The Allure of Aphrodite: How Gender-Congruent Media Portrayals Impact Adult Women’s Possible Future Selves

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The Allure of Aphrodite:

How Gender-Congruent Media Portrayals Impact Adult Women’s Possible Future Selves

The present study investigated how media exposure affects how non-college women envision their futures. Over five days, a prolonged exposure experiment presented childless women (aged 21-35) with magazine portrayals of females in gender-congruent (mother/homemaker or beauty ideals) or gender-incongruent (professional) social roles. Responses to an open-ended question revealed that 3 days after media exposure, only gender-congruent roles remained salient. Exposure to homemaker portrayals induced more thoughts about possible future selves and fostered concerns about motherhood and career roles; it also produced more positive affective valence compared to exposure to portrayals of professional women, particularly among women with gender-congruent life circumstances. Exposure impacts were mediated by the extent to which women linked the magazine portrayals to their own possible future selves.

Keywords: gender roles, prolonged exposure experiment, adult women, possible future selves, role congruity theory
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Since the days of Greek mythology, humankind has been fascinated with women’s beauty and fertility, personified by the Greek goddess Aphrodite. That fascination apparently has not dissipated, even though in the last century women’s lives and rights have greatly extended beyond traditional roles. For instance, over the last 40 years, the number of women in the workforce has increased dramatically. Particularly, women with children are joining the workforce to a greater extent than in the past (U.S. Department of Labor, 2013). Despite this societal shift, women still take on the majority of work at home, and in fact average more work hours per week than men when unpaid work is considered (United Nations, 2010). Therefore, women are taking on a new social role by working outside the home, yet the expectations associated with the traditional roles concerning home and appearance are not waning. The media may contribute to such gender-congruent lifestyles: Ample content analyses have shown that women are both underrepresented and portrayed in gender-typed fashion on TV, in magazines, and in videogames, etc. (e.g., Scharrer, 2013). Exposure to these portrayals could reinforce gender-congruent self-concepts among women.

Drawing on the notion that gendered roles strongly influence occupation and life path choices (Eccles, 1994; Su, Round, & Armstrong, 2009), the present work examines how media exposure affects adult women regarding their possible future selves (PFS). Given that PFS guide individuals’ current motivations and behaviors, and that media can reinforce expectations for the self, it is imperative to empirically test the relationship between the two (Eagly, Eastwick, & Johannesen-Schmidt, 2009; Signorielli, 1993). To examine these media impacts, the present investigation first reviews how women are portrayed in the media and then discusses
Female Role Portrayals in the Media and Their Impacts

Images of women representing idealized beauty and sex appeal have dominated mainstream media for decades (see overview by Scharrer, 2013). Analyses of television and film have revealed that women are overwhelmingly shown as objects of physical attractiveness and sexual desirability (e.g., Lauzen, Dozier, & Horan, 2008; Smith & Granados, 2009). For print media, a study by Lindner (2004) suggests that there has been a "remarkable increase" of sexualized portrayals of women in magazine advertisements since the 1970s. Nearly a hundred empirical studies have demonstrated that exposure to idealized female beauty imagery in the media leads to decreased state self-esteem, has a negative effect on current mood states, leads to body dissatisfaction, and induces higher body-focused anxiety (for a review, see Grabe, Ward, & Hyde, 2008). In fact, there has been a general call for decreasing the number of female models who represent stereotypical beauty ideals, and instead media should provide more representations of women in non-traditional, career roles (e.g., Covert, 2003; Davies, Spencer, Quinn, & Gerhardstein, 2002). It is puzzling, then, that the media outlets featuring idealized and gender-congruent portrayals remain widely popular among women—perhaps women derive enjoyment from them after all. Social role theory and gender congruity theory provide insight into why women may enjoy these media messages and are reviewed in the following sections.

Gender: Roles, Congruity, and Conformity

The concept of gender goes beyond the biological assignment of sex and instead
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1 encompasses what it means to be a man or a woman. Social role theory has been used to better
2 understand the concept of gender by explaining socially constructed gender norms (i.e.,
3 expectations and obligations) aligned with living as and embodying a certain gender (Eagly,
4 1987). Media play a significant role in the formation and reinforcement of both social norms
5 (Bandura, 2001) and gender norms (Bussey & Bandura, 1999). Prior empirical investigations
6 have primarily examined interpersonal outcomes associated with adherence to and deviation
7 from social norms. Specifically, when considering gender-typed norms, role congruity theory
8 provides a framework for exploring conformity outcomes. However, there is a paucity of
9 research applying role congruity theory to mediated contexts.

The work on gender roles was largely driven by social cognition (Eagly, 1987) and
information processing perspectives (e.g., Bem, 1981). A prominent approach has been Eagly’s
role congruity theory (Eagly, 1987; Eagly & Karau, 2002). According to role congruity theory,
negative attitudes toward a non-conforming woman occur when individuals perceive that the
woman deviates from the norms outlined by gender roles, and her behavior is seen as
incongruent with expectations (e.g., a woman occupies an agentic, leadership role in the
workplace; Eagly & Karau, 2002). Following this, women who do not adhere to traditional
gender roles are perceived as unfavorable, and their agentic behavior is devalued. Gender-typed
norms support the notion that success in the workplace is dependent on masculine traits, which
may influence occupational segregation by gender (Cejka & Eagly, 1999). For example, a
woman who does not behave within the culturally expected norms (i.e., behavior that is "agentic"
in nature) will be treated more harshly than a woman who behaves in a more "communal" way
(e.g., Ritter & Yoder, 2004). Further, in line with role congruity theory, women who demonstrate
warmth and affection are socially rewarded, whereas those who demonstrate more masculine
(e.g., self-promoting, direct, and dominant) behaviors are socially punished (Diekman & Goodfriend, 2006). However, this does not explain how a woman's perception of whether or not her own behavior follows gender norms affects her self-concept and leads to self-regulation. Accordingly, scholars expanded the role congruity perspective to affective consequences of gender conformity on self-evaluations, as opposed to evaluations of others (e.g., Good & Sanchez, 2010; Wood, Christensen, Hebl, & Rothgerber, 1997). Specifically, they proposed that gender norms are incorporated into the ideal self; the extent to which they are incorporated into the ideal self influences the positive affect individuals will experience from adherence to these norms (Higgins, 1987). For instance, Wood et al. (1997, p. 523) noted: “consensually held [gender]-typed norms may be adopted as personal standards against which people judge their own behavior […] , and people are likely to feel good about themselves when they conform to these valued personal standards.” In that case, gender-congruent behavior would not only be reinforced by others, but also by one's own cognitions about the self. In other words, affective responses to one’s own behavior also reinforce gender norms, if the individual views such norms as relevant. Along these lines, seeing gender-congruent portrayals in the media can be rewarding through positive affect resulting from perceived gender conformity, especially if one’s own conduct converges with traditional gender roles. This phenomenon may translate not only into short-lived affective experiences, but may have further implications for how women view their PFS and make decisions about their future.

