Family/ Sexuality	Male + Career
4	40	Test	Female + Family/ Sexuality	Male+Career
5	20	Practice	Male	Female
6	20	Practice	Male + Family/ Sexuality	Female+Career
7	40	Test	Male + Family/ Sexuality	Female+Career

IAT D Score. The IAT score called *D* was the scale that indicated how many individuals have implicit stereotypes about women. Higher scores meant more stereotypic automatic self-beliefs about female while lower scores represented less stereotypic automatic self-beliefs about females. The IAT *D* score was computed based on the improved scoring algorithm for the IAT (Greenwald, Nosek, & Banaji, 2003). The IAT *D* score was calculated for all trials in Stage 3 and 5 for each subject. Trials with latencies over 10,000 ms and subjects who had more than 10% of trials less than 300ms were discarded. Errors were replaced by the mean latency of correct trials for that block plus 600 ms. The IAT *D* score was computed by subtracting the mean response latency for the Stage 3 practice trials from the mean response latency for Stage 5 (incongruent combination minus congruent combination). This difference in scores was divided by the standard deviation of all the latencies in the two practice blocks. The same procedure was followed for the two test blocks. Then the two difference scores were averaged to create the final IAT *D* score.

In sum, two IAT *D* scores, namely, 1) the family IAT and 2) the sexuality IAT were calculated as dependent variables for each participant.

Explicit Stereotypes about Women

Study p Participants completed two different self-report stereotype measures. The Gender and Authority Measure (GAM) was used to measure explicit attitudes toward women ($\alpha = .72$). The GAM (Fench & Raven, 1959) has 15 items where respondents show their preference for male versus female authorities. Examples of these items include “If I were on trial, I would prefer that the judge be a man.” Respondents expressed a level of agreement with each item on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). The second self-reported beliefs about women were assessed by presenting participants with the words standing for *family*, *career*, and *sexuality* traits used in the IAT ($\alpha = .77$). Ratings were compiled on a 7-point scale, ranging from 1 (Strongly Male) to 7 (Strongly Female) (Dasgupta et al., 2004; Rudman et al., 2001) (See Appendix C).

Demographic Measure

A brief questionnaire was used to identify participant age, gender, and race/ethnicity (see Appendix D).

Procedure

The study was presented as research on “Media and Hand-Eye Coordination.” Participants were randomly assigned to each of 7 conditions (news/sexy, news/ nurturing, news/counterstereotypes, entertaining/sexy, entertaining/ nurturing, entertaining/ counterstereotypes, and control). Those in the experimental group watched certain media clips that corresponded to their randomly assigned conditions. After viewing the clip, participants were asked to rate their level of agreement with the following statements: (a) The women in the media clip are stereotypically female and (b) The women in the media clip look realistic. Also, the participants were asked to write brief comments to describe what they had viewed in the media clips. Then the IAT was administered to

measure the participants' implicit stereotypes toward women, both for family and for sexuality. Those who were in the control group did a crossword puzzle for 2 minutes as a distraction task and were asked to complete the IAT directly without viewing any media clips. After finishing the IAT, all participants completed a computer-based questionnaire that assessed their explicit stereotypes about women. Participants were then debriefed and dismissed.

Chapter 4

Results

Manipulation Check

Participants both in the two stereotypes (nurturing vs. sexy) and in the counterstereotype conditions were asked to report on a 5-point Likert-type scale the extent to which 1) the women in the media clip were stereotypically female and 2) whether the women in the media clip looked realistic. (1= strongly disagree, 5= strongly agree).

A one-way Analysis of Variance revealed significant differences in ratings of stereotypicality between the 3 groups 1) Counterstereotypes, 2) Nurturing stereotypes, and 3) Sexy stereotypes, $F(2,147) = 31.07, p < .001$. Participants in the counterstereotype condition considered women in the media clip as less stereotypical ($M = 2.29, SD = 0.78$) than did participants who viewed either the nurturing media clip ($M = 3.72, SD = 0.78$), $p < .001$ or the sexy media clip ($M = 3.25, SD = 1.17$), $p < .000$. Interestingly, an additional post-hoc comparison using Scheffe's test revealed that there was a significant difference between a sexy media clip condition ($M = 3.25, SD = 1.17$) and a nurturing media clip condition ($M = 3.72, SD = 0.78$). Participants perceived sexy clips as being less stereotypical than nurturing clips, $p < .000$.

Also, the manipulation for media type was confirmed, as participants who viewed the news content ($M = 3.68, SD = 0.96$) thought the women in the clip were more realistic than did those participants who watched the entertainment clips ($M = 3.21, SD = 1.02$), $F(1, 148) = 8.10, p < .05$. In sum, the manipulation was successful.

Test of the Hypotheses

Hypothesis 1

Hypothesis 1 predicted that individuals who are exposed to media clips with counter-stereotypical images of women will report lower implicit stereotypes toward women than those who are exposed to nurturing clips, sexy clips or are in a control group. A one-way ANOVA (Analysis of Variance) compared participants in four different groups who were exposed to 1) counterstereotypical women in media clips, 2) nurturing women in media clips, 3) sexy women in media clips, or 4) were placed in a control group. Stereotypicality of media clips (counterstereotypes vs. nurturing stereotypes vs. sexy stereotypes vs. control) was used as an independent variable while two variables, namely, 1) the family IAT, 2) the sexuality IAT, were used as dependent variables.

