How Exposure to Literary Genres Relates to Attitudes Toward Gender Roles and Sexual Behavior

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Although past research has explored the association between media of many forms (e.g., TV, music, advertising) and sexual socialization, books are 1 form of media that has largely been ignored with respect to this topic. The current study examined the relationship between lifetime exposure to different genres of text and sexual attitudes, including gender role stereotyping and sexual conservatism. We examined both broad categories of books (i.e., fiction vs. nonfiction) along with 4 separate fiction genres (domestic, romance, science-fiction/fantasy, and suspense/thriller). Participants completed a survey that included measures of lifetime exposure to text, gender role egalitarianism, gender role stereotyping, and sexual conservatism. Greater exposure to fiction, but not nonfiction, was related to increased gender role egalitarianism and reduced gender role stereotyping. No strong associations between the individual genres and the measures of sexual attitudes were observed. These results contribute to the growing body of evidence that reading literary fiction is associated with a wide variety of positive social outcomes.

Keywords: reading, books, gender role attitudes, sex, egalitarianism

The possibility that exposure to the mass media might shape our attitudes and beliefs is a question of pervasive interest to researchers. More specifically, past research has examined how avid consumption of TV, movies, magazines, and videogames might relate to sexual socialization. Sexual socialization can include our attitudes toward what constitutes appropriate sexual behavior for men and women. One form of media that has been previously neglected in this research area is that of books. The current study investigates how lifetime exposure to both narrative fiction and expository nonfiction texts might relate to attitudes toward gender roles and sexual behavior.

Media and Sexual Socialization

People form their attitudes about sex and gender roles as a result of a myriad of different influences including, but not limited to, one's parents, peers, and various forms of mass media. With respect to the latter, there has been quite a bit of work examining whether media content influences sexual attitudes, in the form of exposure to TV (e.g., Taylor, 2005; Ward & Friedman, 2006), music (e.g., Martino et al., 2006), music videos (e.g., Kistler &

Lee, 2009; Zhang, Miller, & Harrison, 2008), movies (e.g., Pardun, L'Engle, & Brown, 2005), websites (e.g., ter Bogt, Engels, Bogers, & Kloosterman, 2010; Peter & Valkenburg, 2008), magazines and magazine ads (e.g., Ward, 2003; Kim & Ward, 2012), and video games (Dill & Thill, 2007). By and large, these studies find that greater exposure to various media predicts more traditional stereotypes about gender roles (Ward, 2003; Ward & Harrison, 2005) and more liberal attitudes toward sex (Braun-Courville & Rojas, 2009; Brown & L'Engle, 2009; Kistler & Lee, 2009; Kim & Ward, 2012; Ward & Friedman, 2006). There have, however, been some null findings and some studies find effects only for certain groups of individuals (Taylor, 2005). One critique of work on this topic is that some forms of media are underresearched and there is insufficient evidence to guide policy (Escobar-Chaves et al., 2005).

Books and Sexual Socialization

Consistent with this critique, there has been relatively little work done on how reading may influence sexual socialization (cf. Abramson & Mechanic, 1983); filling this gap in the literature is the primary aim of the current study. Reading—in particular, the reading of fiction—would seem to be an important form of media to study with respect to sexual socialization. For one, literary fiction has tremendous power to engage and evoke real emotions in readers (Oatley, 1995; Mar, Oatley, Djikic, & Mullin, 2011) and these emotional experiences are likely to influence how readers think about the real world. In fact, there is a growing body of research indicating that experiences in the world of fiction are associated with a range of real-world phenomena. Lifetime exposure to narrative fiction predicts greater empathy (Mar, Oatley, Hirsh, dela Paz, Peterson, 2006; Mar, Oatley, & Peterson, 2009) and people randomly assigned to read brief pieces of fiction can experience increases in empathy (Bal & Veltkamp, 2013; Djikic,

Oatley, & Moldoveanu, 2013; Kidd & Castano, 2013). These associations between fictional literature and social outcomes suggest that the experiences elicited by a story may remain with us even after the story has ended.

More germane to the question of sexual socialization, previous research has established that exposure to fiction can impact how readers understand the world and themselves. Green and colleagues found that fictional stories could be used to influence readers' real-world beliefs, particularly when participants were deeply absorbed in the story (Green, 2004; Green & Brock, 2000; see also Prentice, Gerrig, & Bailis, 1997; Strange & Leung, 1999). For example, Green (2004) found that after reading a story about a homosexual man attending his fraternity reunion, readers who were highly immersed in the story were more likely to endorse story-consistent beliefs concerning homophobia in college fraternities. A separate body of research has found that it is very difficult to avoid changing one's beliefs in response to fiction (Marsh, Meade, & Roediger, 2003; Marsh & Fazio, 2006) and that fiction may be more effective at influencing attitudes than nonfiction (Foroni & Mayr, 2005; Hodson, Choma, & Costello, 2009). All of these studies suggest that readers internalize the beliefs presented implicitly or explicitly within fiction and that these changes in belief can alter one's real-world attitudes.

This begs the question as to whether fiction might also change our minds without explicitly addressing specific attitudes or beliefs. Fiction offers a unique opportunity to become intimately familiar with a cast of characters that we might otherwise never meet in the real world. Literary fiction in particular requires readers to richly imagine these characters and project themselves into the characters' lives, encouraging readers to mentally adopt novel characteristics and worldviews. Temporarily adopting diverse gender roles could provide a more flexible perspective on gender issues. Such flexible thinking might then facilitate a progressive worldview that is more tolerant of individual differences and less favorable to the stratification of social groups, such as gender. This idea is consistent with the finding that exposure to narrative fiction (including books and movies) can help to account for the relation between trait personality and liberal political beliefs (Xu, Mar, & Peterson, 2013). Narrative fiction might promote these liberal political attitudes not through specific content but by exposing people to a diversity of opinions and perspectives. Because liberal political attitudes are associated with more egalitarian views (Lottes & Kuriloff, 1992; Jost, Glaser, Kruglanski, & Sulloway, 2003), it is possible that fiction might lead to the adoption of more egalitarian gender role schemas.

