Fiction and morality: Investigating the associations between reading exposure, empathy, morality, and moral permissibility

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Pre-registered at <https://osf.io/y39r4>

Data, materials, and MPlus code available at <https://osf.io/ajv42/>

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Abstract

The purpose of this research was to investigate the relationship of fiction exposure and individual differences in morally relevant traits such as empathy, moral identity, and moral agency. Results from Study 1 were used to form hypotheses and specify statistical models for a pre-registered second study. Relationships between moral constructs and three measures of fiction exposure (adult and young adult [YA] fiction and nonfiction) were tested with structural equation models (controlling for personality and gender). Associations between YA fiction and empathic concern, integrity, and moral agency were consistent across studies, as was that between Adult fiction and moral permissibility. In line with theories of empathic simulation, empathy fully mediated the association between YA fiction and the sense of moral self.

Key words: MORALITY; EMPATHY; NARRATIVE; FICTION; NONFICTION

Public Policy Statement:

With little evidence that they can really change people’s moral behavior, books and films have nevertheless been the object of bans. Results from this study suggest that reading is related to morality in various ways: greater familiarity with fiction authors was positively correlated with integrity, perceived moral agency, and, via empathy, increased awareness of moral self. We also introduce a measure of young adult fiction exposure that has the potential to be of use in future research, especially given widespread popularity of YA fiction in film and print.

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People have long assumed that books have the potential to affect readers’ moral character. On the one hand, individual books have been banned for their potential to threaten readers’ real-world morality (American Library Association, 2017; *Index Librorum Prohibitorum*; *Encyclopaedia Britannica,* 2017). On the other hand, authors (Gardner, 1977), philosophers (Nussbaum, 1985), and psychologists (Hakemulder, 2000; Mar & Oatley, 2008; Oatley, 2016) have defended the potential of fiction to foster moral sensitivity and improve social cognitive abilities. Empirical studies of the effects of fiction have tended to focus on social cognition, or the ability to understand the intentions and feelings of other people (Mumper & Gerrig, 2017; Panero et al., 2016). Here, with a series of structural models tested across two studies, we extend such research by investigating the association between what people read and how they view morality more broadly.

## Theoretical Framework

Several theories support the possibility that narratives can exert moral influence on readers. Social Cognitive Theory suggests that fiction consumers may learn morally relevant behavior via observation of fictional characters: Bandura (2001) holds that media provide social exemplars upon whom viewers (and by extension, readers) model behavior; such vicarious learning is particularly strong when observers identify with media characters. However, fictional characters can model immoral as well as moral behavior. Perceived similarity and subsequent identification with media models may encourage good behaviors (e.g., health [Lee & Shapiro, 2016] and prosociality [Greitemeyer, 2011; Johnson, 2012]), but it can also facilitate moral disengagement (Sanders & Tsay-Vogel, 2016; Bandura et al., 1996), proposed as the mechanism through which fiction consumers engage with immoral fictional characters or anti-heroes (Krakowiak & Tsay-Vogel, 2013; Raney, 2011).

Similarly, the simulation of social experience that occurs with engagement with narrative (Mar & Oatley, 2008; Oatley, 2016) may lead to better social cognition (the evidence is mixed: *cf.* *cf.* Black & Barnes, 2015, Kidd & Castano, 2013; Panero et al., 2016; Samur, Tops, & Koole, 2017). Mar and Oatley (2008) propose that fiction consumers engage in empathic and social simulation, practicing navigating complex social situations within the confines of a fictional world, through emotional engagement with characters. Because these characters might themselves behave in moral or immoral fashions, indirect effects of fiction on behavior via simulation could facilitate immoral *or* moral behavior. For this reason, Hakemulder (2000) refers to such social cognitive effects fiction may have as “pre-ethical.” Any ethical effects must go above and beyond the mere enhanced understanding of social information, which may encourage, but does not guarantee, moral outcomes. As such, the purpose of this research was to determine which of two competing theories best describes the relationship between morality and cumulative fiction exposure: fiction as Moral Laboratory (relating to a greater sense of morality) vs. fiction as potential Moral Boundary Erosion (relating to more flexible morals).

Moral Laboratory. To what extend does fiction serve as a Moral Laboratory (Hakemulder, 2000), fine-tuning our moral senses? Although there is limited empirical research on the association of book exposure and moral traits, a growing body of evidence suggests reliable if small positive correlations between reading and empathy (Mumper & Gerrig, 2017). Experimental research also supports the idea that fiction exposure may influence empathy. In two pre-post design studies, Bal and Veltkamp (2013) had participants read either fiction or nonfiction and tested self-reported empathic concern immediately and one week after the manipulation; for participants who reported being highly engaged with the stories, empathy scores were higher compared with the nonfiction group at the one-week post-test (for those who were not engaged, it was lower).

Research suggests that when fiction does influence morality, it is does so positively. For example, Vezzali and colleagues (2014) found that reading a passage from Harry Potter about prejudice improved attitudes towards immigrants for those who identified with Harry Potter (there was no effect for those who identified more with Voldemort, the villain). There is also some evidence that reading fiction can change self-concept, as indeed readers seem to expect (Mar, Djikic, & Oatley, 2008). For example, undergraduates randomly assigned to read literary fiction (vs. documentary) reported greater change in personality (Djikic, Oatley, Zoeterman & Peterson, 2009). In a different study, identifying with fantastical characters led to perceptions of the self that reflected the particular fantasy (e.g., after reading *Twilight,* participants who implicitly identified as vampires reported having long teeth; Gabriel & Young, 2011). Given such research, it seems reasonable to believe that reading fiction that features characters who make moral choices could lead to a stronger sense of moral self.