The Family IAT. A one- way ANOVA (Analysis of Variance) confirmed a main effect for stereotypicality of the media clips (counterstereotypes vs. nurturing stereotypes vs. sexy stereotypes vs. control) on the family IAT, $F(3, 171)= 3.72$, $p=.01$, partial $\eta^2 =.06$. A post-hoc comparison using the LSD test indicated that participants who viewed counterstereotypical women in media clips produced a significantly lower level of

IAT D scores on the standard (family) IAT ($M=.17$, $SD=.38$) than those participants who watched nurturing stereotypical women ($M=.34$, $SD=.34$), $p=.01$, sexy stereotypical women ($M=.37$, $SD=.29$), $p=.003$, or those who were in the control group ($M=.35$, $SD=.27$), $p=.03$.

The Sexuality IAT. Another IAT set had been created to measure implicit stereotypes about women with sexuality traits. To test if the former patterns still held for the newly constructed sexuality IAT, the same analyses were conducted on

the new variable (the one-way ANOVA). The main effect for stereotypicality was also found for the sexuality IAT, $F(3, 171) = 2.95, p = .03$, partial $\eta^2 = .05$. Specifically, the post-hoc comparison using the LSD test revealed that participants who viewed counterstereotypical women in a media clip ($M = .21, SD = .36$) reported a lower IAT D score on the sexuality IAT than those who watched sexy stereotypical women ($M = .42, SD = .37$), $p = .003$. However, a significant difference between the control group and the counterstereotype group was not found, $p = 0.1$ ² (see Table 3 and Table 4)

Table 3. Summary of Descriptive Statistics of the Family IAT

	<i>n</i>	<i>M</i>	<i>SD</i>
Counter	50	.17	.38
Sexy	50	.37	.29
Nurturing	50	.35	.33
Control	25	.35	.27

Table 4. Summary of Descriptive Statistics of the Sexuality IAT

	<i>n</i>	<i>M</i>	<i>SD</i>
Counter	50	.21	.35
Sexy	50	.42	.36
Nurturing	50	.32	.34
Control	25	.34	.30

² For both Scheffe and LSD

Hypothesis 1 was successfully supported as the main effect for stereotypicality and was found both for the sexual IAT and the family IAT. That is, participants who were exposed to counterstereotypical media clips were less likely to express implicit stereotypes on the family IAT and the sexuality IAT (see Figure 1). However, the findings also suggested that implicit female stereotypes on sexuality and stereotypes related to family traits have distinct characteristics since different results appeared for the two dependent variables (the family IAT and the sexuality IAT) after participant exposure to the same manipulation. There was no difference between the control group and the counterstereotype group when measured using the sexuality IAT while there was a significant difference between the control group and the counterstereotype group with the family IAT.

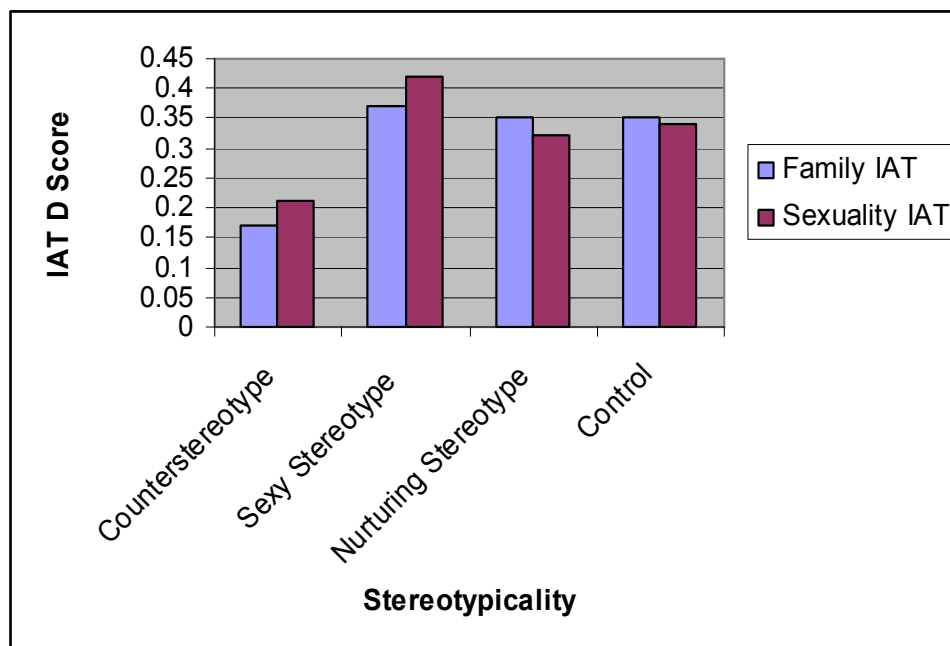


Figure 1. The Main Effect for Stereotypicality

Hypothesis 2

Hypothesis 2 predicted that participants who view counter-stereotypical images of women in news shows will report the lowest implicit stereotypes toward women compared to those who watch counter-stereotypical images of women in entertainment shows or in a control group. A planned comparison was conducted with two specific groups (news counterstereotype vs. entertainment counterstereotype) chosen to compare their means (Tabachnick & Fidell, 2000). Additionally, a one-way ANOVA (Analysis of Variance) compared those participants who were exposed to counterstereotypical women in news clips with a control group. The same analyses were conducted for an entertainment counterstereotype group. There were two dependent variables: 1) the family IAT, 2) the sexuality IAT.