Possible Future Selves

How individuals conceptualize themselves shapes their thoughts, emotions, and behaviors (Leary & Tangney, 2003). Self-concepts have a temporal dimension pertaining to past self, current self, and possible future self (e.g., ‘I was not athletic as a child, but now as college
student, I run every day and hope to participate in a marathon one day’). Possible future selves (PFS) “represent specific, individually significant hopes, fears, and fantasies” (Markus & Nurius, 1986, p. 954) related to a version of the self that an individual might become in the future. Ideas of which values, beliefs, and roles one might embody in the future are dependent on the self in the past, as well as conceptions of the self in the current state. PFS guide individuals' current motivations, behaviors, and decision-making. Throughout the life span, PFS remain relevant (Cross & Markus, 1991) as individuals continue to envision what their future could look like, and PFS affect behavior and important life decisions. For example, PFS can impact life partner selection: Women who envision themselves as primary homemakers in the future are more likely to place importance on provider characteristics in their future mate selections (Eagly, Eastwick, & Johannesen-Schmidt, 2009). Further, Brown and Diekman (2010) found that distant possible selves aligned with gender-typed social roles, such that women listed more family selves than men. Interestingly, research has shown that, if an intervention induces a shift in PFS, changes in self-regulatory behavior may occur (Oyserman, Bybee, & Terry, 2006). Given that media may influence PFS and thus subsequent behavior and life decisions, it is important to examine how repetitive, prolonged exposure to gender-(in)congruent media portrayals affects them.

Prior and Present Empirical Research on Media’s Impact on Life Outlook

Young, college-aged adults explore their futures and contemplate important relational and professional decisions at this life stage (Arnett, 2000; Peake & Harris, 2002). These decisions have been shown to be influenced by media exposure (Ex, Janssens, & Korzilius, 2002; Segrin & Nabi, 2002; Signorielli, 1993; Authors, 2012). For example, a prolonged exposure experiment (Authors, in press) presented college women with magazine pages showing females in either professional or caretaker roles, as beauty ideals, or pages without individuals
shown, and revealed that portrayals of professionals and caretakers instigated more negative responses related to personal future than beauty ideals. While much of the media exposure literature has focused on younger, college-aged adults, less empirical work has examined post-graduates. Yet women are having children at a later age than in the past: The average age of first-time mothers is now about 25 years (Mathews & Hamilton, 2009), with pregnancy rates declining for women aged 20-25 and increasing for those over 35 (Martin, Hamilton, Ventura, Osterman, & Mathews, 2013). Evidently, important life decisions occur in the mid-to-late twenties and into the thirties and affect whether and how women will balance multiple roles in the future. Thus, media impacts on this population regarding future visions deserve close attention. The present investigation examines the effect of prolonged exposure to portrayals of women in magazine advertisements and articles on adult women who are in their twenties and early thirties and currently not working toward an undergraduate degree.

A previous analysis of a subsample from the data collection presented here showed that prolonged exposure to homemaker or beauty portrayals increased the number of children that non-married, childless women desired (Authors, under review). Compared to baseline, women exposed to professional portrayals indicated that they wanted to wait longer before having their first child. These findings support the notion that media exposure can affect fertility desires. However, further analysis is needed to investigate effects of media exposure on PFS more broadly.

Hence, the present work focuses on media impacts among married and non-married childless women in the 21-35 years age range regarding their PFS and the affective valence of these outlooks. We expect that prolonged exposure to portrayals of women in different social roles affects visions of PFS such that portrayed roles are rendered salient, even days after the last
exposure. Relying on gender-typed norms as described by various scholars (e.g., Gordon, 2000; Scharrer, 2013), the study utilizes portrayals of women in mother/homemaker roles, beauty ideal roles, and professional roles to examine how exposure to media portrayals of these gender-(in)congruent roles affects adult women’s PFS. Given that previous research demonstrated that prolonged exposure to portrayals of women in mother/homemaker roles fosters concerns about family, prolonged exposure to portrayals of women in beauty ideal roles fosters concerns about appearance, and prolonged exposure to portrayals of women in professional roles fosters concerns about career among female college students (Authors, 2014), we predict that the same will hold true for adult women. Based on social role theory and the gender conformity perspective outline above, consensually held gender-typed norms may become incorporated into personal standards, which people use to evaluate themselves and what they strive for in their possible future selves. Accordingly, exposure to portrayals of a gender-congruent role in the media should render concerns related to the norm more salient to individuals of the portrayed gender, as they perceive greater relevance of the norm for their own gender. Hence, the following hypotheses are proposed:

H1: Prolonged exposure to magazine portrayals of women in the mother/homemaker role increases concerns about future family and children compared to exposure to portrayals of women in the (H1a) beauty ideal and (H1b) professional roles.

H2: Prolonged exposure to magazine portrayals of women in the beauty ideal role increases concerns about future appearance compared to exposure to portrayals of women in the (H2a) mother/homemaker and (H2b) professional roles.

H3: Prolonged exposure to magazine portrayals of women in the professional role increases concerns about future career compared to exposure to portrayals of women in the (H3a)
beauty ideal and (H3b) mother/homemaker roles.

Next, we propose that exposure to roles that women have yet to fulfill induces more concerns about PFS. Thus, portrayals of mother/homemaker roles may induce more concerns for adult, childless women when thinking about their future than portrayals of women in other roles.

Hence, we predict:

H4: Prolonged exposure to magazine portrayals of women in mother/homemaker role leads to mentioning more concerns about their own futures compared to exposure to portrayals of women in beauty ideal or professional roles.

Additionally, we draw on the notion of role congruity and resulting affective responses as outlined above for the next hypotheses, in which H5a-e pertain to portrayals of the mother/homemaker role versus portrayals of women in the professional role, whereas H6a-e pertain to portrayals of beauty ideal role versus portrayals of women in the professional role.

Role congruity theory suggests that onlookers evaluate individuals more positively when these individuals comply with the generally held norms for their gender (Eagly, 1987), compared to observing individuals who diverge from these norms and whose actions are incongruent with the expectations associated with their gender. The hypotheses H5a and H6a extend this rationale to the affective valence of possible future selves as affected by exposure to gender-(in)congruent media portrayals. Further, drawing on the notion of gender conformity and resulting affective responses regarding oneself, the affect linked to possible future selves should vary with the extent to which individuals already adhere to gender-typed norms in their actual lives, such that greater adherence produces more positive affect upon exposure to portrayals of the norms. In other words, we propose that the female gender roles are relevant for all women, but how women respond to related portrayals will depend on the extent to which they comply with them. This
rationale leads to H5b-d and H6b-d that consider individuals’ life circumstances as they relate to
gender-typed norms. Specifically, marital status (being married), body mass index (BMI), and
work status (number of work hours per week) will be utilized to capture the extent to which
individuals’ circumstances converge with gender-typed norms for women’s lifestyles. Finally,
two hypotheses (H5e and H6e) test whether PFS is the actual link between exposure and
outcomes as proposed in the theoretical rationale for the present work.

H5a: Prolonged exposure to magazine portrayals of women in the mother/homemaker role induces a more positive affective valence related to PFS than exposure to the gender-incongruent portrayals of women in the professional role.

H5b-d: The effect of exposure condition resulting from gender conformity, proposed in H5a, will be greater for women adhering to traditional gender norms such that women in the mother/homemaker portrayals group who are married (H5b), who have a lower BMI (for operationalization, see below; H5c), and/or who work less per week (H5d) will demonstrate more positive affect than women in the professional portrayals group who are married, have a lower BMI, and/or who work less per week.