Here, we focus on three aspects of morality that are intrinsic to how people act: moral self, integrity, and moral agency. *Moral self* is the salience of morality in people’s sense of identity (Blasi, 1980), *integrity* refers to the preference for consistency between moral principles and actions (Blasi, 1983); both have been operationalized in various instruments (Aquino & Reed, 2002; Black & Reynolds, 2016), and are related to constructs such as empathy, moral disengagement, and volunteering behavior. Importantly, people experience similar relationships with fictional characters as they do with real people (Cohen, 2001; Cole & Leets, 1999), even to the extent of reporting cognitive overlap and subsequent self-expansion, particularly when the fictional character was perceived to embody real-life ideal traits (Shedlosky-Shoemaker, Costabile, & Arkin, 2014).

A sense of moral self also serves as a foundation for *moral agency*, or the ability to do what one believes to be right and to avoid doing what one believes to be wrong (Bandura, 2006). Although there is little empirical research directly investigating moral agency (but see Black, 2016), it is an assumption of most research on moral judgment and a pre-requisite of moral responsibility (Bandura, 2002, 2006; Pasupathi & Wainryb, 2010). Lack of moral agency results in the avoidance of moral responsibility via mechanisms such as diffusion of responsibility, ascription of blame to others, justification, and dehumanization (Bandura, Barbaranelli, Vittorio Caprara, & Pastorelli, 1996). Given the emphasis researchers of fiction have placed on social cognition, particularly theory of mind (Black & Barnes, 2015; Kidd & Castano, 2013, 2016; Mar et al., 2006; Panero et al., 2016), the associations between moral agency and social cognitive theory are potentially vital to the study of morality and fiction. In this study, we investigate the relation of reading and perceived moral agency, or the extent to which people feel in control of their morally relevant actions.

Moral Boundary Erosion. In addition to exploring the possibility that fiction functions as a Moral Laboratory, we also test a theory of Moral Boundary Erosion according to which exposure to fiction that deviates from real-world morality is associated with greater potential to see immoral or taboo actions as permissible. The belief that books may contaminate real-world morality seems to underlie decisions behind banning books that violated purity norms (e.g., Joyce’s *Odyssey,* Lawrence’s *Lady Chatterley’s Lover*). Fears have focused on specific books believed to threaten moral, religious, and/or societal norms, but the more people read, the more likely they are to encounter such content. Anti-heroes and morally ambiguous protagonists, such as *Breaking Bad’s* Walter White, are frequently well-liked by audiences (Garcia, 2016). Recent experimental research found that people tend to give harm violations experienced in a fictional context a “fictive pass,” rating them as less morally wrong, less deserving of punishment, and less likely to have real-world consequences (Sabo & Giner-Sorolla, 2017). From this perspective, it seems plausible that repeated, lifelong exposure to fiction could push or erode real-world moral boundaries.

Although this has not been tested with respect to cumulative fiction exposure and moral boundary erosion in general, prior research has investigated how exposure to certain fictions may erode specific moral norms, such as those related to violence (Engelhardt et al., 2015; but see Kühn et al., 2018), drinking (Hanewinkel et al., 2012, 2014), and sex (Fong, Mullin, & Mar, 2015). Correlational research suggests that reading certain types of fiction relates to more flexible morality. Black, Capps, and Barnes (2017) asked participants to judge whether acts normally considered taboo or immoral might sometimes be permissible and found unique positive correlations between exposure to contemporary literary fiction, fantasy, and science fiction and moral permissibility. In other words, readers of these genres (operationalized as familiarity with authors who write exclusively in those genres) demonstrated more flexible morality, reporting that it *could* sometimes be acceptable to act in taboo and immoral ways.

Notably, a willingness to consider mitigating circumstances for immoral acts and breaking taboos is not necessarily wrong (Allan & Burridge, 2006). Reading may encourage people to consider conflicting rationale for why a normally impermissible act is chosen, and in doing so, realize that differing circumstances may result in distinct moral imperatives (see Black & Barnes, 2019). Thus, the theory of Moral Boundary Erosion does not predict that exposure to fiction is associated with *immorality* per se, but rather with moral flexibility. Here, we test whether exposure to books in general relates to Moral Boundary Erosion, operationalized as greater moral permissibility.

## The Current Research

The purpose of this research was twofold: first, we tested the association of reading and individual differences in trait morality and moral permissibility judgments, and second, we compared three different types of narrative: nonfiction, adult fiction, and young adult fiction. We conducted an exploratory study, and then pre-registered a follow-up using the best models from Study 1. To explore the association of reading and morality, we used a series of models testing the direct association of reading and integrity, moral self, moral agency, and moral permissibility, controlling for gender and personality where appropriate see (the moral constructs were tested together in multivariate path analyses [see Figure 1]; moral permissibility was tested separately).

We also tested Mar and Oatley’s (2008) theory of empathic simulation. Empathic simulation (see also Oatley, 2016) requires readers to understand characters and their experience emotions similar to some extent; through experiencing characters’ feelings and striving to understand their social motivations, readers develop their own sense of social (and potentially moral) selves within a social environment. As such, we proposed and tested a mediation model whereby reading increases empathy which in turn affects moral identity, here operationalized as moral self and integrity (see Figure 2).