The Family IAT. A one-way ANOVA revealed that those participants in the counterstereotypical news condition group ($M = .08$, $SD = .27$) produced lower IAT D scores than those who in the counterstereotypical entertainment condition group ($M = .26$, $SD = .45$) when implicit stereotypes of participants were measured using the family IAT. The difference was not significant, $F(1, 48) = 2.71$, $p = .10$, partial $\eta^2 = .05$. However, a one-way ANOVA did confirm that there was a significant difference between the counterstereotypical news group and the control group (see Figure 3). Those participants who were exposed to counterstereotypical news clips were less likely to report implicit stereotypes ($M = .08$, $SD = .27$) than were those in the control group ($M = .35$, $SD = .27$), $F(1, 48) = 11.40$, $p = .001$, partial $\eta^2 = .19$. Contrary, there was no significant difference between in the counterstereotypical entertainment group ($M = .26$, $SD = .45$) and in the control group ($M = .35$, $SD = .27$), $F(1, 48) = .67$, $p = .41$, partial $\eta^2 = .01$.

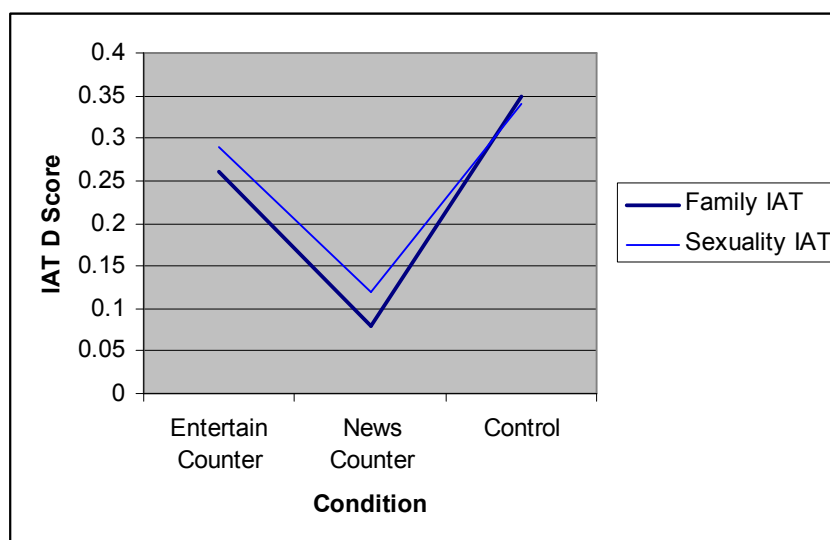


Figure 2. News Shows VS. Entertainment Shows

The Sexuality IAT. A one-way ANOVA revealed that participants in the counterstereotypical news condition grouping ($M= .12$, $SD= .32$) produced lower IAT D scores on the sexuality IAT than those participants who were in the entertainment counterstereotype condition group ($M= .30$, $SD= .38$), $F(1, 48) = 3.11$, $p=.08$, partial $\eta^2 = .01$, consistent with the finding on the family IAT. Additionally, a planned comparison was conducted for the counterstereotypical news condition and the control condition for the sexuality IAT. A one-way ANOVA confirmed that those participants who were exposed to counterstereotypical news clips reported lower implicit stereotypes ($M=.12$, $SD=.32$) than those who were in the control group ($M=.35$, $SD=.27$), $F(1, 48) = 5.82$, $p=.02$, partial $\eta^2 = .10$. Contrary, there was no significant difference between in the entertainment counterstereotype group ($M=.30$, $SD=.38$) and in the control group ($M=.35$, $SD=.27$), $F(1, 48) = .15$, $p=.70$, partial $\eta^2 = .003$, which was a consistent finding with the results of the family IAT (see Figure 3).