H5e: The impact on affective valence specified in H5a is mediated by the extent to which women link the magazine portrayals to their own PFS.

H6a: Prolonged exposure to magazine portrayals of women in the beauty ideal role induces a more positive affective valence related to PFS than exposure to the gender-incongruent portrayals of women in the professional role.

H6b-d: The effect of exposure condition resulting from gender conformity, proposed in H6a will be greater for women adhering to traditional gender norms such that women in the beauty ideal portrayals group who are married (H6b), who have a lower BMI (; H6c), and/or
who work less per week (H6d) will demonstrate more positive affect than women in the
professional portrayals group who are married, have a lower BMI, and/or who work less per
week. H6e: The impact on affective valence specified in H6a is mediated by the extent to which
women link the magazine portrayals to their own PFS.

Method

Overview

Adult white women between 21 and 35 years of age (N = 214) who were not enrolled in
any undergraduate courses participated in an online prolonged exposure experiment (for similar
research designs, see Authors, in press; Rössler & Brosius, 2001; Zillmann & Bryant, 1988; for
analyses of a subsample from the same research procedure, see Authors, under review). All
participants received $50 for completing the study. In the first session, respondents completed a
brief sign-up for a study allegedly about enjoyment of magazine journalism and advertising. In
the second session, participants completed baseline measures on a Friday. Then, for five
sessions, respondents were exposed to media messages on the following weekdays (Monday-
Friday) and completed a final post-test session on the following Monday. During the five
exposure sessions, the three experimental groups viewed magazine pages featuring women in
either mother/homemaker portrayals, beauty ideal portrayals, or professional portrayals, and
completed evaluation questions after viewing to enforce the cover story. The experimental
groups were developed to reflect both the stereotypical portrayal of women in contemporary
media and common social roles for women.

Procedure

Recruitment. The recruitment announced an online, 10 day study on "magazine
advertising and journalism," and asked for adult women between the ages of 21 and 35 to
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participate. Upon completing the study, participants received $50 per a personal check, an Amazon gift card, or a PayPal deposit. The announcement did not reference ethnicity or parental status. Popular social networking sites (e.g., Facebook), online classified ads (e.g., Craigslist), and emails sent to students enrolled at a large Midwestern university (who were asked to forward the message to adult women) served to distribute the recruitment announcement. Almost half of the participants were recruited through online networking sites and classifieds (51.5%); a quarter of participants through receiving an email with recruitment information (27%); and the rest through ‘word of mouth’ or ‘other’ (20.5%). Although the recruitment method did not allow for a representative sample, statistical methods (see section ‘Group Assignment’ below) ensured that the experimental groups were equivalent; thus, differences in the groups’ responses reflect the media exposure effects of interest.

**Sign-up.** After providing consent, participants indicated their biological sex, ethnicity, educational achievement, relationship status, maternal status, and desire for children. Height and weight were embedded in various distractors (e.g., “Do you own a car?”) and were subsequently used to calculate BMI.

**Baseline.** On the Friday before the media exposure sessions were set to begin, participants answered questions related to their habitual magazine use, psychological states and traits, and demographics (see ‘Participant Characteristics’ section). At the end of the session, participants were thanked for their time and notified that they would receive the link for the next session in three days.

**Media exposure sessions.** On the following Monday, the five daily media exposure sessions began. For each weekday, the session started with “Welcome back for a daily session of our online study on media enjoyment! Today you will look at several magazine pages. We will
then ask you about your personal impressions and evaluations of these pages.” Participants then clicked through the magazine pages much as they would if they were turning the pages of a magazine (see ‘Stimuli and Manipulation Check’ section for a description). To support the cover story of a study on magazine journalism and advertising, following perusal of the magazine pages, participants answered several distractor questions, such as, “This article is interesting” and "This ad is informative" on 7-point Likert scales ranging from ‘1 = not at all’ to ‘7 = extremely.’

Post-test session. The post-test session was completed three days after the last daily media exposure session and presented the same psychological measures as the baseline session. Then participants responded to the prompt: “Over the past 7 days, how much have you thought about your current life situation and your future? What were your thoughts? How much have you thought about your goals in life and your relationships? What were your thoughts? Along these lines, please type any thoughts or feelings that come to your mind in the box below. You may type as much as you wish.”

Group Assignment

For the sign-up session, the sample consisted of 589 adult women. Socio-demographic variables were then used to invite only a specific subsample to complete the baseline session. A total of 214 White, childless women, between the ages of 21 and 35 ($M = 25.91, SD = 3.19$), and who were not enrolled in undergraduate courses at the time completed all the sessions and were considered in the analyses. Based on a hierarchical cluster analysis with variables described in detail below (see ‘Participant Characteristics’ with Ward method and squared Euclidian distances), a randomized complete block design was applied to equally represent participant characteristics of interest across conditions. This method ensured that each resulting cluster was proportionally represented in each experimental group while maintaining random assignment to
conditions (see Authors, in press, for more details on this approach). The experimental groups were equivalent regarding the following measures: age, self-esteem, gender role attitudes, habitual magazine use, desire for children, education level, work hours, relationship status, and BMI (measurements explained below). This approach ensured that the groups were equivalent regarding baseline measures that could affect hypothesis testing. Participants with complete data were equally distributed across experimental groups—70 for mother/homemaker, 77 for beauty ideal, and 67 for professional.

Participant Characteristics

**Self-esteem.** Participants completed the 20-item Self-Esteem Scale (Heatherton & Polivy, 1991) with a mean score of 3.55 ($SD = .57$). Statements were rated on a 5-point Likert scale ranging from ‘1 = completely disagree to 5 = completely agree’ (Cronbach’s $\alpha = .89$). An example item from the scale was: “I am worried about whether I am regarded as a success or failure.” Self-esteem was utilized as a variable to create equivalent groups.

**Gender role attitudes.** Thirteen items on gender roles attitudes (Davis & Greenstein, 2009) were presented with a 5-point Likert scale from ‘1 = strongly disagree to 5 = strongly agree’ (Cronbach’s $\alpha = .83$; $M = 1.77$, $SD = .55$). An example item is: “Women are much happier if they stay at home and take care of their children.” Six distractor items on individualism-collectivism (Triandis, Bontempo, Villareal, Asai, & Lucca, 1988) were interspersed among the self-esteem and gender role attitude statements. Participants’ attitudes toward gender roles were also used to create equivalent groups.

**Desire for children.** Participants reported the number of children they desired in the baseline session. The mean number of children desired was 1.80 ($SD = 1.36$). The variable was used in the creation of equivalent groups.
Education. Participants indicated their highest educational attainment, with 7.5% having a high school or associate’s degree, 58.4% had a bachelor’s degree, 26.6% a master’s degree, and 7.5% a Ph.D. Education level was used in the process of creating equivalent groups.

Habitual magazine use. For the past 7 days, on average, participants reported reading women’s magazines (fashion/celebrities/lifestyle/bridal/cooking) 2.02 times (SD = 1.31) and current affairs magazines (news/business) an average of 1.77 times (SD = 1.51). The variable was used to create equivalent groups.