Although previous research seems to indicate that greater media exposure leads to more stereotypic attitudes, it is possible that the influence of reading may be different. It has been theorized that the mechanism through which reading elicits positive social outcomes is through the mental simulation of social worlds (Mar & Oatley, 2008). Specifically, individuals must take an active role in taking the perspective of the narrative's characters, including reasoning about their mental states and intentions. A previous study found that when children were exposed to a story with less metacognitive information (i.e., less mental state information) they subsequently performed better on a perspective-taking task compared to those exposed to a story full of metacognitive information (Peskin & Astington, 2004). This suggests that the process of having to actively imagine and simulate social content plays a key role in fostering the social benefits of being exposed to narratives. It is possible that reading, compared to other media such as TV or film, requires readers to expend more effort to construct and interpret the perspectives and experiences of the characters portrayed. This difference could be a function of the multimodal nature of other media like TV or film, or perhaps reflect trends in the type of content appearing in these media. In any case, a possible difference in cognitive engagement may contribute to differences in outcomes associated with exposure to books compared to other media. For example, a previous study with children indicated that although exposure to storybooks predicted better performance on a social task, exposure to TV did not (Mar, Tackett, & Moore, 2010). This is consistent with other studies with children that have found social benefits associated with reading (Aram & Aviram, 2009; Adrian, Clemente, Villanueva, & Rieffe, 2005), but detriments associated with TV watching (Nathanson et al., 2013; cf. although movies appear to also predict benefits, Mar et al., 2010). It should be stressed, however, that there is little research on media differences within this context and any explanation of such differences is necessarily conjectural. It is not at all clear whether it is differences in how these media are processed or the typical content of these media that are behind these possible differences.

As noted earlier, there is not much empirical research on the reading of books and sexual socialization. An early content analysis found that although the depiction of sex within books changed over time (from 1959 to 1979), in general the representation of sex was rather typical and consistent with basic Western scripts (Abramson & Mechanic, 1983). It should be noted, however, that mention of contraceptive use was largely absent in these books (Abramson & Mechanic, 1983). Research that directly examines the influence of books on sexual attitudes is similarly rare, and typically focuses on specific genres that are rooted in sexual content such as erotica or romance novels. For example, exposure to romance novels has been associated with problematically negative attitudes toward condom use and reduced intentions to use condoms, perhaps reflecting a "carried away by passion" script for sex (Diekman, McDonald, & Gardner, 2000).

Present Study

The primary aim of the present study is to explore how exposure to books relates to sexual socialization. More specifically, we examine the relationship between lifetime exposure to various forms of text and the endorsement of gender equality, nontraditional gender stereotypes, and reduced sexual conservatism (i.e., greater individual freedom of sexual expression and behavior). We expect that exposure to fiction will be associated with more progressive and egalitarian sexual attitudes. That is, we hypothesize that exposure to fiction will predict greater endorsement of egalitarianism, rejection of gender stereotypes, and less sexual conservatism. In contrast, we predict that there will be no such associations for exposure to expository nonfiction. This putative difference should reflect the fundamental character-driven nature of narrative fiction that is absent in expository nonfiction. Although expository nonfiction is often informative, it does not (or rarely) require readers to adopt the role of characters. Without offering this diversity of perspectives, nonfiction should have no systematic association with sexual attitudes.

Previous research on the social effects of reading have primarily focused on the broad categories of fiction and nonfiction (Mar et al., 2006; Mar et al., 2009). These categories reflect a wide range of genres that may influence readers in distinct ways (Kidd & Castano, 2013; Fong, Mullin, & Mar, 2013). In the present study, we examined four genres: (a) domestic fiction, containing realistic characters and scenarios or settings; (b) romance, containing plots that are largely focused on romantic relationships; (c) science-fiction/fantasy, including futuristic, fantasy, or otherwise unrealistic elements; and (d) suspense/thriller, containing plots that are intended to build mystery, anxiety, or suspense. Although this set of genres is far from exhaustive, it reflects some of the major themes and groupings within popular fiction. Due to the lack of available research we have no strong predictions regarding these genres and their relation to sexual attitudes. That said, the past study demonstrating that reading romance novels was associated with negative attitudes toward condom use implies that this genre, in particular, might be associated with less sexual conservatism (Diekman et al., 2000).

We also wanted to rule out the possibility that the relationship between fiction and sexual attitudes is merely a function of individual differences and demographic variables. Compared to males, females tend to read more fiction (Mar et al., 2009), have more positive attitudes toward reading (McKenna, Kear, & Ellsworth, 1995), and are also more likely to advocate for gender equality (Eagly, Diekman, Johannesen-Schmidt, & Koenig, 2004). Similarly, individuals high on trait openness (i.e., those that are more creative, intellectual, and open minded; Costa & McCrae, 1992) spend more time reading (Finn, 1997; McManus & Furnham, 2006), have more liberal attitudes (Carney, Jost, Gosling, & Potter, 2008), and are more likely to endorse egalitarian gender roles (Katz-Wise, Priess, & Hyde, 2010). Finally, older individuals and those with greater English fluency are likely to have greater lifetime exposure to English literature. In order to conduct a conservative test of our hypothesis, we controlled for these demographic variables and individual differences in our analyses.

Method

Participants

Three hundred and sixty eight participants were recruited from an undergraduate research pool at a large Canadian university. Because this study is focused specifically on Western literature published in English, individuals with less than 9 years of English fluency were removed from analysis ($N = 40$). The final sample therefore included 328 participants (258 female) ranging in age from 17 to 44 ($M = 19.80$, $SD = 3.30$) who received partial course credit for their participation.