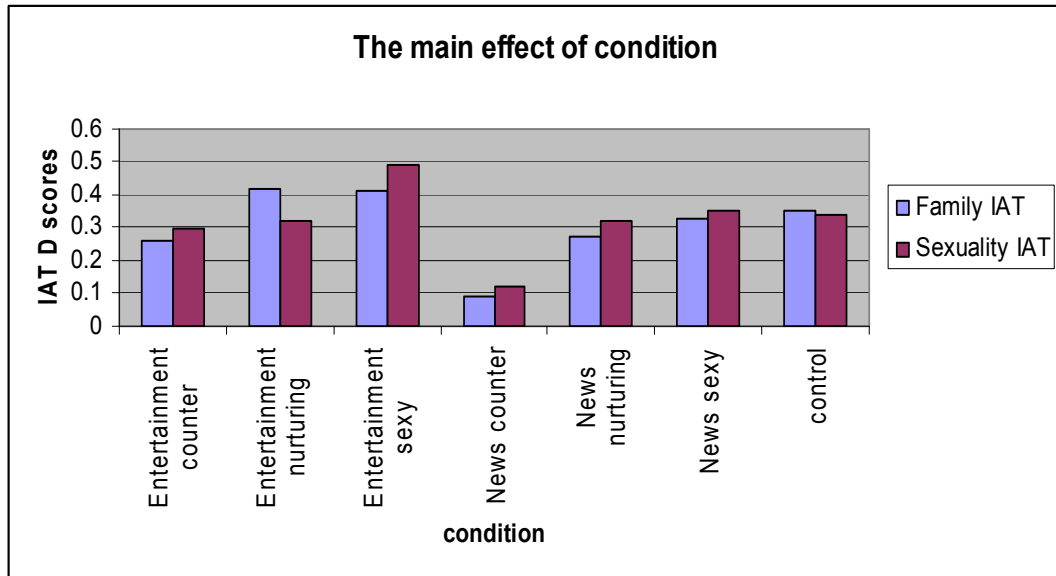


Figure 3. The Main Effect for All Conditions

Hypothesis 3

Hypothesis 3 predicted that people who view sexy stereotypical media clips will produce higher scores on the sexuality IAT than on the nurturing IAT, while people who watch nurturing stereotypical media clips will report higher scores on the family IAT than on the sexuality IAT.

Sexy Stereotype Condition. A planned comparison was conducted and aimed at drawing a comparison between the sexuality IAT *D* score and the family IAT *D* score gathered from a sexy stereotype condition. The two different IAT groups (the sexuality IAT vs. the family IAT) were used as an independent variable, while IAT *D* scores for the sexuality IAT and for the family IAT in a sexy stereotype condition were used as the dependent variable. A one way ANOVA revealed that those who were primed with sexy media clips showed higher IAT *D* scores on the sexuality IAT ($M=.42, SD=.37$) than on the family IAT ($M=.37, SD=.29$), $F(1, 98) = .49, p=.48$. However, the difference between the family IAT *D* score and the sexuality IAT *D* score was not significant.

Nurturing Stereotype Condition. A planned comparison was conducted to examine the difference between the sexuality IAT scores and the family IAT scores in a nurturing stereotype condition. The IAT group (sexuality IAT vs. family IAT) was used as an independent variable, and IAT *D* scores for the sexuality IAT and for the family IAT in a nurturing stereotype condition were used as the dependent variable. A one- way ANOVA revealed that those participants primed with nurturing media clips showed higher IAT *D* scores on the family IAT ($M=.35, SD=.34$) than on the sexuality IAT ($M=.32, SD=.35$), $F(1, 98) = .15, p = .69$.

Even though the results for this comparison did not reach significance, we found a tendency that an increase in IAT *D* scores on sexuality occurred in a sexy stereotype condition the highest family IAT *D* score was found in a nurturing stereotype condition.

Additional Analyses

Explicit Stereotypes about Women

First, participants were asked to self-report the extent to which they thought women possessed authority attributes (e.g., as doctors, lawyers, professors) based on the Gender and Authority Measure (GAM). Each item was averaged for one index for each subject ($\alpha = .72$). High scores on this measure indicated a preference for male versus female authorities. A one- way Analysis of Variance revealed that participant explicit beliefs were not affected by exposure to either counterstereotypes or stereotypes, $F(3, 171)=1.13, p=.35$. Even though there was no main effect of stereotypicality on the changes in implicit gender stereotypes, there was a significant main effect for gender difference in participant self-report beliefs for female stereotypes, regardless of stereotypicality. Males reported higher

scores ($M=2.9$, $SD=0.50$) on this measure than did females ($M=2.7$, $SD=0.45$), $F(1, 173) = 6.11$, $p < .05$.

Second, participants rated the extent to which they considered women exhibited career, family and sexuality traits used in the IAT measures. Scores for the five career traits, the five family traits, and the five sexuality traits were averaged, respectively ($\alpha=.77$). A final explicit stereotype score was created where the career average score was subtracted from either the family average score or the sexuality average score. A one- way ANOVA revealed that there was no significant influence of counterstereotype media clips on the reduction of participants' explicit stereotypes with family attributes and sexuality attributes ($F=2.43$, $p=.12$, and $F=.78$, $p=.37$, respectively). However, there was no gender difference, $p > .05$.

Correlation between Implicit Stereotypes and Explicit Stereotypes

There was no significant correlation between the participants' implicit stereotypes and explicit stereotypes when we measured individual's explicit stereotypes using the Gender and Authority Measure (GAM). Participants' explicit self-reports about women did not correlate to either implicit female stereotypes with family attributes ($r = -.004$, $p = .96$) or implicit female stereotypes with sexuality attributes ($r = -0.09$, $p = .24$), which was found in previous studies (Dasgupta, 2004; Rudman & Kilianski, 2001; Banaji & Greenwald, 1995). Similarly, for the second measure on career, family, and sexuality traits, participants' implicit and explicit stereotypes did not correlate for family traits and sexuality traits ($r = -0.09$, $p = .23$, and $r = .10$, $p = .18$, respectively).

Chapter 5

Discussion

Summary

This study revealed that exposure to counterstereotypical messages can reduce implicit stereotypes about women. The major findings can be summarized as follows: First, relatively weakened implicit stereotypes were produced in the condition where participants were exposed to a counterstereotypical media clip (professional female images) compared to participants who viewed stereotypical media clips (sexy or nurturing female images) or were in a control group. Secondly, participants who were exposed to news counterstereotypical clips reported lower implicit stereotypes about women than those viewers in a control group; however, the significant difference was not found between the entertainment counterstereotypical condition and the control condition. Third, participants produced higher scores on the sexuality IAT than on the family IAT when they viewed stereotypically sexy women in the clips. The participants in the nurturing stereotype condition expressed higher scores on the family IAT than on the sexuality IAT, a finding consistent with the theory of media priming.