Work hours. In the sign-up session, participants were asked to indicate the average number of hours they work each week. The work hours averaged at M = 37.9 (SD = 14.3). Two groups were subsequently created: those who work up to 39 hours per week (n = 63), and those who work 40 hours or more per week (n = 150); work hour entries were missing for ten individuals that were categorized as working up to 39 hours if they had indicated to be ‘currently not working’ or ‘working part-time,” or as working 40 hours or more if they had indicated to be ‘working full time’ or ‘working both full-time and part-time.’ From this measure, 60.3% of participants reported they worked full-time, 9.8% full-time and part-time, 18.7% part-time only, 11.2% currently not working.

Relationship status. In the sign-up session, participants indicated their relationship status as either single, dating, in a steady relationship, married, divorced, or widowed. Twenty seven percent reported they were single, 6.1% were dating, 42.1% were in a steady relationship, and 23.4% were married), Two groups were created based on these responses: married (n = 50), and not married (n = 164).

BMI. In the sign-up session, participants were asked to indicate their height and weight embedded in various distractor questions. Responses were then used to calculate BMI (M = 25.5,
SD = 5.90). For the final sample with complete data entries, three groups of approximately the same size were created: 22 or less \((n = 74)\), 22.1 through 25.9 \((n = 69)\), and 26 or greater \((n = 69)\). This three-level variable for BMI was initially used as an independent variable in hypotheses testing, but was dropped from the analysis (for details see 'Results' section) to avoid small cell sizes. None of the other results changed in terms of their significance as a result of dropping BMI as an independent variable. It was subsequently used as a continuous, control variable throughout the analyses.

**Measure of Possible Future Self Link in Daily Sessions**

After each daily media exposure session, a statement (on a 7-point Likert scale, with ‘1 = not at all’ and ‘7 = extremely’ as anchors) captured to what extent the women linked the portrayals on the magazine pages to their own PFS: “I would like to be like the persons shown on the magazine pages.” The five scores for this measure from the five daily sessions were highly consistent (Cronbach’s \(\alpha = .92\)) and thus condensed into a new variable labeled ‘PFS link’ \((M = 3.30, SD = 1.47)\). This question was embedded in distractor items such as “I enjoyed viewing/reading these magazine pages” to strengthen the cover story of a magazine enjoyment study.

**Measures Based on Open-Ended Question in Post-Session**

All 214 participants responded to an open-ended question in the post-test session. Participants were asked to respond to the following prompt: “Over the past 7 days, how much have you thought about your current life situation and your future? What were your thoughts? How much have you thought about your goals in life and your relationships? What were your thoughts? Along these lines, please type any thoughts or feelings that come to your mind in the box below. You may type as much as you wish.” They typed 106 words on average \((SD = 83, SD = 83, SD = 83, SD = 83, SD = 83)\).
The responses were coded by two trained coders who were unaware of the experimental condition in which the responses originated. To establish coding reliability, 10% of the sample was coded by two coders who worked independently (based on recommendations by Krippendorff, 2011). Coding for all concerns (see below) proved to be reliable (Krippendorff’s α ≥ .78). For coding of affective valence of thoughts about future (see below), Krippendorff’s alphas were at .88 or higher. The remaining 90% of the material was coded by one of the trained coders.

Concerns. Concerns related to various social roles, including romantic, family, career, physical appearance, and school, were coded to determine if participants mentioned these roles. The percentages reported below are based on the entire sample (N = 214). Social roles labeled “romantic” included comments on current and potential future significant others (41.6%). Mentions of “family” roles included comments on future children and current family situations (20.1%). Mentions of “career” roles pertained to job responsibilities, career paths, opportunities for work, and potential job (dis)satisfaction (55.1%). Physical “appearance” included any mention of personal appearance, both current and future (8.9%). Mentions of “school” included comments on deciding to return to school, pursuing graduate school, and other school situations (20.1%). Additionally, the total number of role concerns mentioned (0-5) was calculated (M = 1.27, SD = 1.28).

Affective valence of thoughts about future. Mentions of positive affect (happy, excited, confident, optimistic, hopeful, blessed, thankful, content) and negative affect (angry, sad, anxious, scared, insecure, uncertain, frustrated, stressed, pessimistic) were coded. Descriptive
statistics were $M = 1.08$ ($SD = 1.10$, range 0 to 8) for positive affect and $M = .58$ ($SD = .84$, range 0 to 7) for negative affect. For a more parsimonious analysis, a difference score between the number of mentions of positive and negative affect was computed ($M = 0.62$, $SD = 1.92$, range -5 to 7), with higher scores indicating more positive affective valence.

Stimuli and Manipulation Check

In each of the five daily media exposure session, participants viewed eight magazine articles, eight magazine advertisements, and two distractor pages showing no individuals, in line with the experimental group manipulation. Thus, each condition was comprised of 90 pages from contemporary magazines. Articles and ads alternated with the two distractor pages interspersed. The same distractor pages were used in all three conditions. To avoid sequence effects, the presentation order of the pages was reversed for half of the participants in each condition.

Pairwise mean comparisons ensured that there were no significant differences between the two different orders in the total number of concerns mentioned or the affective difference scores (see Table 1 for details). Stimuli pages were adopted from an earlier study (Authors, in press) and featured women in either mother/homemaker portrayals, beauty ideal portrayals, or professional portrayals. The mother/homemaker condition presented magazine pages from *Better Homes and Gardens, Family Circle, Health, Ladies’ Home Journal, Parenting, Parents,* and *Working Mother.* The beauty ideal condition presented pages from *Shape, Vogue, Allure,* and *Self.* The professional condition comprised pages from *Fast Company,* *Newsweek,* and *Business Week.* All manipulated stimuli presented women in a positive manner; no women were presented with negative expressions. A stimuli test (see details described by Authors, under review) demonstrated that the magazine pages represented the portrayals as desired.

Results
Concerns

H1 predicted that prolonged exposure to magazine portrayals of women in the mother/homemaker role would increase concerns about future family and children compared to exposure to portrayals of women in the (H1a) beauty ideal and (H1b) professional roles. Chi square tests (see Table 2) yielded that the 29.0% of women who mentioned concerns about family in the mother/homemaker portrayals group \( (n = 70) \) differed significantly from the 11.7% of women who mentioned concerns about family in the beauty portrayals group \( (n = 77) \), \( \chi^2(1, N = 147) = 6.84, p = .009 \). This finding supports H1a. However, the 29.0% of women who mentioned concerns about family in the mother/homemaker portrayals group \( (n = 70) \) did not differ from the 20.9% of women who voiced concerns about family in the professionals portrayals group \( (n = 67) \), (n.s.). Thus H1b was not supported. A post hoc chi square analysis was conducted to determine if those in the mother/homemaker portrayals group mentioned more concerns about family when compared to all other participants taken together. Results indicate that women in the mother/homemaker portrayals group \( (n = 70) \) mentioned concerns about family three days after the last exposure significantly more often than all other participants \( (n = 144) \), 29.0% compared to 16.0% respectively, \( \chi^2(1, N = 214) = 4.90, p = .027 \). Thus H1 was partially supported.