Because of the importance of agency in moral development (Lapsley, 2010; Pasupathi & Wainryb, 2010), and the age of our sample (young adults), we were particularly interested in the association of perceived moral agency with exposure to different types of literature. Moral agency—an assumption of both theory and measurement in moral psychology—is malleable, both via individual experience of moral action, reflection, and determination to act differently in the future (Pasupathi & Wainryb, 2010) and through the influence of social modelling (Bandura, 2006). Importantly, although prior research has not investigated the relationship between moral agency and fiction exposure per se, models of engagement with immoral fictional characters have highlighted the importance of moral disengagement (e.g., Raney, 2011; Sanders & Tsay-Vogel, 2016), which can be seen as a refusal to exercise moral agency in order to deny responsibility for actions (Bandura et al., 1996). As such, there are at least two ways in which reading could be associated with moral agency: stories could encourage readers to reflect on their own actions, in part by providing models who act as moral agents, and/or they could provide practice at moral disengagement (e.g., by making immoral characters sympathetic and likeable).

Assessing reading exposure. Lifetime exposure to literature is customarily assessed with author checklists, based on Stanovich and West’s (1989) Author Recognition Test (ART), designed to gauge exposure to books read for pleasure, with foils or fake names to control for cheating. Such checklists avoid socially desirable responding associated with asking people how much they read. Various adaptations of the original ART (e.g., Acheson, McDonald, & Wells, 2008; Mar et al., 2006) have been moderately associated with social cognition, ranging from *r*(173) = .21 (Mar et al., 2009; see also Mumper & Gerrig, 2017 for a meta-analysis) to *r*(790) = .47 (Panero et al., 2016) for fiction. Here, we used Mar and colleagues’ (2006) author checklist to measure familiarity with (adult) fiction and nonfiction.

To better tap the type of leisure reading many college undergraduates may prefer, we also used a self-developed checklist of authors who write young adult (YA) fiction, which features teen protagonists and focuses on coming-of-age stories. Past research on fiction has used lists of authors that write for adults, despite frequently using samples of university undergraduates whose leisure reading is more likely to have been YA fiction. In fact, results from a 2012 survey suggest that over half of YA books are purchased by adults (*Publisher’s Weekly,* 2012), and the market for YA fiction has been increasing compared with adult fiction (Anderson, 2018). Despite this increasing popularity, there has been little empirical research that investigates whether exposure to YA differs from exposure to adult fiction. A notable exception is a recent paper by Martin-Chang, Kozak, and Rossi (2019), who adapted Mar and colleagues (2006) ART by adding 23 names of authors of children’s and YA books and compared recognition of adult and children/YA books to reading ability in a sample of high school teenagers. Participants who recognized more adult authors also recognized more children’s/YA authors; however, reading ability was only weakly related to adult author recognition whereas it was strongly correlated to children’s/YA author recognition. Similarly to Martin-Chang et al., we only included YA fiction authors who had not written for adults to ensure that our new measure could distinguish between the two.

Reading and emerging adulthood. It was essential to accurately assess exposure to the type of fiction our sample was likely to read. We were not only interested in the effects of familiarity with YA fiction because our sample was more likely to be familiar with it. Many, if not most, YA books are coming-of-age novels, a topic that is of as much importance to people in their late teens and early twenties (i.e., college students) as to younger teenagers; consolidation of identity, including moral identity, continues into emerging adulthood (ages 18-25; see Arnett, 2000). Young adults (including our college-age samples) read such books because they enjoy them, and the literature suggests that adolescents may be particularly able and willing to learn from books (Alexander & Fox, 2011). This could result in increasing vulnerability to learning maladaptive behavior and/or beliefs, depending on book content (e.g., Altenburger, Carotta, Bonomi, & Snyder, 2017). However, it could also result in learning moral values. On the whole, YA fiction tends to be fast-paced and plot-driven, with high emotional stakes. To the extent that fiction encourages readers to focus on the emotions of others and emotional content facilitates empathic simulation (Mar & Oatley, 2008), familiarity with YA fiction may be particularly predictive of the emotional aspects of social and moral cognition, such as empathy.

# Study 1

In this initial study, we first examined the direct association between reading, empathy, and morality, controlling for related personality factors and gender, and, based on the results, tested the abovementioned mediation model. If reading works as Moral Laboratory, then positive associations between author recognition and empathy, integrity, moral self, and moral agency would be found. Given the focus on emotions and coming of age typical of YA fiction, we were especially interested in the association of YA author recognition and empathic concern (considered the affective aspect of empathy) and moral agency. To test the Moral Boundary Erosion theory, we used moral permissibility judgments (Black et al., 2017). To the extent that books are associated with greater moral permissibility, a positive correlation between all three measures of narrative exposure (Adult fiction, nonfiction, YA fiction) and moral permissibility would be found.

# Method

## Participants and Procedure

An online survey was offered to the departmental subject pool in exchange for credit in an introductory psychology course at a large Midwest university. Participants reported their age, ethnicity, political orientation, favorite genre, and average number of books read for pleasure per month. The sample was majority white (72.0%), 5.1% African American, 15.2% Asian, 7.8% Native American, 1.2% Pacific Islander, and 8.6% Hispanic. Most were 18 years old (53.3%); 28.8% were 19; 10.5% were 20; the remaining 7.4% were 21 and older. The sample tended to be conservative: 23.3% were conservative or very conservative, 29.6% moderately conservative, 26.5% moderately liberal, and 20.6% were liberal or very liberal. After excluding discarded participants (see below) and those who left a survey page open for more than five minutes, mean survey completion time was 39 minutes (*SD* = 13, range = 63). See Supplemental Materials (SM) for details.

Power analyses based on Kidd and Castano’s (2016)[[1]](#footnote-1) reported effect size for the correlation between empathic concern and genre fiction indicated the need for *N* = 270; however, only 263 undergraduates (79% female) had completed the study by the end of the semester. Two participants were discarded for excessively short survey time (less than ten minutes), and four were discarded for excessive guessing on the author recognition tests (more than 3.5 standard deviations above the mean foils selected), leaving a final sample of *N* =257. Although fewer cases than we had hoped for, 200 cases (or 10 per parameter) are usually considered sufficient for structural equation models such as the path analyses used here (Kline, 2011).