Measures

Reading. Reading was measured indirectly in the form of exposure to text, measured with a modified version of the Author Recognition Test (ART; Stanovich & West, 1989). In the ART, participants are shown a list of names and asked to identify those that are authors. Participants are informed that the list also contains nonauthor names (i.e., foils), thereby discouraging guessing. Mar and colleagues (2006) modified this task to measure fiction and nonfiction print exposure separately. Fiction and nonfiction categories consisted of 10 author names from five different subgenres (fiction: domestic fiction, romance, science-fiction/fantasy, suspense/thriller, and foreign; nonfiction: business, self-help, biography, philosophy/psychology, and science). In the present study, we utilized a further modified version of the ART that included expanded subscales (25 items per scale) for four fiction genres: (a) domestic fiction, (b) romance, (c) science-fiction/fantasy, and (d) suspense/thriller (see Fong et al., 2013, for details). These four fiction genres were expanded in order to allow a print exposure score to be calculated for each subgenre. The 10 foreign author names were also included, as well as the 50 nonfiction author names from the Mar and colleagues (2006) scale. The current version therefore contains 200 items in total: 160 authors and 40 foils. The ART has been shown to be superior to self-report approaches (Sénéchal, LeFevre, Thomas, & Daley, 1998), equivalent in validity to daily diary approaches (Allen, Cipielewski, & Stanovich, 1992), predict real-world reading (West, Stanovich, & Mitchell, 1993) and shopping intentions (Rain & Mar, 2014), and predict reading skills (Stanovich & West, 1989). It is currently the favored approach to measuring reading in educational and developmental psychology (Mol & Bus, 2011).

Gender role attitudes. Attitudes toward gender roles were assessed using two different measures. Gender egalitarianism was measured using the 20-item Traditional Egalitarian Sex Role Scale (Larsen & Long, 1988). The Traditional Egalitarian Sex Role Scale is a unidimensional scale that measures the extent to which an individual agrees that psychological gender differences are socially constructed, and thus gender should not prevent equality in the home, workplace, or society. Example items include "Having a job is just as important for a wife as it is for her husband," "The changing of diapers is the responsibility of both parents," and "Ultimately, a woman should submit to her husband's decision [reverse scored]." Participants rated each item on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Low levels of egalitarianism based on this measure are associated with rigid, authoritarian, and conservative attitudes (Larsen & Long, 1988), along with greater attributions of culpability for victims of rape (Willis, 1992). The measure has shown good psychometric properties, with a split-half reliability of .91 (Larsen & Long, 1988) and internal reliability in the form of Cronbach's alpha of around .85 (Katz-Wise et al., 2010).

Gender role attitudes were also assessed using the nine-item Sex Role Stereotyping subscale of Burt's (1980) Sexual Attitudes Survey. This scale measures the extent to which individuals endorse gender-specific roles in terms of work, family, and general social interactions. Sample items include "There is nothing wrong with a woman going to a bar alone (reverse scored)," "A wife should never contradict her husband in public," and "It is acceptable for the woman to pay for the date (reverse scored)." Responses were made using a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Past reports indicate that the measure has moderate internal reliability (Cronbach's alpha ranging from .61 to .80; Abbey & Harnish, 1995; Burt, 1980).

Sexual conservatism. Sexual conservatism was measured using the 10-item Sexual Conservatism subscale from Burt's (1980) Sexual Attitudes Survey. This scale measures restrictive attitudes toward sexual expression and behavior, including attitudes toward appropriate sexual partners, sexual acts, and sexual circumstances.

Table 1
Pearson Correlations and Descriptive Statistics

Model statistics	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Fiction (ART)	—													
2. Domestic	.76*	—												
3. Romance	.64*	.50*	—											
4. Sci-fi/Fantasy	.48*	.42*	.35*	—										
5. Suspense/Thriller	.58*	.46*	.57*	.41*	—									
6. Nonfiction (ART)	.54*	.43*	.26*	.31*	.23*	—								
7. Egalitarian sex roles	.20*	.19*	.23*	.08	.14*	.04	—							
8. Gender role stereotyping	−.15*	−.18*	−.11*	−.07	−.14*	−.04	−.70*	—						
9. Sexual conservatism	−.11*	−.13*	−.03	−.06	−.09	−.04	−.47*	.59*	—					
10. Extraversion	−.11*	−.18*	−.08	−.16*	−.15*	−.04	.05	−.04	−.13*	—				
11. Agreeableness	−.03	−.00	.06	−.03	−.00	−.05	.04	.08	.16*	.19*	—			
12. Conscientiousness	−.02	−.07	−.03	−.06	.08	−.07	.05	.04	.04	.17*	.29*	—		
13. Openness	.21*	.19*	.10	.14*	.11	.18*	.13*	−.07	−.24*	.17*	.14*	.19*	—	
14. Emotional stability	−.10	−.13*	−.08	−.10	.03	−.03	−.12*	.00	−.02	.32*	.27*	.27*	.05	—
M	6.61	1.65	1.68	0.48	0.82	2.29	3.96	2.84	2.63	3.23	3.68	3.46	3.50	2.96
SD	6.65	2.54	2.19	1.52	1.97	2.45	0.55	0.61	0.57	0.71	0.56	0.60	0.55	0.72
Cronbach's alpha	.91	.76	.66	.66	.69	.73	.89	.73	.76	.84	.75	.81	.76	.82

Note. ART = Author Recognition Test.
* $p < .05$.

Example items include "A woman who initiates a sexual encounter will probably have sex with anybody," "People should not have oral sex," and "Masturbation is a normal sexual activity (reverse scored)." Each of these scales was scored on a 5-point likert scale, identical to that employed for the Sex Role Stereotyping subscale mentioned earlier. In a previous sample this subscale has been reported to possess a Cronbach's alpha of .81 (Burt, 1980).