Interpretation of Key Findings

The findings of this study contribute to the literature on the effect of counterstereotypes on the reduction of implicit stereotypes by addressing three major topics: 1) the priming effects of media messages, 2) The effect of perceived realism, and 3) the different concept of gender stereotypes (i.e. family attributes and sexuality attributes).

The Priming Effect of Media Messages. Hypothesis 1 was successfully supported by study findings that indicated that exposure to counterstereotypical

messages about women in the media clip weakened the automatic gender beliefs about women. Counterstereotypical events produce considerably different automatic processes, which are distinguished from the processing of stereotypical situations (Blair & Banaji, 1996). Exposure to a stimulus cue (counterstereotype) can affect attitude change (Bargh et al., 1999, 1997; Wittenbrink et al., 2001). Given that the judgment of an object (e.g., a social group) depends on exemplar accessibility, high accessible stimuli cues can have an impact on implicit evaluations of group (Fazio et al., 1986). In this study, we found that exposure to counterstereotypical media messages can modify implicit stereotypes toward women. When counterstereotypical information about women is more accessible, counterstereotypical thoughts toward women are more available in memory, leading to a positive attitude change (the reduction of implicit stereotypes toward women). The support for Hypothesis 1 indicates that media messages from television or film are indeed potential tool that be utilized to moderate implicit stereotypes.

The Effect of Perceived Realism. Hypothesis 2 suggested that the perceived realism of different media show types (i.e., news show vs. entertainment show) influences the level of reduction of implicit stereotypes. A manipulation check revealed that participants who viewed the news content thought that the women in the clip were more realistic than those participants who watched the entertainment clips, a consistent response to the finding that the degree of realism perception for television news is higher than that for television entertainment (Shapiro, 1990, 1991). There was no significant difference between a news counterstereotype group and an entertainment counterstereotype group for both family IAT and sexuality IAT. However, Hypothesis 2 was only partially supported when the news counterstereotype group was compared with a control group. Then there was a

significant difference between a news counterstereotype group and a control group and no significant difference between an entertainment counterstereotype group and a control group. Studies on perceived realism suggest that when messages are perceived as realistic, they have more influence on the perceiver's cognitive, behavioral reactions than when the messages are perceived as unreal (Atkins, 1983, Feshbach, 1972). When people perceive a stimulus as real, it encourages them to process that information deeply, which results in better memory for later (Huston et al., 1995; Salomon, 1983). These findings may indicate that the more realistic a description is, the more likely it will be to access related information in memory, a process that leads to easier retrieval of related information. In effect, media messages from news shows have a stronger effect on the reduction of implicit stereotypes than do media messages from entertainment shows.

Studies on political communication suggest that people who usually view news take advantage of abundant political information to become more knowledgeable, while people who prefer to view entertainment shows abandon the news and become less likely to learn about politics (Prior, 2005). People who view news shows also become more knowledgeable about counterstereotypical information on news shows after being primed with counterstereotypical messages. On the other hand, people who watch entertainment shows are less likely to learn counterstereotypical information. This, in turn, promotes more awareness of counterstereotypical female examples in news shows and increased accessibility of related information in the memory that then does influence viewers' attitudes and beliefs.

When taking these findings together, the study determined that the results for Hypothesis 2 indicate that counter-stereotypical content in news shows

is a more effective way to weaken implicit stereotypes of women than the result found in entertainment shows for female participants.

The Different Concept of Gender Stereotypes. Two different types of IAT were conducted as dependent variables to measure implicit stereotypes toward women. Paying attention to the content analysis for female stereotypes indicated that women are usually described in the mass media as a homemaker or as sex objects by highlighting their physical attractiveness (Aubrey & Harrison, 2004; Ford et al., 1998; Lysonski, 1985; Wyckham, 1987; Thompson & Zerbinos, 1995). This study was directed toward differentiating nurturing stereotypes from sexy stereotypes. The IAT on previous studies was usually constructed using family traits or weak/feminine characteristics (Dasgupta, 2004; Blair, 2001). Noting that few studies are dedicated to implicit female stereotypes with sexuality attributes, a sexuality IAT was created.

The result of this study shows a slightly different pattern between the family IAT and the sexuality IAT. The counterstereotype group reported a significant lower level of implicit stereotypes for women compared to all other groups (control group, sexy stereotype group, and nurturing stereotype group) when measured by the family IAT. The finding it was significantly different only from the sexy stereotype group when reported by the sexuality IAT. A statistically significant difference between the news counterstereotype group and the entertainment counterstereotype group was not found when female participant implicit stereotypes toward women were measured by the sexuality IAT; there was a significant difference found by the family IAT (only for female participants). These findings suggest that female stereotypes for sexuality and for family attributes are processed and activated differently since they had different results for the same manipulation. Implicit stereotypes of women with nurturing or family

features were more malleable than those for sexuality attributes. That is, implicit stereotypes with sexuality attributes are less likely to be moderated by exposure to counterstereotypes than are stereotypes with family traits (see Figure 4).