## Instrumentation

Author Recognition Test (ART). Mar and colleagues (2006) adapted an instrument developed by Stanovich and West (1989) to assess exposure to fiction, based on signal detection theory. A series of author names are presented with interspersed foils and participants are asked to identify those they know for sure are authors. Author name checklists have been related to consumer behavior (Rain & Mar, 2015), verbal ability (Acheson et al., 2008), and reading speed (Moore & Gordon, 2015). A total score may be calculated by subtracting the number of foils chosen from the number of hits (Acheson, Wells, & MacDonald, 2008); foil selection may also be used to discard participants with a high rate of guessing (Djikic, Oatley, & Moldoveanu, 2013a; Kidd & Castano, 2013), as was done in this study. Mar and colleagues adapted the original instrument in order to assess Fiction (50 names) and Nonfiction (50 names). See Table 1 for means, standard deviations, range, and internal consistency reliability for all variables.

Young Adult Fiction Test (YAFT). In order to assess exposure to the type of fiction teenagers are more likely to have read for pleasure (our sample was composed primarily of college freshpersons), we generated a list of 108 YA authors that (1) had written either a minimum of three young adult novels or at least one bestselling young adult novel and (2) had not published fiction for adults (as of the time of data collection). The list was curated in 2016 by an expert on young adult fiction and was designed to cover a wide array of genres within the young adult category. The list of authors was generated based on physical presence (number of copies on shelves) at a large, chain bookstore and with reference to bestseller lists, awards, and longevity in the industry, and the screening criteria described above were then applied. Ten authors were not selected by any participant and were therefore discarded, leaving 98 names plus 40 foils. Total scores were calculated by subtracting foils from the number of names selected. See Table 2 for list of authors.

**Empathy**. Two subscales of the IRI (Davis, 1980) were used to assess empathic concern (EC) and perspective-taking (PT). Both consisted of seven items answered on a 5-point scale (*describes me very well* to *does not describe me at all*). The EC subscales includes items such as “I often have tender, concerned feelings for people less fortunate than me,” compared with items such as “Before criticizing somebody, I try to imagine how I would feel if I were in their place,” and “When I'm upset at someone, I usually try to "put myself in their shoes" for a while.” for PT.

Morality. Two facets of trait morality were measured by two subscales of Moral Identity Questionnaire (Black & Reynolds, 2016): Moral Self, or the importance morality plays in identity (sample item: “Not hurting other people is one of the rules I live by”), and Integrity, or the emphasis an individual puts on acting in accordance with the moral principles (sample item: “It is more important that people think you are honest than being honest” [reverse-scored]). With eight and twelve items respectively, both are measured on 6-point Likert-type scales. A third facet of morality, perceived moral agency, was assessed with the Moral Agency Scale (MAS; Black, 2016), a 15-item questionnaire answered on a 5-point Likert scale. The MAS measures the extent to which people believe they are in control of their morally relevant actions, and includes items such as “No one can make me do something I know to be wrong.”

Moral permissibility. Black and colleagues (2017) adapted a test used by Shtulman and Tong (2013) as a proxy for real world moral judgment. The 25-item Moral Judgment Task asked participants whether a series of actions would ever be morally permissible (responses are Yes/No). Most reflect moral purity concerns (see Haidt, McCauley, & Rozin, 1994), such as (is it ever morally permissible for a/an) “dinner guest to spit in his water glass before taking a drink?” and “young woman to give her brother an open-mouthed kiss?” Others involve harm or justice violations such as “husband to kill his wife in order to collect life insurance” and “person to avoid paying taxes by actions that are not necessarily legal.”

Personality. The Big Five Inventory (John et al., 2008) assesses the extent to which the traditional big five personality traits (Openness to Experience, Conscientiousness, Extraversion, Agreeableness, Neuroticism) are dominant in participants. Responses to “I am someone who…” are on a 5-point Likert scale. Sample items include “is helpful and unselfish with others” for Agreeableness, “has an assertive personality” for Extraversion, “does things efficiently” for Conscientiousness, “worries a lot” for Neuroticism and “is curious about many different things” for Openness.

## Data Analysis

SPSS v24 was used for data cleaning and preliminary analyses. Structural equation modelling was carried out in MPlus 7.11 (Muthén & Muthén, 1998-2012). We tested separate sets of path analysis models for empathy (EC and PT), morality (moral self and integrity, and moral agency), and moral permissibility, all described below. For each outcome (empathy, morality, and moral permissibility), we first tested adult fiction and nonfiction, then YA fiction, and combined the significant predictors in a final model. Scores on the author recognition tests were allowed to covary. In each case, we started by including all five personality variables, but those with nonsignificant paths (*p* > .05) were not included in the final models. We tested each model first without and then with gender. Variables that were not normally distributed were transformed prior to analyses (details in SM). We report the models containing the author checklists tested in tables (see SM) for comparison purposes, but our final models only contain the significant predictors. All confidence intervals are bias-corrected and accelerated (*N* = 5000).

Model fit. Model fit was assessed with root mean square errors of approximation (RMSEA) and Tucker-Lewis non-normed index (TLI; Widaman & Thompson, 2003). RMSEA statistics with 90% confidence intervals that include .05 are considered acceptable fit; ideally, the interval will be entirely below .05 (MacCallum, Browne, & Sugawara, 1996). TLI offers an estimate of model fit that penalizes lack of parsimony. Standardized root mean square residuals are also reported (SRMSR; Bentler, 2007). Schwarz’s (1978) Bayesian Information Criterion (SBC) is also presented: lower values represent less information loss, and thus better models (note that it the values can only be directly compared when models have same variables). Because models cannot be compared directly, we took path significances, parsimony, and all indices into account, with special attention to RMSEA and TLI values, when choosing a final model to present.