Personality. Trait personality was also measured in order to serve as a control, to rule out the possibility that basic individual differences account for any association observed between print exposure and gender role attitudes, and print exposure and sexual conservatism. Personality was measured using the Big Five Inventory (John & Srivastava, 1999). The Big Five Inventory consists of 44 short phrases containing trait adjectives that characterize the core elements of the Big Five personality dimensions: extraversion, conscientiousness, openness, emotional stability, and agreeableness (John, Naumann, & Soto, 2008). Participants rate each phrase on a 5-point Likert scale based on how much they agree that each item describes their personality, from 1 (*disagree strongly*) to 5 (*agree strongly*).

Procedure

Participants completed an online survey consisting of the above measures, which were presented in random order, followed by a demographics questionnaire. The demographics questionnaire included brief questions regarding the participants' self-reported gender, age, and English fluency (i.e., "How many years have you been fluent in English?"). The measures were completed in the context of other scales not relevant to the current paper, but included measures of interpersonal sensitivity, trait empathy and transportability, and belief in a just world. Participants received partial course credit for completion of the study.

Results

Descriptive Statistics

Table 1 provides means, standard deviations, internal reliability (Cronbach's alpha), and raw correlations for our measures of print exposure, gender role attitudes, sexual conservatism, and personality. Overall, participants selected very few foil items (i.e., fake names; $M = .54$, $SD = 1.22$), with 95.4% of participants selecting three or fewer foils.

Gender Differences

Females and males did not differ in age or English fluency, trait extraversion, agreeableness, conscientiousness, or openness, all $ps > .05$. However, females ($M = 2.84$, $SD = 0.70$) self-reported being less emotionally stable than males ($M = 3.38$, $SD = 0.61$), $t(324) = 5.73$, $p < .01$; $d = -0.82$. Furthermore, consistent with previous research (Mar et al., 2009), females had greater exposure to fiction than males (see Table 3). Specifically, females had greater exposure to domestic fiction and romance. Conversely, males had greater exposure to nonfiction than females. Females ($M = 81.12$, $SD = 9.94$) reported more egalitarian gender role attitudes than males ($M = 70.77$, $SD = 11.68$), $t(324) = -6.46$, $p < .01$, $d = 0.85$, but there were no gender differences observed in gender role stereotyping ($d = 0.15$) or sexual conservatism ($d = -0.11$), all $ps > .05$.

Correlations

Fiction exposure predicted greater egalitarian gender roles, less endorsement of gender role stereotypes, and lower levels of sexual conservatism. In contrast, exposure to nonfiction did not statistically significantly predict any of our measures of sexual attitudes. To further explore how fiction relates to these attitudes, we examined the four fiction genres we focused upon and found that they

differed with regard to their association with gender role attitudes and sexual conservatism. Similar to overall fiction, domestic fiction was related to greater belief in egalitarian gender roles, less endorsement of gender role stereotypes, and lower levels of sexual conservatism. The genres of romance and suspense/thriller were also related to more gender role egalitarianism and reduced gender role stereotyping, but had no relationship with sexual conservatism. Lastly, science-fiction/fantasy was not associated with any of the measures of gender role stereotyping or sexual conservatism.

Because gender can have a strong influence on outcomes such as gender attitudes (Carney et al., 2008) and our sample was not evenly split between males and females, the results of these raw correlations should be interpreted cautiously. However, partial correlations controlling for gender replicated all of the main findings of this correlation analysis. There was only one exception: the association between romance and decreased levels of gender role stereotyping failed to reach threshold for statistical significance (Table 2; bootstrapped 95% confidence intervals in parentheses).

Based on raw correlations, print exposure, gender role stereotyping, and sexual conservatism were all associated with a number of personality traits (see Table 1). Exposure to fiction in general, nonfiction, domestic fiction, science-fiction/fantasy, and suspense/thriller, were all related to higher levels of extraversion. Additionally, exposure to fiction, nonfiction, domestic fiction, and science-fiction/fantasy predicted higher levels of trait openness. Individuals who held more egalitarian gender role attitudes tended to be higher in openness, but less emotionally stable. In contrast, individuals who were more sexually conservative tended to be more introverted and agreeable, but less open.

In addition, exposure to fiction, the fiction genres, and nonfiction were all related to one another. That is, level of print exposure in one genre was related to the levels of print exposure in all other genres. Overall, this highlights the importance of examining unique associations for the different print-exposure measures by controlling for shared variance using linear regression, permitting a clearer picture of how exposure to the different genres relates to the other constructs of interest.

Regression Analyses

Given the associations among the print-exposure measures, it is possible that the relationship between exposure to fiction and gender role stereotyping is due to the shared variance between fiction and nonfiction. To rule out this possibility, and control for the demographic characteristics of our sample and trait differences, a series of hierarchical regressions were conducted.

First, a regression predicting egalitarian gender roles was conducted. Gender, age, fluency, personality traits, and nonfiction print exposure were entered into the first block as controls. ART foil scores were also included in the first block to control for patterns of inattentive responding. Overall ART fiction scores were then entered into the second block. Gender and trait openness were all predictors of egalitarian beliefs in Block 1 (see Table 4). That is, being female and higher in trait openness were both positively associated with more egalitarian beliefs. Importantly, exposure to fiction was a significant predictor of greater belief in egalitarian gender roles even after controlling for these individual differences. Gender continued to be a predictor in addition to fiction. Adding fiction to the regression model accounted for additional variance in attitudes regarding egalitarian gender roles, above and beyond that previously accounted for by the control variables in Block 1, $\Delta R^2 = .01$, $F(1, 313) = 4.86$, $p = .03$. A follow-up regression was used to investigate which fictional genres, if any, predicted greater endorsement of egalitarian gender roles. The same controls were entered into the first block of the regression and each of the ART genre scores were entered into the second block. None of the individual genres provided unique prediction of belief in egalitarian gender roles once the other factors were taken into account. Additionally, adding the individual fiction genres to the regression did not account for additional variance in the dependent variable, $\Delta R^2 = .01$, $F(4, 310) = 1.36$, $p = .25$.