H2 predicted that prolonged exposure to magazine portrayals of women in the beauty ideal role would increase concerns about future appearance compared to exposure to portrayals of women in the (H2a) mother/homemaker and (H2b) professional roles. The 15.6% of women in the beauty ideal portrayals group \( (n = 77) \) indicated concerns about appearance significantly more frequently when compared to the 4.3% of women in the mother/homemaker portrayals group \( (n = 70) \), \( \chi^2(1, N = 147) = 3.35, p = .026 \), which supports H2a. Women in the beauty
ideals group \((n = 77)\) also tended to mention concerns about appearance more frequently than
women in the professional portrayals group \((n = 67)\), 15.6% compared to 6.0%, but this
comparison fell short of significance, \(\chi^2(1, N = 144) = 4.98, p = .067\). Thus, H2b was not
supported. Further, a post hoc chi square analysis was conducted to determine if those in the
beauty ideal portrayals group mentioned more concerns about family when compared to all other
participants taken together. Results indicate that women in the beauty ideal portrayals group \((n =
77)\) mentioned concerns about future appearance three days after the last exposure significantly
more often than all other participants \((n = 137)\), 15.6% compared to 5.1% respectively, \(\chi^2(1, N =
214) = 6.59, p = .010\). Thus, H2 was partially supported.

Per H3, it was expected that prolonged exposure to magazine portrayals of women in the
professional role would increase concerns about future career compared to exposure to portrayals
of women in the (H3a) beauty ideal and (H3b) mother/homemaker roles. Women who viewed
the professional portrayals did not report concerns about career three days after the last exposure
more often than the remaining sample. Hence, H3 was not supported. Interestingly, however,
participants in the mother/homemaker portrayals group mentioned concerns about career
significantly more often than the remaining sample. Specifically, among participants in the
mother/homemaker portrayals group, career concerns were mentioned by 71.0% \((n = 70)\)
compared to 49.3% \((n = 67)\) in the professional portrayals group, \(\chi^2(1, N = 137) = 6.72, p = .010\).
Career concerns were also more prevalent among women in the mother/homemaker portrayals
group when comparing them with the participants in the beauty ideal portrayals group, 71.0% \((n =
70)\) versus 45.5% \((n = 77)\), \(\chi^2(1, N = 147) = 9.73, p = .002\) (see Table 2).

Furthermore, H4 suggested that those in the mother/homemaker portrayals group would
mention more concerns about their future than women in the beauty ideal portrayals and
professional portrayals groups. Thus, in contrast to H1-3, this hypothesis pertained to the number of concerns and not to the specific content of the concern. Hence, an analysis of variance with number of concerns related to one’s personal future as dependent variable was conducted. Experimental group as between-group factor yielded a significant effect of media exposure, $F(2, 214) = 3.70, p = .026$, partial $\eta^2 = .034$. Specifically, women in the mother/homemaker portrayals group ($M = 1.79, SD = 1.25$) mentioned more concerns overall about their personal future than women in the professional portrayals group ($M = 1.24, SD = 1.23$) did ($p = .034$, subsequent multiple tests with Sidak correction). The beauty ideal portrayals group ($M = 1.35, SD = 1.27$) fell in-between. Thus, H4 was partially supported.

**Affective Valence of Possible Future Selves**

The next set of hypotheses suggested that prolonged exposure to magazine portrayals of women in the mother/homemaker role induces a more positive affective valence related to PFS than exposure to the gender-incongruent portrayals of women in the professional role (H5a), and that prolonged exposure to magazine portrayals of women in the beauty ideal role induces a more positive affective valence related to PFS than exposure to the gender-incongruent portrayals of women in the professional role (H6a). Further, these effects are thought to be stronger among women that adhere more to gender norms (see details below) by being married (H5b and H6b), having a lower BMI (H5c and H6c), and/or working less hours per week (H5d and H6d) such that women in the gender-congruent experimental conditions fulfilling these traditional roles will exhibit more positive affect than women who fulfill these traditional roles but who viewed professional portrayals.

These hypotheses were tested with an analysis of variance that utilized the difference score between the number of mentions of positive and negative affect with regard to PFS as the
dependent measure. Media exposure condition, marital status (non-married vs. married), and work hours (up to 39 hours vs. 40 hours or more) served as between-group factors with BMI serving as a covariate, resulting in a 3 x 2 x 2 design. A preliminary analysis of variance had also included BMI (low vs. medium vs. high; see details in the measures section above); however, as this factor had no significantly reliable effect (see test below), and no support for H5c and H6c emerged, it was dropped from the analysis reported below to avoid small cell sizes. None of the other results changed in terms of significance as a result of dropping BMI as an independent variable.

The analysis of variance yielded some main effects that were not of interest for hypotheses testing: Married women generally experienced greater prevalence of positive affect related to their possible future self than non-married women ($M = .78, SD = .2.23, \text{vs. } M = .56, SD = 1.79; F(1, 198) = 4.59, p = .033, \eta^2_{\text{partial}} = .023$), and women working up to 39 work hours also experienced greater positive prevalence compared to women working 40 hours or more ($M = .85, SD = 2.09, \text{vs. } M = .52, SD = 1.82; F(1, 198) = 5.75, p = .017, \eta^2_{\text{partial}} = .028$).

For hypotheses testing, the results show that the media exposure condition influenced the prevalence of affective valence on PFS thoughts, $F(2, 196) = 6.49, p = .002, \eta^2_{\text{partial}} = .062$, because exposure to mother/homemaker portrayals produced a significantly stronger prevalence of positive affect ($M = .69, SD = 2.13$) compared to exposure to portrayals of professional women ($M = .42, SD = 1.84$) that was significant in a subsequent means comparison ($p < .001$) (supporting H5a). The difference between the experimental groups with beauty portrayals and professional portrayals fell short of significance with $p = .12$ (no support for H6a). However, this impact of media exposure condition was further moderated by interaction effects. Specifically, relationship status and media exposure conditions yielded an interaction, $F(2, 198) = 7.87, p =$
.001, η² partial = .074, which is illustrated in Figure 1. Married women in the mother/homemaker portrayals group felt significantly more positively about their future than those in the professional portrayals group (p < .001), which supports H5b, and those in the beauty portrayals group (p = .012). However, married women in the beauty portrayals group did not feel significantly more positively about their future than those in professional portrayals group (p = .218), thus H6b was not supported. Married women who viewed the mother/homemaker portrayals had a significantly more positive outlook than non-married women in the same media exposure condition (p < .001).

As previously stated, BMI did not yield any substantial effects, $F(1, 198) = 1.09, p = .297, \eta^2_{\text{partial}} = .006$. Thus no support for H5c and H6c emerged.

Moreover, an interaction between media exposure condition and work hours emerged, $F(2, 198) = 3.6, p = .029, \eta^2_{\text{partial}} = .035$, as illustrated in Figure 2. Findings indicate that women who worked up to 39 hours and viewed mother/homemaker portrayals indicated a significantly more positive outlook than women who worked up to 39 hours and viewed the career portrayals ($p = .004$). This finding supports H5d. However, H6d was not supported, as the difference in affective valence in PFS between the beauty portrayals and the career portrayals group among women who worked up to 39 hours did not approach significance (n.s.). Additionally, women who worked up to 39 hours and viewed mother/homemaker portrayals indicated a significantly more positive outlook than women who worked 40 hours or more and saw the same portrayals ($p = .004$).