Mediation. To approximate Mar and Oatley’s (2008) empathic simulation model, we tested for indirect effects of reading on morality via empathy (Figure 2). *Direct* effects refer to the relation (regression path or correlation) between two variables (*c* in Figure 2); indirect effects refer to an association between two variables that passes through one or more intervening variables (*ab* in Figure 2). Mediation is said to occur when (a) the predictor variable (reading) is significantly related to the outcome variable (moral identity); (b) the mediator (empathy) is significantly related to the outcome variable; and (c) the mediator significantly predicts the outcome variable in the presence of the predictor variable (Baron & Kenny, 1986). For “full mediation” to occur, the association between the predictor and outcome variables must be zero (non-significant and ideally close to zero) in the presence of the mediator. Indirect effects can happen even when condition (a) is not met; if the direction of the relation between predictor and outcome variables changes, it is a suppression model; if not it may be called inconsistent mediation or confounding (MacKinnon, Krull, & Lockwood, 2000). Here we test for indirect effects within the context of structural equation models and theory (empathic simulation; Mar & Oatley, 2008) using 95% confidence intervals around *ab* as criteria (if they do not contain zero, the indirect effect is significant).

# Results

## Preliminary Analyses

Gender differences. Women (*M* = 5.20, *SD* = 6.82) recognized more YA authors than did men (*M* = 1.83, *SD* = 2.20), *t*(255) =3.75, *p* <.001, *d* = 0.70. Women also had higher scores for empathic concern (*M*s= 3.94 vs. 3.61, *SD*s= 0.57 vs. 0.64, *t*(253) =3.67, *p* <.001, *d* =0.54), integrity (*M*s= 4.92 vs. 4.48, *SD*s= 0.62 vs. 1.01, *t*(62.62) =3.02, *p* =.004, *d* =0.52), Moral Agency (*M*s= 3.96 vs. 3.80, *SD*s= 0.43 vs. 0.51, *t*(252) =2.28, *p* =.024, *d* =0.33), and Neuroticism (*M*s= 3.16 vs. 2.58, *SD*s= 0.67 vs. 0.68, *t*(255) =5.55, *p* <.001, *d* =0.85). Men found more scenarios morally permissible on the Moral Judgment task (*M*s= 8.75 vs. 6.17, *SD*s= 4857 vs. 3.69, *t*(68.35) =3.61, *p* =.001, *d* =0.60).

Zero-order correlations. Participants who recognized more authors on one checklist tended to recognize more authors on the others (.22 ≤ *r* ≤ .42). Those who recognized more YA authors and adult fiction reported reading more books for pleasure per month (Spearman’s ρ =.30, 95% CI [.18, .41] and .21[.09, .34] respectively); there was no association for nonfiction (ρ =.10[-.03, .23]).. Recognition of YA authors had weak positive correlations with empathic concern (*r* =.15[.03, .26]), integrity (*r* =.18[.05, .31]), and moral agency (*r* =.18[.06, .30]). Recognition of adult fiction authors (ART) had similarly weak positive correlations with perspective-taking (*r* =.15[<.01, .29]) and moral permissibility (*r* =.16[.06, .27]). Recognition of nonfiction authors was weakly correlated with integrity (*r*= .12[.01, .23]), moral agency (*r* =.13[.01, .24]), and moral permissibility (*r* =.18[.07, .28]). See Table 3.

The big five personality factors of conscientiousness, extraversion, and agreeableness were not related to author recognition. Openness to experience was positively correlated with both adult fiction (*r* =.18, 95% CI [.04, .31]) and nonfiction (*r*= .18[.06, .29]). Neuroticism was positively correlated with YA fiction (*r*= .14[.02, .26]) and negatively related to nonfiction (*r*= -.15[-.26, -.03]). See Table 4.

## Primary Analyses

Empathy. We began by testing the relationship of adult fiction and nonfiction with empathic concern and perspective-taking, controlling for personality (extraversion and neuroticism were not significantly related to fiction exposure or either type of empathy and were dropped from the model). Nonfiction was not a significant predictor of empathy in any models (with and without Fiction and/or gender). Exposure to fiction was significantly related to perspective-taking (β =.146 95% CI [.034, .258]), but not empathic concern (β = .083[-.025, .190]); adding gender made little difference to model fit. Familiarity with YA authors was related to empathic concern (β =.117[.010, .224]) but not perspective-taking (β =.102[-.012, .215]). Finally, we tested both adult and YA Fiction in the same model to explore their joint effect; this final model also fit the data well, χ2(*df*=7)=5.05, *p* =.654, RMSEA < .001, 90% CI [<.001, .062], CFI =1.00, TLI =1.03 (see Figure S1 in SM). The addition of gender worsened model fit but did not change the relationships between reading and empathy. See Table S1 in SM.

Morality. We began by testing the relationship between adult fiction and nonfiction and integrity, moral self, and moral agency, controlling for personality. Successive models are described in detail in SM. Nonfiction was not significantly related to any of the moral variables. Fiction exposure was related to Integrity (β =.122, 95% CI [.014, .230]), but not Moral Self or Moral Agency, and only when all nonsignificant predictors (personality and gender) were not included in the model. YA fiction significantly predicted Integrity (β =.189[.083, .296]) and Moral Agency (β =.181[.071, .290]), but not Moral Self (β =.047[-.055, .149]). Adding gender worsened model fit but did not change the correlations. In our final model, YA fiction was related to integrity (β =.192[.086, .298]) and moral agency (β =.176[.067, .284]), and fit was excellent, χ2(*df*=4)=1.21, *p* =.876, RMSEA < .001, 90% CI [<.001, .047], TLI = 1.04.[[2]](#footnote-2) (Table S2 and Figure S2).