Next, a parallel set of hierarchical regressions were used to examine the prediction of gender role stereotyping (see Table 5). English fluency and trait agreeableness predicted gender role stereotyping in the first block of control variables. Specifically, more

Table 2
Partial Correlations Controlling for Gender With Confidence Intervals

Model statistics	1	2	3	4	5	6
1. Fiction (ART)	—					
2. Domestic	.76* [.68, .82]	—				
3. Romance	.64* [.54, .71]	.49* [.42, .57]	—			
4. Sci-fi/Fantasy	.48* [.37, .58]	.42* [.31, .52]	.36* [.27, .45]	—		
5. Suspense/Thriller	.58* [.49, .67]	.46* [.37, .56]	.58* [.47, .68]	.41* [.30, .53]	—	
6. Nonfiction (ART)	.57* [.49, .64]	.46* [.35, .56]	.30* [.19, .41]	.31* [.16, .44]	.24* [.11, .38]	—
7. Egalitarian sex roles	.17* [.06, .27]	.17* [.06, .27]	.17* [.08, .27]	.09 [−.01, .19]	.15* [.04, .25]	.10 [.00, .19]
8. Gender role stereotyping	−.15* [−.26, −.03]	−.17* [−.28, −.06]	−.10 [−.22, .02]	−.07 [−.19, .03]	−.15* [−.27, .02]	−.05 [−.15, .05]
9. Sexual conservatism	−.12* [−.23, −.00]	−.13* [.08, .29]	−.05 [−.16, .06]	−.06 [−16, .03]	−.10 [−.22, .03]	−.04 [−.14, .07]
10. Extraversion	−.11* [−.22, −.00]	−.19* [−.29, −.07]	−.08 [−.21, .03]	−.16* [−.26, −.05]	−.15* [−.28, −.03]	−.05 [−.15, .07]
11. Agreeableness	−.03 [−.14, .07]	−.01 [−.11, .09]	.05 [−.05, .15]	−.02 [−.12, .08]	−.01 [−.14, .12]	−.03 [−.14, .06]
12. Conscientiousness	−.02 [−.13, .09]	−.07 [−.16, .04]	−.04 [−.14, .07]	−.06 [−.17, .06]	.08 [−.04, .20]	−.07 [−.17, .03]
13. Openness	.22* [.10, .32]	.19* [.08, .29]	.11* [.01, .21]	.14* [.02, .26]	.11 [−.01, .23]	.18* [.07, .29]
14. Emotional stability	−.06 [−.19, .06]	−.11 [−.23, .02]	−.01 [−.13, .11]	−.10 [−.22, .03]	−.03 [−.15, .09]	−.08 [−.19, .04]

Note. ART = Author Recognition Test.
* $p < .05$. 95% bootstrapped confidence intervals appear in parentheses.

years of English fluency predicted less gender role stereotyping and higher levels of agreeableness predicted more gender role stereotyping. In the second block, exposure to fiction predicted less endorsement of gender role stereotypes after controlling for individual differences. English fluency and trait agreeableness were also statistically significant predictors in this block. The addition of fiction exposure to the regression led to an increase in the variance accounted for, beyond that predicted by the control variables in Block 1, $\Delta R^2 = .03$, $F(1, 313) = 2.20$, $p = .01$. A follow-up analysis examining the role of individual fiction genres demonstrated that domestic fiction is the only genre that uniquely predicts reduced endorsement of gender role stereotypes (see Table 5). However, although domestic fiction was a unique predictor of gender role stereotyping, adding the individual fiction genres did not result in an increase in the amount of variance account for by the model compared to the control variables in Block 1, $\Delta R^2 = .03$, $F(4, 310) = 2.76$, $p = .10$.

Finally, a pair of regressions were conducted to investigate how print exposure predicts sexual conservatism (see Table 6). The same control variables as the previous regressions were entered into the first block. Extraversion, agreeableness, and openness were all predictors of sexual conservatism in the first block. Specifically, individuals who were more extraverted and more open were less likely to be sexually conservative. Individuals who were more agreeable, however, tended to be more sexually conservative. In Block 2, fiction exposure did not predict sexual conservatism, and the addition of fiction to the regression model did not account for any additional variance unaccounted for by the control variables in Block 1, $\Delta R^2 = .00$, $F(1, 313) = 0.53$, $p = .18$ A subsequent regression indicated that none of the fiction genres uniquely predicted sexual conservatism, and that the addition of these genres to the regression model did not account for any additional variance, $\Delta R^2 = .01$, $F(4, 310) = 0.90$, $p = .54$.

Discussion

Our data demonstrate that exposure to fictional literature is related to greater endorsement of gender equality and greater rejection of gender role stereotypes. Importantly, these relation-

ships were robust and could not be accounted for by differences in gender, age, English fluency, or personality traits. In contrast, sexual conservatism was not related to fiction print exposure after taking into account these other variables. There was no consistent pattern of association for specific genres, although exposure to domestic fiction did uniquely predict reduced gender role stereotyping on one of our measures, after controlling for the influence of the other genres. Importantly, exposure to nonfiction was not related to any of our measures of gender role stereotyping or attitudes toward sex, illustrating that these relationships are unique to fiction.

The observed associations contribute to our understanding of how media consumption relates to sexual socialization. With most past research demonstrating that consumption of audiovisual media—such as TV, film, and music videos—predicts greater gender

Table 3
Between-Gender Comparisons of Literary Exposure

Gender	M	SD	SEM	t value	df	Cohen's D
Fiction (ART)						
Female	7.06	7.10	0.44	−3.02*	173.33	0.35
Male	4.99	4.32	0.52			
Domestic						
Female	1.79	2.73	0.17	−2.63*	184.40	0.30
Male	1.12	1.58	0.19			
Romance						
Female	1.93	2.29	0.17	−5.20*	165.77	0.62
Male	0.75	1.45	0.18			
Sci-fi/Fantasy						
Female	0.47	1.48	0.09	0.31	324	−0.04
Male	0.53	1.68	0.20			
Suspense/Thriller						
Female	0.84	1.96	0.12	−0.39	324	0.05
Male	0.74	2.03	0.25			
Nonfiction (ART)						
Female	2.09	2.32	0.14	2.53*	92.31	−0.36
Male	3.03	2.81	0.34			

Note. SEM = standard error of the mean; df = degrees of freedom; ART = Author Recognition Test; Sci-fi = science fiction.
* $p < .05$.