The family IAT and the sexuality IAT were weakly correlated ($r=.17$, $p=.02$). Studies on gender subtypes suggest that home maker and sex object subtypes of women are different from each other, as each has distinguished sets of attributes (Deaux et al., 1985; Eckes, 1994).

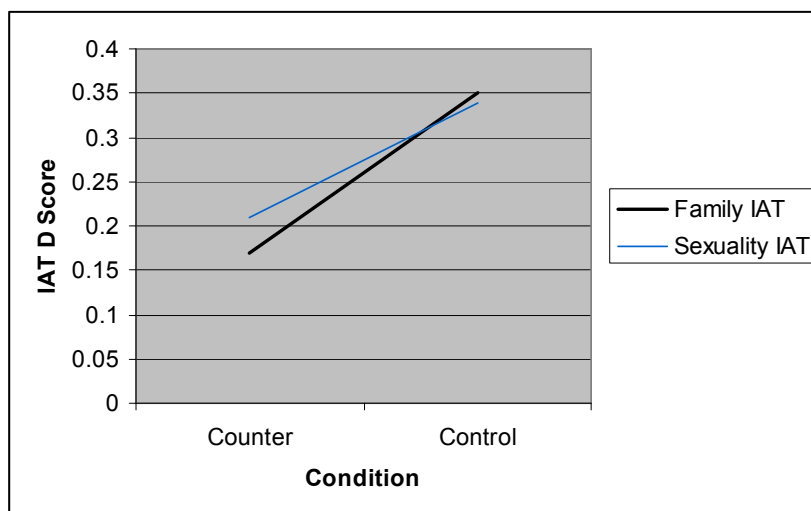


Figure 4. The Difference Between the family IAT and the sexuality IAT

Also, one subtype is qualitatively different from the other, which generates different attitudes and judgments toward women (Lavine, Sweeney, & Wagner, 1999). For the control group in this study, there was no significant difference between participants' initial automatic beliefs with the sexuality IAT ($M=.34$, $SD=.30$) and the family IAT ($M=.35$, $SD=.27$). However, for those who viewed sexy media clips, participants showed higher IAT D scores on the sexuality IAT ($M=.42$, $SD=.37$) than on the family IAT ($M=.37$, $SD=.29$). Participants who

viewed nurturing media clips, reported higher IAT *D* scores on the family IAT ($M=.35$, $SD=.34$) than for the sexuality IAT ($M=.32$, $SD=.35$). This finding is consistent with priming effects, namely, that heightened accessibility of memories does influence the perceiver's subsequent behaviors and judgments (Bargh & Chen, 1997; Hermans et al., 2001; Berkowitz & Rogers, 1986).

Eckes (1994) found that only the housewife stereotype (e.g., nurturing, family) showed the global female stereotype. The manipulation check revealed that the study participants perceived women who were in sexy clips as less stereotypically female than women in nurturing clips. However, for implicit stereotypes, the findings inferred that there was little difference between the IAT *D* score for the family IAT ($M= 0.35$) and the sexuality IAT ($M= 0.34$) in a control group. These findings indicate that even though people think sexy stereotypes are not typical female stereotypes, for implicit stereotypes, sexy stereotypes initially activate as strongly as nurturing stereotypes without any priming effects.

Additional Discussion

The Relationship between Explicit and Implicit Stereotypes. This research found that exposure to counterstereotypical media clips had an effect on changes in the participants' implicit stereotypes, but not in explicit stereotypes. The correlation between implicit stereotype and explicit stereotype was thus nonsignificant in this study. The different patterns for explicit and implicit stereotypes were derived from their distinguished characteristics. Implicit stereotypes are activated mindlessly while the activation of explicit stereotypes remains under control (Akrami et al., 2006, Banaji & Greenwald, 1995). As explicit attitudes and beliefs are directly expressed or publicly stated, people may not always be willing to share their private attitudes with others because of social desirability. Also, people may not actually be fully aware of many of their own

attitudes. These arguments support the view for why explicit stereotypes and implicit stereotypes are not strongly associated or perhaps even not correlated at all.

Gender Difference. Previous literature on implicit gender stereotypes found that sex differences in implicit gender stereotypes are rare. Implicit gender stereotypes are very similar for both men and women. Especially, women's attitudes toward female implicit authorities do not differ significantly from those of men (Ruman, Greenwald, & McGhee, 2001; Greenwald & Banaji, 1995, Banaji & Hardin, 1996, Blair & Banaji, 1996). However, men tend to show more explicit prejudice against female authorities than do women (Banaji & Hardin, 1996, Blair & Banaji, 1996, Rudman, & Kilianski, 2001). In this study, we found a similar result for gender difference in explicit stereotypes when that difference was measured by GAM (Gender Authority Measure). Unexpectedly, for implicit gender stereotypes, however, there was a significant gender difference in the entertainment counterstereotype condition; yet other conditions (e.g., news counterstereotype, entertainment sexy stereotype) had no main effect for gender difference on the implicit stereotypes. Men who viewed counterstereotypical media clips on entertainment shows ($M = -.26$, $SD = .56$) reported less implicit stereotypes on the family IAT than did women ($M = .39$, $SD = .32$), $p < .005$, $\eta^2 = .3$. Given the findings from previous gender stereotype studies, this result suggests that women's attitudes toward female implicit authorities do not differ significantly from those of men. The finding of this study is thus not compatible with the prior research. Interestingly, even though it was not significant, men who viewed news counterstereotypical clips ($M = -.006$, $SD = .48$) lowered their stereotypes on the sexuality IAT more than did women ($M = .15$, $SD = .27$) (see Figure 5 and 6). However, this finding does have some limitations. The number of male participants in this study only totaled 5, while there were 20 female participants in the

entertainment counterstereotype condition. As the number of male and female participants was not balanced, we cannot jump to the conclusion that gender difference for media type is fully reliable.