Moral permissibility. In separate models, both fiction (β =.14, 95% CI [.03, .26]) and nonfiction (β =.17[.05, .28]) predicted moral permissibility; adding gender to the models did not alter the effect appreciably, but it made the model fit worse for fiction, and better for nonfiction. YA fiction predicted moral permissibility only when gender was controlled, and the effect was smaller (β =.12[.003, .24]). Given the stronger and more reliable association of Nonfiction, we judged this model the best overall (See Table S3 and Figure S3).

## Indirect effects

Mar and Oatley’s (2008) theory of empathic simulation suggests that the primary effects of reading occur via reader engagement with fictional characters; by taking the perspective of and/or empathically feeling with characters, readers practice social cognition. As such, it could be that although there were no direct association between reading exposure and moral self, an indirect effect via empathy may be present. We therefore considered two models, the first testing the indirect effect of adult fiction exposure on Moral Self via Perspective-taking, and the second testing the indirect effect of YA fiction on Moral Self via Empathic Concern (EC). We also tested the two corresponding mediation models, with empathy mediating the effect of fiction on integrity.

Adult fiction. Controlling for Agreeableness (which predicted Perspective-taking, β =.36, *p* <.001) and Openness (which predicted Fiction exposure, β =.18, *p* =.003), Fiction exposure was significantly related to Perspective-taking (β =.15, *p* =.005), which was in turn related to a stronger sense of Moral Self (β =.30, *p* <.001). Perspective-taking fully mediated the relationship between Adult fiction exposure and Moral Self, *ab* =.044, 95% CI [.006, .081]. Similarly, perspective-taking fully mediated the association between adult fiction and integrity, *ab* =.039[.005, .073]. See Table 5 for all coefficients.

YA fiction. Controlling for predictors of Empathic concern (Openness: β =.15, *p* =.007; Agreeableness: β =.50, *p* <.001; Neuroticism: β =.18, *p* =.002) and Neuroticism (which predicted YA Fiction exposure, β =.14, *p* =.027), YA Fiction exposure was significantly related to Empathic Concern (β =.12, *p* =.036), which was in turn related to a stronger sense of Moral Self (β =.39, *p* <.001). Empathic Concern fully mediated the relationship between YA fiction and Moral Self, *ab* =.044, 95% CI [.001, .087], and partially mediated the association between YA fiction and Integrity, *ab* =.055[.013, .097].

# Discussion

Study 1 results suggested weak but significant associations between reading and morally relevant traits such as empathy, integrity, and moral agency, as well as moral permissibility. It is important to note that despite the fact that all of our outcome measures assess morality, they tap distinct moral constructs. Correspondingly, although our three author recognition tests all had broadly similar correlations with the moral measures (the strength, but not the direction, of the associations varied), there were important differences. Familiarity with authors of fiction targeted at adults was related to perspective-taking, but not empathic concern, while the reverse pattern was found for familiarity with authors of young adult fiction. Both adult and YA fiction were related to integrity (the desire for consistency between moral principles and actions), but only YA fiction was related to perceived moral agency.

In line with theories that propose empathic simulation as a function of fiction (Mar & Oatley, 2008), adult fiction was related to the sense of moral self wholly through perspective-taking, which also fully mediated the association between adult fiction and integrity. Similarly, YA fiction exposure and moral self were only related indirectly, via empathic concern, which partially mediated the association between YA fiction and integrity. Adult fiction, young adult fiction, and nonfiction were all related to moral permissibility (see Black et al., 2017), though in the case of YA fiction, this was only true when controlling for gender. In this sample, the effects depended on the type of reading material (adult vs. young adult fiction and nonfiction), but the direction and magnitude of the effects were similar across genres.

Study 1 suggested that reading may work as a Moral Laboratory. At the same time, familiarity with all three types of reading material was related to slightly greater moral permissibility; perhaps in some cases, and/or regarding certain types of morality, Moral Boundary Erosion can also occur. These results were intriguing, but given the effect sizes found, the sample size was small. Power analyses based on an effect size of *r* = 12 for zero-order correlations (the weakest statistically significant correlations found in Study 1) indicated a need for *N*= 425 for power of .80. The purpose of Study 2 was to confirm these results in a pre-registered study (<https://osf.io/y39r4>) with sufficient power to find an effect of *r* = .12.

# Study 2

Based on the results of Study 1, we made the pre-registered hypotheses described below. For all models, we included gender when preliminary analyses revealed differences significant at *p* <.05 and personality when initial model paths significant at *p* <.10 (results with excluded variables also reported when different).

Empathy. We expected recognition of YA authors to be positively related to empathic concern and that of adult fiction authors to be positively related to perspective-taking, both separately and in the same model (controlling for personality and gender where appropriate). Dependent on these hypotheses being confirmed, we hypothesized two mediation models: we expected empathic concern to fully mediate the association between YA fiction exposure and Moral Self, and perspective-taking to fully mediate the association between adult fiction exposure and Moral Self.

Morality. We expected exposure to adult fiction to be directly and positively correlated with Integrity but not Moral Self or Moral Agency (in the same model). We predicted a significant positive direct association between YA fiction exposure and Integrity and Moral Agency but not Moral Self. We did not expect exposure to nonfiction to be directly related to any of the three moral traits. Finally, we predicted a positive correlation between all three author recognition tests and moral permissibility.