	7	8	9	10	11	12	13	14
	—							
	−.70* [−.75, −.65]	—						
	−.52* [−.59, −.43]	.60* [.50, .67]	—					
	.05 [−.06, .18]	−.04 [−.16, .07]	−.13* [−.25, −.01]	—				
	.04 [−.10, .12]	.08 [−.02, .18]	.16* [.05, .26]	.19* [.08, .30]	—			
	.05 [−.06, .16]	.04 [−.08, .15]	.04 [−.08, .17]	.17* [.04, .31]	.29* [.17, .41]	—		
	.15* [.05, .27]	−.06 [−.17, .05]	−.24* [−.34, −.13]	.17* [.05, .27]	.14* [.02, .26]	.19* [.07, .30]	—	
	−.02 [−.12, .09]	−.01 [−.14, .11]	−.02 [−.14, .11]	.33* [.23, .43]	.31* [.21, .42]	.28* [.18, .38]	.04 [−.10, .16]	—

Table 4
Predicting Egalitarian Sex Roles by Exposure to Fiction and Fictional Genres, Controlling for Gender, Age, English Fluency, Nonfiction Exposure, ART Foils, and Personality

Model statistics	Variable	B	SE	β	t
Model 1					
$R^2 = .18$	Gender	0.48	0.34	0.36	6.40*
$F(10, 314) = 6.90^*$	Age	0.01	0.01	0.08	1.34
	English fluency	0.02	0.01	0.11	1.77
	Extraversion	0.03	0.04	0.08	1.44
	Agreeableness	−0.02	0.05	−0.02	−0.31
	Conscientiousness	0.02	0.05	0.02	0.43
	Emotional stability	−0.04	0.05	−0.06	−0.95
	Openness	0.12	0.05	0.12	2.21*
	Nonfiction	0.02	0.01	0.07	1.35
	ART foils	−0.03	0.02	−0.07	−1.35
Model 2 (ART fiction)	Gender	0.44	0.35	0.32	6.30*
$R^2 = .19$	Age	0.01	0.01	0.06	0.98
	English fluency	0.02	0.01	0.10	1.71
$F(11, 313) = 6.79^*$	Extraversion	0.07	0.04	0.10	1.71
	Agreeableness	−0.02	0.05	−0.02	−0.29
	Conscientiousness	0.03	0.05	0.03	0.51
	Emotional stability	−0.04	0.05	−0.06	−0.95
	Openness	0.10	0.05	0.10	1.82
	Nonfiction	0.00	0.01	0.00	0.00
	ART foils	−0.04	0.02	−0.10	−1.80
	Fiction	0.01	0.01	0.15	2.20*
Model 2 (ART genres)	Gender	0.42	0.08	0.32	5.38*
$R^2 = .19$	Age	0.01	0.01	0.07	1.13
	English fluency	0.01	0.01	0.10	1.59
$F(14, 310) = 5.34^*$	Extraversion	0.07	0.04	0.10	1.66
	Agreeableness	−0.02	0.05	−0.02	−0.37
	Conscientiousness	0.03	0.05	0.03	0.59
	Emotional stability	−0.04	0.05	−0.06	−0.97
	Openness	0.10	0.05	0.10	1.85
	Nonfiction	0.00	0.01	0.00	0.06
	ART foils	−0.01	0.03	−0.02	−0.30
	Genres: Domestic	0.02	0.01	0.07	1.09
	Romance	0.02	0.02	0.09	1.31
	Sci-fi/Fantasy	0.01	0.02	0.01	0.23
	Suspense/Thriller	0.00	0.02	0.00	0.05

Note. ART = Author Recognition Test; *SE* = standard error; Sci-fi = science fiction. Model 2 (ART genres) is derived from entering individual genre scores into the second block of our regression analysis instead of overall fiction scores.
* $p < .05$.

role stereotyping and less sexual conservatism, reading fictional literature appears to have a rather different pattern of associations. Perhaps somewhat surprisingly, although the romance genre is associated with both sexual content and traditional portrayals of gender roles, exposure to this genre was not related to more gender role stereotyping or reduced sexual conservatism in our regressions controlling for other factors. In fact, in raw correlations, exposure to the romance genre predicted more egalitarian gender role attitudes and less gender role stereotyping, with little association with sexual conservatism. It is difficult to make further inferences based on our data regarding why this was the case, but this pattern of associations speaks to the need for further research on this topic. A past content analysis might shed some light on why romance novels did not predict less conservative attitudes toward sexual behavior. This analysis found that romance novels contain rather typical depictions of sex, consistent with Western sexual scripts and with little mention of atypical sexual activities (Ménard

& Carbrera, 2011). Although romance novels might contain sexual content, the nature of this content does not appear to be inconsistent with traditional Western norms surrounding sex.