**Possible Future Self Link as Mediator**

H5e and H6e predicted that impacts on affect per H5a and H6a are mediated by the extent to which women link the magazine portrayals to their own PFS. Mediation analyses (Preacher &
Hayes, 2008) were conducted. The first set of analyses tested H5e, with media exposure to mother/homemaker portrayals versus exposure to professional portrayals as independent variable (dummy-coded), the variable for PFS link as mediator, and difference score between the number of mentions of positive and negative affect as dependent variable. The analysis controlled for marital status, work hours, BMI, and magazine enjoyment. Figure 3 reports the results.

Exposure to the professional portrayals induced greater levels of the PFS link than exposure to the mother/homemaker portrayals (coefficient = .67). The higher the extent of PFS link, the greater the prevalence of negative affect related to thoughts about one’s own future occurred (coefficient = -.23). Although neither the total nor the direct effect of exposure on negative affect was significant (n.s.), an indirect effect of exposure on affect related to thoughts about future emerged via PFS link, with a point estimate at -.16, which was significant because the confidence interval did not include zero. This finding supports H5e.

Further mediation analyses examined H6e, with media exposure to beauty portrayals versus exposure to professional portrayals as independent variable (dummy-coded), the variable for PFS link as mediator, and difference score between the number of mentions of positive and negative affect as the dependent variable, using the same controls as before. This analysis yielded an indirect effect of media exposure via the PFS link on the difference between positive and negative affect related to one’s future (see Figure 3). Exposure to professional portrayals fostered greater levels of PFS link (coefficient = .55), which in turn led to greater prevalence of negative affect related to thoughts about one’s future (coefficient = -.28). Again, neither the total nor the direct effect of exposure on negative affect was significant, but the indirect effect via PFS link emerged as significant, with a point estimate of -.15. This finding lends support to H6e.

When taking the two portrayals with traditional female roles of mother/homemaker and...
beauty ideal together (see Figure 3), a significant indirect effect of the PFS link emerged, with a point estimate of -.15 for the difference score between mentions of positive and negative affect related to thoughts about one’s future.

**Discussion**

The present study demonstrated that prolonged exposure to portrayals of women in either gender-congruent (mother/homemaker or beauty ideals) roles or gender-incongruent (professional) roles impacted adult, childless women's visions of their possible future selves. The demonstrated effects are important given that women in the examined age range (21-35 years) are making crucial life decisions about whether and how they will balance multiple roles in the future. The present research design offers an important addition to the existing work about media effects on social role conceptions, which has primarily utilized short-term experiments and cross-sectional survey designs that do not allow inferences on long-term, causal effects.

In answering an open-ended question three days after the last exposure session, the women revealed that the gender-typed roles remained salient: Prolonged exposure to women in mother/homemaker roles fostered more concerns about mothering and having a family in the future (H1 partially supported). Yet, it is important to note that the specific comparison with women who viewed professional portrayals did not produce a significant difference (H1b not supported), whereas the specific comparison with women who viewed beauty ideal portrayals yielded a significant difference (H1a supported). Similarly, prolonged exposure to beauty ideal portrayals fostered more concerns about personal appearance in the future, in comparison to the two other experimental groups (H2 partially supported), falling in line with previous body image research (see Grabe, et al., 2008). It should be noted, however, that the specific comparison with women who viewed professional portrayals did not yield a significant difference (H2b not
supported), whereas the specific comparison with women who viewed mother/homemaker portrayals showed a significant difference (H2a supported).

Overall, findings in line with H1 and H2 demonstrate that social and gender role theory is a fruitful framework to study media impacts. It is evident from this study that gendered media portrayals reinforced norms and expectations of the self regarding women’s PFS, empirically testing the concern voiced in previous literature (e.g., Eagly et al., 2009; Signorielli, 1993).

On the other hand, exposure to gender-incongruent portrayals of women in professional roles did not lead to more mentions of concerns about future job/career outlooks (H3 not supported). However, interestingly, those in the mother/homemaker portrayal group mentioned thoughts about their career/occupation in the future more than those in either the beauty ideal group or professional group. Further, prolonged exposure to the yet-to-be-obtained role of mother/homemaker fostered more concerns about possible future selves. In other words, women who had viewed the mother/homemaker portrayals mentioned more concerns overall about their personal future than women who saw professional portrayals (H4 partially supported). These results show that media portrayals of social roles do not simply render these roles more salient among recipients—how individuals connect the portrayals to their own possible future selves matters for how they respond to them. This finding was different for college age sample in which the young women were not yet graduated and working at the professional level (Authors, 2014).

Given that the women in the study were mostly working, but not yet mothers, it is possible that in viewing the portrayals of women in mother/homemaker portrayals instigated thoughts about balancing multiple roles, as women were more likely than men to report seeing themselves family roles in the future (Brown & Diekman, 2010). Furthermore, it's possible that their current agentic, gender-incongruent role in the workplace became more salient as they evaluate life at
this stage and envision what their future could look like (Cross & Markus, 1991).

Exposure to mother/homemaker portrayals yielded greater prevalence of positive affect regarding PFS compared to exposure to portrayals of professional women (in line with H5a), while the difference between beauty portrayals and professional portrayals fell short of significance (no support for H6a). Supporting previous gender role research, women in the study felt good about themselves when they conformed to these gendered norms (Wood et al., 1997).

In other words, women who have already fulfilled certain gender-typed roles (e.g., by being married) feel more positively about their future than those who have yet to (e.g., by being single). The media exposure impacts were moderated by life circumstances in line with predictions derived from the gender conformity framework (Good & Sanchez, 2010; Wood et al., 1997): Specifically, married women who viewed the mother/homemaker portrayals had a more positive outlook on their futures than married women who saw professional portrayals (H5b supported). However, married women in the beauty portrayals condition did not have a more positive outlook on their futures than married women who saw professional portrayals (no support for H6b). Further, adherence to the thin ideal (interpreted here as having a lower BMI) did not moderate media impacts (no support for H5c and H6c). H5d was supported, as women who worked up to 39 hours derived a more positive future outlook from viewing mother/homemaker portrayals than from viewing professional portrayals. No significant difference in valence of outlook emerged for work status subgroups when comparing the beauty ideals group and the professional portrayals group (H6d not supported). Taken together, gender conformity has some important impacts on affective responses to gender role portrayals in the media. Mediation analyses examined impact processes and revealed that the extent to which women linked the magazine portrayals to their PFS was the pathway for these effects (H5e and
GENDER-CONGRUENT MEDIA & POSSIBLE FUTURE SELVES

Drawing on the notion that gendered roles strongly influence occupation and life path choices (Eccles, 1994; Su, Round, & Armstrong, 2009), the present work demonstrates the impact that media portrayals of women in gendered roles may have on a woman’s vision of her future. Most prior work on gender-typed portrayals examined only short-term effects (Scharrer, 2013). In contrast, this experiment shows that exposure to images of women in magazine pages has significant impacts on how adult women think and feel about their PFS three days after media exposure. With all of the societal pressures to conform to traditional gender roles (Eagly & Wood, 1999), when viewing portrayals of gender-congruent roles in the media, women feel good about their own adherence to them (Wood et al., 1997) and glean happiness from the prospect of continuing to fulfill them in the future, thus reinforcing motherhood and beauty ideals symbolized millennia ago with the Greek goddess Aphrodite. Adult women between the ages of 21 and 35 are in the process of making decisions regarding whether or not to pursue motherhood and/or a career. Hence, they are susceptible to the potentially motivating, positive effects of viewing women portraying traditional gender norms in magazine pages, especially if they are already married or work less hours.