# Method

As in Study 1, an online survey was offered to introductory psychology students at the same university in exchange for course credit; this study was included with a second project that also required *N* = 425. To meet the demands of a large departmental subject pool, 469 students completed the research, but 22 were excluded on the basis of excessive guessing on the author recognition tests, and 21 were excluded for spending less than 10 seconds per questionnaire. The final sample was *N* = 426 (78.9% female, 90.8% under the age of 20, 62.2% moderately to very conservative). The sample was majority white (72.9%), 4.7% African American, 7.8% Asian, 1.7% Native American, 0.4% Pacific Islander, 6.8% Hispanic, and 5.7% two or more. Most were 18 years old (65.7%); 25.1% were 19; 5.2% were 20; the remaining 4.0% were 21 and older. The sample was majority conservative: 30.0% were conservative or very conservative, 32.2% moderately conservative, 22.3% moderately liberal, and 15.5% were liberal or very liberal.

Participants completed the same measures described in Study 1, with the exception of the Moral Judgment Task, which was answered on a 4-point scale (*Never* to *Always*) rather than yes/no. See Table 1 for descriptive statistics and scale reliability. Data analyses were carried out as in Study 1; all materials, data, and MPlus code available for both studies at <http://bit.ly/2m5X7SQ>

# Results

## Preliminary Analyses

Gender differences. Women recognized more authors than did men, both for adult (*M*s= 2.08 vs. 1.29, *SD*s= 2.03 vs. 1.29, *t*(424) =3.39, *p* =.001, *d* =0.42) and YA (*M*s= 4.35 vs. 1.83, *SD*s= 4.93 vs. 2.32, *t*(424) = 6.93, *p* <.001, *d* =0.65) fiction. Women also had higher scores for empathic concern (*M*s= 3.92 vs. 3.59, *SD*s= 0.63 vs. 0.59, *t*(424) =4.54, *p* <.001, *d* =0.55), integrity (*M*s= 3.99 vs. 3.81, *SD*s= 0.54 vs. 0.57, *t*(454) = 2.73, *p* =.007, *d* =0.32), Moral Self (*M*s= 4.20 vs. 4.07, *SD*s= 0.41 vs. 0.43, *t*(424) =2.79, *p* =.006, *d* =0.33), and Neuroticism (*M*s= 3.15 vs. 2.71, *SD*s= 0.72 vs. 0.61, *t*(454) =5.31, *p* <.001, *d* =0.66). Men were also more morally permissible (*M*s= 1.79 vs. 1.57, *SD*s= 0.37 vs. 0.30, *t*(454) =6.07, *p* <.001, *d* =0.68).

Zero-order correlations. All three author recognition tests were positively correlated (.28 ≤ *r* ≤ .51). YA fiction scores had weak positive correlations with empathic concern (*r* = .16, 95% CI [.07, .26], integrity (*r* =.12[.02, .21]), and moral agency (*r* =.15[.06, .24]). In this study, the association between adult fiction scores and empathic concern (*r* =.10[< .01, .19]) and perspective-taking (*r* =.09[-.01, .19]) were similar, although the correlation with perspective-taking was not significant; they had positive correlations with perceived moral agency (*r* = .14[.05, .24]). Recognition of nonfiction authors was positively related to perspective-taking (*r* = .14[.05, .22]) and moral permissibility (*r* =.11[.01, .21]). See Table 6.

As in Study 1, the big five personality factors of conscientiousness and agreeableness were not related to author recognition; in this study Extraversion was negatively correlated with both adult and YA fiction author checklists. Openness to experience was positively correlated with adult fiction and nonfiction. Neuroticism was positively correlated with both adult and YA fiction scores. See Table 4.

## Primary Analyses

Empathy. Our hypotheses regarding empathy were only partially confirmed. Controlling for Agreeableness, Extraversion, and Neuroticism, YA author exposure was positively related to empathic concern, β =.12 95% CI [.04, .20] (with gender: β =.09[.01, .18]). What is more, empathic concern fully mediated the association between YA author recognition and Moral Self, *ab* =.05[.01, .09] (without gender). However, adult fiction was not related to perspective-taking (controlling for Openness, Agreeableness, and Extraversion: β =.04[-.05, .12); accordingly, the proposed indirect effect of adult fiction on moral self via perspective-taking and the model including both YA and adult fiction were not confirmed. Surprisingly, recognition of Nonfiction authors was also related to perspective-taking (though not empathic concern), controlling for Openness, β =.10[.01, .20]. In light of this association, we tested for an indirect effect of Nonfiction on Moral Self via Perspective-taking on an exploratory basis; the effect was significant, *ab* =.030[.003, .058]. Empathy also fully mediated the relation between reading (EC for YA fiction and PT for nonfiction) and integrity. See Table 5 for all indirect effects and Table S4 for all models and fit indices.

Model Comparison. We compared all the hypothesized models to alternates in which the causal order was reversed. Because of the nature of the models, in most cases they were essentially the same. The exceptions were the mediation models. We reversed the causal order of our original model (with and without gender), such that empathic concern predicted YA fiction which in turn predicted Moral self; although the indirect effects were still significant, the models fit the data much worse by all criteria (see Table S5). When we switched the mediator, such that YA fiction exposure mediated the relationship between empathic concern and moral self, the indirect effect was no longer significant, and the model fit was poor.

Morality. Once again, hypotheses regarding familiarity with YA authors were confirmed whereas those regarding adult fiction and nonfiction were not. Controlling for all five personality factors, YA fiction exposure was related to Integrity (β =.12, 95% CI [.04, .21]) and Moral Agency (β =.17[.08, .25]) but not Moral Self (β =.05[-.04, .14]).[[3]](#footnote-3) Further analyses revealed a significant positive relationship between Adult Fiction exposure and Moral Agency (β =.12[.04, .20]) but not Integrity (β =.08[-.01, .16]) or Moral Self (β =.02[-.07, .11]); including gender in the model did not change the relationships. As expected, exposure to Nonfiction was not significantly related to any of the three moral traits. See Table S6.