We theorize that the relationship between narrative fiction and gender role attitudes may be due to the character-driven nature of fiction. Whereas expository nonfiction is typically used to convey information to the reader, narrative fiction requires the reader to mentally adopt (or closely follow) the role of another individual. This experience offers fiction readers an opportunity to adopt a wider range of perspectives than they would normally experience in the real world. Moreover, this experience of diverse perspectives may grant the reader a flexible worldview that is more accepting of interpersonal differences (Xu et al., 2013). This theory is consistent with previous findings demonstrating that engagement with a fictional story can be used to successfully reduce prejudice toward outgroup members (Katz & Zalk, 1978; Paluck, 2009; see supplementary table for Paluck &

Table 5
Predicting Gender Role Stereotyping by Exposure to Fiction and Fictional Genres, Controlling for Gender, Age, English Fluency, Nonfiction Exposure, and Personality

Model statistics	Variable	B	SE	β	t
Model 1					
$R^2 = .07$	Gender	−0.17	0.09	−0.11	−1.88
$F(10, 314) = 2.48^*$	Age	−0.02	0.01	−0.09	−1.38
	English fluency	−0.03	0.01	−0.16	−2.48*
	Extraversion	−0.06	0.05	−0.07	−1.15
	Agreeableness	0.13	0.06	0.12	2.02*
	Conscientiousness	0.08	0.06	0.08	1.28
	Emotional stability	−0.03	0.05	−0.04	−0.56
	Openness	−0.08	0.06	−0.08	−1.32
	Nonfiction	−0.01	0.01	−0.03	−0.43
	ART foils	0.03	0.03	0.05	0.96
Model 2 (ART fiction)	Gender	−0.11	0.09	−0.07	−1.20
$R^2 = .10$	Age	−0.01	0.01	−0.06	−0.97
	English fluency	−0.03	0.01	−0.15	−2.42*
$F(11, 313) = 2.87^*$	Extraversion	−0.07	0.05	−0.09	−1.46
	Agreeableness	0.13	0.06	0.12	2.01*
	Conscientiousness	0.07	0.06	0.07	1.21
	Emotional stability	−0.03	0.05	−0.04	−0.60
	Openness	−0.06	0.06	−0.05	−0.89
	Nonfiction	0.02	0.02	0.06	0.95
	ART foils	0.04	0.03	0.08	1.48
	Fiction	−0.02	0.01	−0.18	−2.52*
Model 2 (ART genres)	Gender	−0.12	0.09	−0.08	−1.29
$R^2 = .10$	Age	−0.01	0.01	−0.07	−0.99
	English fluency	−0.02	0.01	−0.15	−2.31*
$F(14, 310) = 2.36^*$	Extraversion	−0.08	0.05	−0.09	−1.56
	Agreeableness	0.13	0.06	0.12	1.99*
	Conscientiousness	0.07	0.06	0.07	1.22
	Emotional stability	−0.03	0.05	−0.04	−0.65
	Openness	−0.05	0.06	−0.05	−0.85
	Nonfiction	0.02	0.02	0.06	0.93
	ART foils	−0.00	0.03	−0.01	−0.10
	Genres: Domestic	−0.04	0.02	−0.16	−2.22
	Romance	0.00	0.02	0.02	0.23
	Sci-fi/Fantasy	−0.00	0.03	−0.00	−0.05
	Suspense/Thriller	−0.02	0.02	−0.07	−0.90

Note. ART = Author Recognition Test; *SE* = standard error; Sci-fi = science fiction. Model 2 (ART genres) is derived from entering individual genre scores into the second block of our regression analysis instead of overall fiction scores.
* $p < .05$.

Green, 2009). In the present study, the flexible worldview promoted by engagement with fictional worlds manifested itself as more progressive and egalitarian beliefs regarding gender roles and sexual behavior.

A clear limitation of our study is that it cannot address how exposure to narrative fiction through literature may differ from engaging with other types of media. The line of theorizing laid out above would clearly apply to other forms of narrative fiction. As such, this initial study should be considered exploratory. It helps to fill a gap in the current literature in that past research on sexual socialization failed to explore the role of exposure to narrative texts. Explaining why we observed associations for reading that differ from those observed for other media will require future work. Although we have suggested that differences in levels of cognitive engagement may account for diverging outcomes after exposure to different media, this is only conjecture and the possibility cannot be addressed with our data. A future study could

explore levels of engagement with respect to different media and examine whether engagement acts as a mediator for social outcomes (cf. Green et al., 2008).

It is important to emphasize that causal inferences cannot be supported based on this correlational study. In other words, we cannot determine from our data whether reading fiction actively shapes sexual socialization to produce more egalitarian and liberal attitudes. One alternative explanation is that individuals with more progressive attitudes are drawn to the interpersonal nature of fiction. Although we attempted to account for individual differences in the present study by measuring and controlling for them statistically, it is also possible that an unexplored difference (e.g., intelligence) facilitates both progressive attitudes and a preference for fiction. Future studies should attempt to rule out these possibilities by experimentally manipulating exposure to fiction and measuring subsequent changes in sexual attitudes. Using such an approach, previous research has shown that fiction is capable of

Table 6

Predicting Sexual Conservatism by Exposure to Fiction and Fictional Genres, Controlling for Gender, Age, English Fluency, Nonfiction Exposure, ART Foils, and Personality

Model statistics	Variable	B	SE	β	t
Model 1					
$R^2 = .15$	Gender	0.01	0.08	0.00	0.07
$F(10, 314) = 5.48^*$	Age	−0.02	0.01	−0.11	−1.79
	English fluency	−0.02	0.02	−0.11	−1.83
	Extraversion	−0.12	0.05	−0.16	−2.69*
	Agreeableness	0.22	0.06	0.21	3.75*
	Conscientiousness	0.10	0.06	0.10	1.74
	Emotional stability	−0.01	0.05	−0.01	−0.12
	Openness	−0.27	0.06	−0.26	−4.63*
	Nonfiction	0.01	0.01	0.03	0.54
	ART foils	0.02	0.03	0.05	0.89
Model 2 (ART fiction)	Gender	0.03	0.08	0.02	0.41
$R^2 = .15$	Age	−0.02	0.01	−0.10	−1.56
	English fluency	−0.02	0.01	−0.11	−1.79
$F(11, 313) = 5.16^*$	Extraversion	−0.13	0.05	−0.17	−2.84*
	Agreeableness	0.22	0.06	0.21	3.74*
	Conscientiousness	0.09	0.06	0.10	1.69
	Emotional stability	−0.01	0.05	−0.01	−0.12
	Openness	−0.25	0.06	−0.24	−4.34*
	Nonfiction	0.02	0.02	0.08	1.17
	ART foils	0.03	0.03	0.06	1.16
	Fiction	−0.01	0.01	−0.09	−1.35
Model 2 (ART genres)	Gender	0.03	0.08	0.02	0.30
$R^2 = .16$	Age	−0.02	0.01	−0.10	−1.51
	English fluency	−0.02	0.01	−0.11	−1.74
$F(14, 310) = 4.12^*$	Extraversion	−0.14	0.05	−0.17	−2.92*
	Agreeableness	0.21	0.06	0.21	3.69*
	Conscientiousness	0.09	0.06	0.10	1.69
	Emotional stability	−0.01	0.05	−0.01	−0.16
	Openness	−0.25	0.06	−0.24	−4.26*
	Nonfiction	0.02	0.02	0.08	1.25
	ART foils	0.01	0.03	0.01	0.21
	Genres: Domestic	−0.02	0.02	−0.10	−1.42
	Romance	0.01	0.02	0.03	0.43
	Sci-fi/Fantasy	−0.00	0.02	−0.01	−0.18
	Suspense/Thriller	−0.01	0.02	−0.04	−0.60*