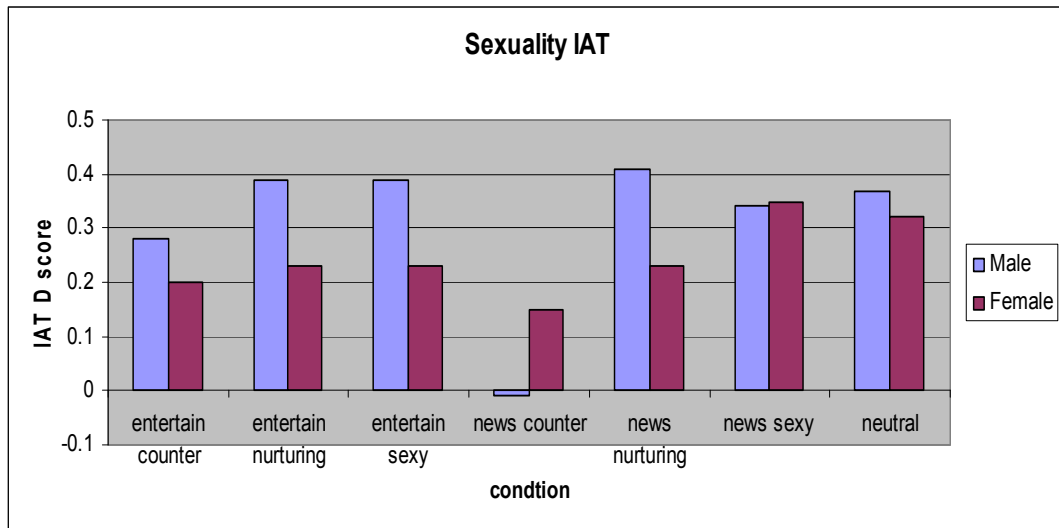


Figure 5. Gender Difference on the family IAT

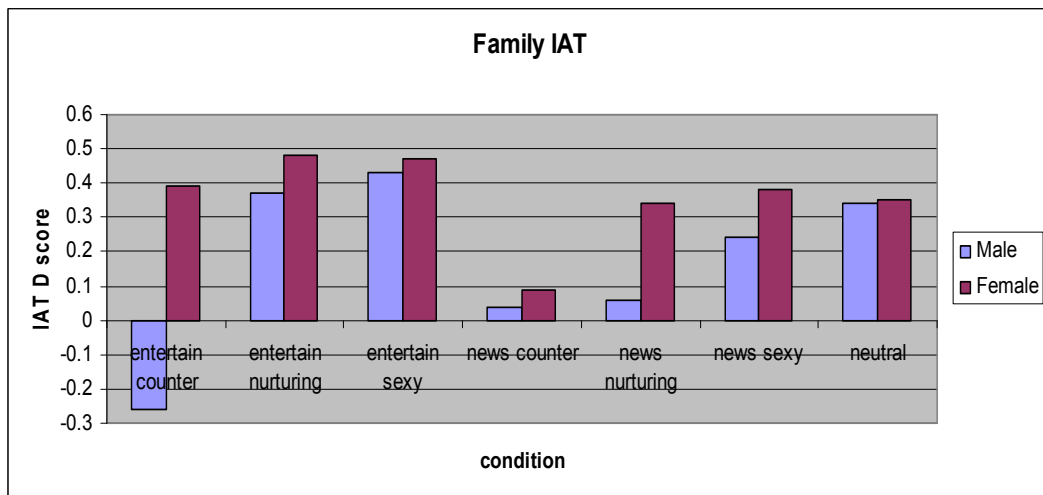


Figure 6. Gender Difference on the sexuality IAT

Advantages and Disadvantages of the study

This study was able to reduce stereotypical ideas toward women, but participants never did drop their IAT *D* score below the zero point, on average. Negative numbers for IAT *D* scores (below zero) mean that there are stronger associations for females with counterstereotypical traits (e.g., professional) than for females with stereotypical traits (e.g., supportive). However, Dasgupta and Asgari (2004) were able to achieve this below- zero effect. In other studies on the malleability of implicit stereotypes, participants were given additional tasks, such as a quiz (Dasgupta, 2004; Dasgupta, & Greenwald, 2001) or an essay question (Wittenbrink, 2001) to actively be reminded of counterstereotypical images they had viewed at the beginning of the experiment. Especially, in Wittenbrink and Park's study (2001), participants spent 20 minutes writing an essay about what they had viewed on the media clips. These particular activities may assist in producing stronger main effects on stereotype reduction (e.g., IAT *D* scores below zero).

This study also had its participants briefly explain what they remembered from the media clips to produce stronger influences on stereotype reduction. Although the task in that regard was not as intensive as in other studies, the result, nevertheless, cannot be completely free from additional task effects. That is, even though we successfully replicated the effect of counterstereotypes on the malleability of implicit stereotypes, it is still ambiguous as to whether this result was derived from the activity of reminding of the examples or caused by viewing the media clip itself.