Further, viewing magazine portrayals of women in the mother/homemaker role fostered concerns about future career roles. It is possible that the hope of having a family leads to perceptions of work-family conflict—the experience of imbalance between work and home arising from the stress-inducing pushes and pulls a career can have on family life and vice versa, which has serious implications for career decision-making and family planning (Westring & Ryan, 2011). For example, women may not pursue a career if they believe it will interfere with having children. Certainly, decisions about pursuing a career or motherhood are multi-faceted—
determining how women come to conclusions about what life path to take is beyond the scope of this investigation. Further research should attempt to more explicitly capture media effects on decisions about whether or not to pursue motherhood and/or a professional career.

The present research has limitations – this study involved only White adult women. Different results could emerge for other races/ethnicities (e.g., Black, Latino, or Asian) as there are historically significantly fewer representations of non-White women in mainstream media content (see Scharrer, 2013). Further, a majority of the women who participated in the study had obtained at least a bachelor's degree. It is likely that their achieved level of education indicates their value of having a career and would make the notion of pursuing a career more salient overall. Moreover, White women and women with complete college education have less children, remain voluntarily childless more frequently, and also expect to have less children (Martinez, Daniels, & Chandra, 2012). Additionally, the portion of married women in the sample was relatively small, which hindered further examination of moderating influences. Future research with larger and more diverse samples is needed to examine effects on different socio-demographic groups. It will also be helpful to explore additional measures in order to capture how media exposure affects life path visions, as the present work relied on a single open-ended question. So far, this measurement approach has yielded more valuable insights than standardized questions (e.g., on career interests; see Gong, 2011). Additionally, it is desirable to examine media effects for even longer periods than in the present prolonged exposure experiment with just five exposure sessions because, in real life, such effects accumulate across weeks, months, and years. Finally, as a result of experimental condition assignment, participants were not able to select the magazine content to which they were exposed. Future research should aim to determine which types of magazines women are more inherently drawn to, if any.
Altogether, these findings provide ample evidence for media exposure impact that is evident even three days after exposure. Contrary to much media exposure research which looks only at immediate viewer reactions, this work provides support for the notion that media effects are, in fact, sustained over multiple days. Thus, more research using similar methodologies is warranted. An important extension of the present work could involve letting individuals choose what to view, as with the present design participants could only look at media portrayals in line with their randomly assigned condition. Future work should investigate how selective exposure to media messages might accelerate media impacts on how individuals envision their future.
References


GENDER-Congruent Media & Possible Future Selves


11 Gong, Y. (2011). *The impact of the magazine representations of women on young female*
audiences’ career interests. Unpublished master’s thesis, The Ohio State University, Columbus/Ohio, USA.


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Figure 1. Affective Valence of Possible Future Selves as Function of Media Exposure and Marital Status

Note. Numbers indicated estimated marginal means and standard errors in brackets. Means that do not share a subscript differ at $p < .05$. 
Figure 2. Affective Valence of Possible Future Selves as Function of Media Exposure and Work Hours

Note. Numbers indicated estimated marginal means and standard errors in brackets. Means that do not share a subscript differ at $p < .05$. 
GENDER-CONGRUENT MEDIA & POSSIBLE FUTURE SELVES

Homemaker vs. Professional Portrayal → Possible Future Self → Prevalence of Positive Affect Related to Thoughts About Future
-0.16, 95% CI [-0.513, -0.005]

Beauty vs. Professional Portrayal → Possible Future Self → Prevalence of Positive Affect Related to Thoughts About Future
-0.23, 95% CI [-0.513, -0.005]

Homemaker & Beauty vs. Professional Portrayal → Possible Future Self → Prevalence of Positive Affect Related to Thoughts About Future
-0.19, 95% CI [-0.393, -0.033]

Figure 3. Mediation Paths Regarding Media Exposure Impact (IV) on Prevalence of Positive Affect Related to Thoughts About Future (DV) Through Possible Future Self (M)

Note. Unstandardized coefficients reported. Two asterisks indicate $p < .001$. One asterisk indicates $p < .05$. Control variables: marital status, work hours, BMI, magazine enjoyment.
Table 1. Number of Concerns Mentioned and Affective Difference Scores by Reverse-Ordered Experimental Condition

<table>
<thead>
<tr>
<th>Experimental Group</th>
<th>No. of Concerns Mentioned</th>
<th>Aff. Difference Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beauty Ideals Order 1</td>
<td>1.595</td>
<td>0.833</td>
</tr>
<tr>
<td>Beauty Ideals Order 2</td>
<td>1.487</td>
<td>0.636</td>
</tr>
<tr>
<td>Professional Order 1</td>
<td>1.122</td>
<td>0.486</td>
</tr>
<tr>
<td>Professional Order 2</td>
<td>0.925</td>
<td>0.344</td>
</tr>
<tr>
<td>Mother/Homemaker Order 1</td>
<td>1.302</td>
<td>0.927</td>
</tr>
<tr>
<td>Mother/Homemaker Order 2</td>
<td>1.200</td>
<td>0.444</td>
</tr>
</tbody>
</table>
Table 2. Concerns Expressed by Respondents by Media Portrayal Group

<table>
<thead>
<tr>
<th>Concerns</th>
<th>Mother/ Homemaker Portrayal Group (%)</th>
<th>Beauty Ideal Portrayal Group (%)</th>
<th>Professional Portrayal Group (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future Children/Family Concerns</td>
<td>29.0&lt;sup&gt;b&lt;/sup&gt;</td>
<td>11.7&lt;sup&gt;a&lt;/sup&gt;</td>
<td>20.9&lt;sup&gt;ab&lt;/sup&gt;</td>
</tr>
<tr>
<td>Future Appearance Concerns</td>
<td>4.3&lt;sup&gt;a&lt;/sup&gt;</td>
<td>15.6&lt;sup&gt;b&lt;/sup&gt;</td>
<td>6.0&lt;sup&gt;ab&lt;/sup&gt;</td>
</tr>
<tr>
<td>Future Career Concerns</td>
<td>70.1&lt;sup&gt;b&lt;/sup&gt;</td>
<td>45.5&lt;sup&gt;a&lt;/sup&gt;</td>
<td>49.3&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Note. Percentages in the same row that do not share a subscript differ significantly per chi square test, $p < .05$; the percentages listed in the table represent the percentage of participants within each experimental group (N) that mentioned the type of concern in their open-ended responses (e.g., the first cell of the table reflects the 29% of the 70 participants in the mother/homemaker portrayal group who mentioned future children/family concerns).
The dependent variable of count of concerns and its residuals were normally distributed based on the recommendation (e.g., Garson, 2012) that skewness and kurtosis should both be ≤2 for a normal distribution. Skewness and kurtosis were at .53 and -.59, respectively, for concerns, and .55 and -.55 for residuals. Homogeneity of variance across groups was established with a Levene’s test (p = .879). Deviation from linearity was not significant (p = .351). Given that H4 pertained to count data, which are often not normally distributed and instead show a Poisson distribution (e.g., Cameron & Trivedi, 1998), a Poisson regression was also applied. Number of concerns related to one’s personal future served as dependent variable and experimental group as predictor. As in the analysis of variance reported above, experimental group yielded a significant effect of media exposure, Wald Chi-Square = 8.01, p = .017. The comparison between women in the mother/homemaker portrayals group and women in the professional portrayals group again yielded a significant difference, Wald Chi-Square = 4.61, p = .032, but again the beauty ideal portrayals group did not differ from the other experimental groups (n.s.).