Note. ART = Author Recognition Test; *SE* = standard error; Sci-fi = science fiction. Model 2 (ART genres) is derived from entering individual genre scores into the second block of our regression analysis instead of overall fiction scores.
* $p < .05$.

causal influences on immediate beliefs (Gerrig & Prentice, 1991; Green, 2004; Green & Brock, 2000) and perspective taking (Bal & Veltkamp, 2013; Djikic et al., 2013; Kidd & Castano, 2013). Although this past work on belief change has focused specifically on story-related beliefs, it is possible that fiction can affect broad attitudes toward sex and gender without addressing these issues specifically. Rather, experiencing fictional worlds through the eyes of both genders, and from a diversity of different perspectives, may have a similar effect over time. Based on our data we also cannot infer any mechanisms by which narrative fiction influences attitudes toward gender roles. Future studies should explore possible processes, such as perspective taking, that might mediate the relationship between exposure to fictional narratives and attitude change.

In this study, we separated the broad category of fiction into four genres to investigate which genres may be driving the relationship between fiction and sexual attitudes. Although we had no formal predictions regarding these genres, our exploratory analyses offer partial support that domestic fiction may be a unique contributor toward attitude change. In particular, after controlling for individual differences, exposure to domestic fiction was related to reductions in gender stereotyping. Our approach to examining genre has some limitations, however. We divided fiction into four subgenres based on the categorizations previously used in the ART (Stanovich & West, 1989; Mar et al., 2006). Although these subgenres seem broadly representative of fiction overall (based on categories used by booksellers such as Amazon.com, e.g.), it is possible that some important subgenres may have been overlooked using this method (e.g., historical fiction). In addition, some broad subgenres may have benefitted from further decomposition into more specific subgenres (e.g., suspense/thriller could be usefully separated into horror and action). Future research may benefit from considering alternate decompositions of fiction into different subgenres, either by adding additional subgenres or considering interactions be-

tween different subgenres to create more specific ones (e.g., paranormal romance). It is also worthwhile to note that some works of nonfiction are particularly character driven (e.g., biography) or may include narrative vignettes. Our study did not examine narrative nonfiction, focusing solely on expository nonfiction. But it is entirely possible and perhaps even likely that narrative nonfiction may be amenable to promoting changes in social outcomes in a fashion similar to narrative fiction.

Lastly, it should be noted that the effect sizes for our regression analyses are small. It is important to point out, however, that our regression models are highly conservative as they include a large number of important control variables. Specifically, we control for gender, age, years of English fluency, all of the Big Five personality traits, and exposure to nonfiction texts. To observe additional prediction of variance after controlling for these variables speaks to the robustness of our effect. Given that complex social constructs such as gender attitudes are likely to have multiple determinants, we have striven to demonstrate that our variable of interest (i.e., exposure to fiction) has an influence over and above other factors. Moreover, the effect sizes for the basic associations between fiction and these outcome variables are not that small. For fiction overall, the correlations range from .11 to .20 (.12 to .17, controlling for gender). By way of context, the mean correlation found in individual differences research is .24 ($SD = .17$, median = .21; Fraley & Marks, 2007) and for social psychology research it is .21 ($SD = .15$, median = .18; Richard, Bond, & Stokes-Zoota, 2003). Although the effects reported here could not be defined as large, they are also not far from the average effect size found in psychology and other forms of research (Hemphill, 2003; Meyer et al., 2001). It is also difficult to assess the practical or meaningful significance of effect sizes (Rosenthal, 1994; Meyer et al., 2001). Even small effect sizes may result in meaningful practical effects and large effects may be meaningless or unimportant in many contexts. In the context of our research, the effects observed could be related to meaningful differences in behavior given that the outcomes of these attitudes are important and these attitudes apply to a large number of people. For example, egalitarian attitudes have been related to outcomes such as perceptions of sexual assault victims (Willis, 1992) and the likelihood of female employment in married couples (Khanjian, 2002). Similarly, gender role stereotyping has been associated with rape myth acceptance (Burt, 1980), attitudes toward domestic violence (Haj-Yahia, 2003; Haj-Yahia & Schiff, 2007), treatment of rape victims (Shechory & Idisis, 2006), and past experience engaging in nonconsensual sexual behavior (Carr & VanDeusen, 2004). Because such outcomes are very important for personal and community well-being, effect sizes that are average or smaller remain worthy of attention and warrant close investigation.

In closing, this study contributes to a growing body of empirical research suggesting that fictional literature is associated with a wide range of real-world consequences not limited to vocabulary and verbal ability (Kidd & Castano, 2013; Green & Brock, 2000; Mar et al., 2006; Prentice et al., 1997; Appel, 2011). Fictional stories offer a fascinating and unique realm where imagined experiences can build upon experiences in the real world. These imagined experiences can shape our perceptions of the real world, our social others, and the self.

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