Future Research

Future research on the reduction of implicit stereotypes is suggested based on the findings of this study and its limitations. The main topics that need further

investigation relate to 1) gender difference, 2) different concepts of female stereotypes, 3) media effects.

Gender Difference. Given that prior studies have investigated gender difference in the activation of stereotypes, it is important to examine gender difference in terms of moderating gender stereotypes as well. In this regard, a future research question is suggested: Can different types of media (e.g., entertainment vs. news) affect females and males differently in terms of moderating a specific type of implicit stereotype (e.g., sexy vs. nurturing)?

Different Concepts of Female Stereotypes. We found some implications in this study where the moderation of female stereotypes on sexuality was less likely to be modified than were the female stereotypes for family traits. However, it is still unclear how differently the moderation of nurturing stereotypes and sexy stereotypes occurs and why it happens. Future studies can examine whether or not sexy stereotypes are more strongly embedded in our memories and are then activated more automatically than nurturing stereotypes following reception of priming media messages, such as sexy music video or sexy reality shows.

Media Effects. It is still ambiguous whether the moderation of implicit stereotypes was derived from intensive activities to remember counterstereotypical messages or caused by stimulus cues. It will be interesting to compare different kinds of activities in future studies to reduce negative implicit stereotypes (e.g., the effect of media mediation training vs. priming in regard to counterstereotypical media messages vs. priming with counterstereotypical celebrities vs. positive stereotypes) and thus examine which has the stronger effects. Further, to make the effects on stereotype reduction last longer, it will be interesting to examine which method is the most effective in the long term?

Implications for Pro-social Aspect of Media

One of the pro-social effects of mass media is “stereotype reduction” (Mares, & Woodard, 2005). The findings of this study that counter-stereotypical content in media clips can reduce adult implicit stereotypes do contribute to a pro-social aspect of media and understanding of it. Mass media are usually recognized as a source that induces negative stereotypes of minor social groups, such as women or blacks. However, the findings of this study indicate that counterstereotypical media messages on television or in films can a solution to moderate implicit stereotypes. Also, the data suggest that if counterstereotypical portrayals of women were more accessible in our current media environment, viewers might become less likely to develop stereotypical attitudes. Additionally, counter-stereotypical content in news shows may be the most effective way to weaken implicit stereotypes of women. These findings can contribute to the literature on pro-social effects and lead the research in new directions.

APPENDIX A

Description of Media Clips

Entertainment Sexy Stereotypes

1. Cheerleader dancing for the boy on the football field
2. Girls wearing underwear
3. Woman with her arms around dependants in court

Entertainment Nurturing Stereotypes

1. Mom taking care of her hurt son and bring him inside
2. Mom eating with her son in the kitchen
3. Mom singing lullaby to baby

Entertainment Counterstereotypes

1. Female President of USA giving her speech
2. Female doctor doing her surgery
3. Female soccer player playing soccer

News sexy stereotypes

1. Victoria secret runway models/ Fashion show
2. Itsy bitsy Bikini History
3. Bra Industry Story

News nurturing stereotypes

1. Housewife talking about her life with her husband and kids
2. Mom surprisingly meeting with her son from Iraq
3. Being a mom as a job from a perspective of economics

News counterstereotypes

1. Female boxer story
2. First Female Thunderbird pilot story
3. The First Female President of Harvard story

APPENDIX B

IAT items

Career words	Family words	Sexuality words
Career	Family	Provocative
Business	Children	Arousing
Office	Wedding	Sensual
Professional	Home	Desirable
Salary	Parents	Erotic

Male names	Female names
Jeffrey	Jennifer
John	Emily
Daniel	Anna
Ben	Julia
Paul	Michelle

APPENDIX C

1. The Gender and Authority Measure (GAM) / (Fench & Raven, 1959)

1. If I were in serious legal trouble, I would prefer a male to a female lawyer.
2. The people I look up to most are women.
3. I would feel more comfortable if the pilot of an airplane I was traveling on were male.
4. I would rather be stopped by a woman police officer (vs. a man).
5. I probably prefer that the U.S. president is a man, versus a woman.
6. In general, I would rather work for a man than for a woman.
7. If I were having a serious operation, I would have more confidence in a male surgeon.
8. When it comes to politics, I would rather vote for women than for men.
9. For most college courses, I prefer a male professor to a female professor.
10. Personally, I would rather go to a male doctor than a female doctor.
11. In general, women make better leaders than men do.
12. In most areas, I would rather take advice from a man than from a woman.
13. In general, I would rather take orders from a man than from a woman.
14. If I were being sentenced in court, I would prefer that the judge be a woman.
15. In general, I feel more comfortable when a man (vs. a woman) is in charge.

2. Trait

Family Trait

They are good at planning weddings.

They are home makers.

They are good at taking care of children.

It is their job to care for family members.

They make good parents.

Sexuality Trait

They are sexually provocative.

They should be sensual toward the opposite sex.

They should appear desirable to the opposite sex.

They try to arouse the opposite sex.

They try to be erotic.

Career Trait

They make good managers.

They are good at running business.

They make high salaries.

They spend their day in an office.

They are good at running business.

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