Average magazine enjoyment was controlled for as a covariate but had no significant effect (p = .083). Due to some small cell sizes, a three-way interaction between media exposure condition, marital status, and work hours was not interpreted. As a result, the cell size range across the 12 cells of the experimental design was between 15 and 58.
Revision Memorandum for HCR-14-030
"The Allure of Aphrodite: How Gender-Congruent Media Portrayals Impact Adult Women’s Possible Future Selves"

*In addition to the revised manuscript, a manuscript version that shows the changes is provided as ‘supplementary file.’

Revisions in Response to Reviewer

I appreciate the careful attention that the authors have given to the feedback. This is a very interesting and clever study, and I look forward to seeing it published. However, but some issues related to clarity and consistency must be addressed before the paper will be ready for publication.

1) There is still lack of clarity in several places regarding use of the variable BMI. When this variable was an independent variable (IV), three groups (low, medium, high) were used. This is fine for use in an ANOVA with BMI as a categorical IV (although this does not capture order). But the paper states: “This three-step variable was created to control for BMI in analyses, with 22.0 and 26.0 as 17 cut-offs.” It is not appropriate to artificially remove variance when a continuous variable will work well. When BMI is included as a control variable, the continuous scale should be used (H5e and H6e – and as noted below, I believe also H5c and H6c). This needs to be revised.

Revision: The analyses have now been re-run with BMI as a continuous variable when it was used as a control, and results and discussion have been updated accordingly. The only thing that changed in the results is that there is no longer support for H6b, but this was a minor hypothesis in the overall study design.

2) A specific example where there is lack of clarity regarding BMI in the results: On p. 21, the authors describe several hypotheses, including H5c and H6c (which predict an effect of BMI) and then say that “these hypotheses were tested with an analysis of variance” that did not include BMI as a factor “[‘Media exposure condition, marital status (non-married vs. married), and 4 work hours (up to 39 hours vs. 40 hours or more) served as between-group factors, resulting in a 3 x 2 x 2 design.”] This does not make sense given the hypotheses presumably being tested, and thus requires rewording. Later in the paragraph the authors do refer to a “preliminary analysis” that involved BMI – but nonetheless, an ANOVA without BMI as a factor cannot test H5c or H6c. Further, since these ARE hypotheses that the researchers proposed to test (and for which the report results), it seems inappropriate to just remove that IV from the analysis. It *looks* to the reader as though this might have been done to hide inconsistent findings when BMI was included. I’m sure this is not the case, but at minimum, if BMI is dropped as a factor, then the authors should note that none of the other findings changed when BMI was dropped. Or the BMI scale (not the three categories) could be added as a covariate to the subsequent 3 x 2 x 2 ANOVA, to rule that possibility out. This will not affect cell sizes, and if BMI really makes no difference, at least the possibility that it does will be eliminated.

Revision: See revision above; analyses have been re-run with BMI as a continuous, control variable. Additionally, the following sentence was added for clarity:

"None of the other results changed in terms of their significance as a result of dropping BMI as an independent variable."
3) I suggest that the authors carefully review the manuscript for all the places where they used BMI, and make certain all statements are accurate and clearly indicate what was being done/what was found. Also, make sure that when BMI was used as a covariate, it was the scale, not the three-category variable.

**Revision:** Discussion of BMI throughout the manuscript have been carefully revisited and edited for clarity.

4) The paper now states that “cell sizes for interpreted interactions ranged between 15 and 58.” This is somewhat misleading (because involves collapsing across multiple cells. I suggest just reporting the range across the 12 cells of the design. With 12 cells and N = 214, the mean cell size is 17.8 – but I would like to see that range of ns for the 12 cells. The reader can then figure out that for various main effects, etc., cells would be collapsed.

**Revision:** Footnote 3 contains the cell size range, and has been edited for clarity to read, "The cell size range across the 12 cells of the experimental design was between 15 and 58." (*We are happy to report any other additional information regarding the cell sizes used per your request. However, we would need further clarification of what you are specifically looking for.)

5) On p. 21, the paper still uses the phrase “particularly strong” (“these effects are thought to be particularly strong among...”). As noted previously, this is very vague and most importantly cannot be tested. This phrase should be a comparative predicting that an effect will be stronger among a certain group or groups than other(s).

**Revision:** The wording has been edited to highlight the predicted comparatives such that the phrase "particularly strong" has been changed to "stronger among…"

6) Regarding the lack of clarity in reporting of comparisons in the table and Figures: The problem still has not been fixed. It is not interpretable to assign letters left to right or using inconsistent criteria. Conventionally, subscript letters are assigned from low to high numbers; assigning high to low is unconventional but could be OK if used consistently. But the same method must be used throughout to facilitate interpretation! So, for example, in what is now Table 2, percentages in the first row are: 29.0a 11.7b 20.9ab. On the next line, we see: 4.3a 15.6b 6.0ab. This does not make sense – the letters a, ab, b are assigned high to low in the first row and low to high in the second row. Assigning low to high, the subscripts in the three rows should be:

<table>
<thead>
<tr>
<th>29.0b</th>
<th>11.7a</th>
<th>20.9ab</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.3a</td>
<td>15.6b</td>
<td>6.0ab (no change needed, assigned low to high)</td>
</tr>
<tr>
<td>70.1b</td>
<td>45.5a</td>
<td>49.3a</td>
</tr>
</tbody>
</table>

**Revision:** All tables and figures have carefully been reviewed and edited for consistency. Subscript letters have been assigned from low to high consistently across all tables and figures.

7) In addition, when referring to subscripts in the note, be sure to clarify exactly what the letters indicate. For example, I believe in what is now Table 2, the note should read: “Percentages in the same row that do not share a subscript differ significantly per chi square test.”

**Revision:** The note has been edited per the suggestion.
8) What is meant by N%? Please clarify?

**Revision:** The following sentence has been added to the note for clarification:

"The percentages listed in the table represent the percentage of participants within each experimental group (N) that mentioned the type of concern in their open-ended responses (e.g., the first cell of the table reflects the 29% of the 70 participants in the mother/homemaker portrayal group who mentioned future children/family concerns)."

9) In Figures 1 and 2, the asterisks also need to be deleted and the subscript letters need to be redone (they currently do not make sense, as explained above).

**Revision:** Figures 1 and 2 have been edited such that asterisks have been removed, subscripts have only been used, and if they share a subscript they are not significantly different from one another (as is now explained in the note).

10) Minor point: On p. 29, the text now says that participants were “forced” to view the portrayals. I think a different word would be better (presumably participation was voluntary).

**Revision:** The wording has been adjusted to highlight assignment without suggesting participation was not voluntary.