Model comparison. Again, we compared our hypothesized models concerning reading and moral traits to alternates in which the causal order was reversed. All of the alternate models fit the data much worse (Table S7).

Moral Permissibility. We had predicted a positive correlation between exposure to all three author checklists and moral permissibility, but this was only true for Adult Fiction. Controlling for gender and all personality factors but Neuroticism, greater familiarity with Adult Fiction authors was associated with greater moral permissibility, β =.13, 95% CI[.04, .22].[[4]](#footnote-4) Neither YA fiction exposure (β = -.07[-.16, .02]) nor Nonfiction exposure (β =.08[-.01, .18]) were significantly associated with moral permissibility. See Table S8.

# Discussion

Study 2 was carried out as a pre-registered replication of Study 1. Given the small effect sizes, it is not surprising that our hypotheses were only partially confirmed, especially in light of Mumper and Gerrig’s (2017) meta-analysis: the relationship between different aspects of empathy and reading exposure, although apparently reliable, seems to be weak. Whereas in Study 1 we found a positive correlation between Adult Fiction and perspective-taking, which in turn fully mediated the association between reading and Moral Self, that relationship was not evident in Study 2 (but the same models *were* significant for Nonfiction). Importantly, the effects are very similar across the two studies. Most hypotheses concerning YA fiction were confirmed: it was related to Integrity, Moral Agency, and Empathic-concern, and Moral Self via Empathic concern. As in Study 1, it seems that there are important differences amongst the moral constructs that are differentially related to reading. In all cases where model comparison was meaningful, our hypothesized models fit the data much better than alternates in which the causal order was reversed.

# General Discussion

The purpose of this research was to explore the relationship between different types of reading exposure and morality. We used the Author Recognition Test paradigm to develop an assessment of fiction exposure that targeted the type of books underclasspersons are most likely to have read for pleasure in recent years (the Young Adult Fiction Test), and an established instrument to measure exposure to adult fiction and nonfiction (Mar et al., 2006). To assess morality, we used several measures that tap distinct moral constructs. Although the general association of reading and all aspects of morality was similar (more reading meant higher scores on moral scales but also greater moral permissibility), there were important differences in correlations that depended on the moral construct and the type of reading. In both studies, YA fiction exposure was positively correlated with empathic concern, integrity, and moral agency; it was indirectly related to moral self via empathic concern. The correlation between adult fiction exposure and moral permissibility was also consistent across samples, with people who recognized more authors reporting greater moral permissibility. Other relationships with adult fiction and nonfiction varied (see Table 7 for comparisons of effects in Studies 1 and 2), possibly because undergraduate samples such as the current ones are more likely include participants whose leisure reading includes YA rather than adult fiction or nonfiction authors. Although they were not all statistically significant, empathy-reading correlations were positive and in line with the effect sizes reported in Mumper and Gerrig’s (2017) meta-analysis. It is interesting to note that there were indirect effects of reading via empathy on Moral Self for adult fiction in Study 1 and nonfiction in Study 2, due to the varied strength of the correlations between empathy (perspective-taking) and reading exposure. Perspective-taking also fully mediated the association of reading adult fiction (Study 1) and nonfiction (Study 2) with Integrity; empathic concern partially (Study 1) or fully (Study 2) mediated the effect of reading YA fiction on Integrity.

## Fiction as Moral Laboratory

The indirect effects on moral identity—Moral Self was related to reading entirely through empathy, and the direct association between Integrity and reading was fully mediated by empathy (with the exception of the partial mediation for YA fiction in Study 1)—provide strong support for the potential of Mar and Oatley’s (2008) empathic simulation theory to explain *moral* effects of fiction exposure. Fiction, according to simulation theory, provides readers with the opportunity to learn about social interactions by giving them special insight into the thoughts, emotions, and intentions of characters; this knowledge of social cognition is assumed to transfer to real world theory of mind ability (Black & Barnes, 2015; Mar et al., 2009; Panero et al., 2016). Of course, proficient understanding of social cognition could also be used to manipulate people, but our results suggest that, on the whole, it relates to a small but reliable effect of increasing morality, inasmuch as we assume that a strong sense of moral self and integrity are moral.

Integrity was also directly and positively correlated with reading. In both studies, recognition of more YA authors meant higher scores on the Integrity scale, and the direction of the relationship was the same for adult fiction in both samples (as was that for nonfiction in Study 2). In line with prior research (Bal & Veltkamp, 2013; Mumper & Gerrig, 2017), we found a positive correlation between empathy and reading in both studies; for YA fiction it was stable across the two. The direct effect of reading on empathy was a necessary component of the mediation models described above, but it also supports the theory of fiction as Moral Laboratory more directly (assuming that empathy is moral; see Bloom, 2016).

Results of both studies suggest that there may be an interesting association between perceived moral agency and reading, particularly YA fiction. Adult fiction was significantly related to Moral Agency in the first but not second sample; however, the correlation in Study 2 was *r* =.09; for Nonfiction, the correlations and associated *p*-values were .13 and .09 for the respective studies. YA fiction exposure was related to Moral Agency in both samples; the lack of relationship with adult fiction may simply reflect the young sample: many participants may not have been exposed to enough adult fiction (especially literary fiction, outside of academic curricula), or if they have been exposed, the dosage—how much they have read—might be much smaller. If this is the case, then carrying out a similar study in an adult population may reveal associations between familiarity with adult fiction (as assessed by Mar et al.’s [2006] ART) and moral traits. Alternatively, it could be that there is something special about YA fiction, with its focus on plot and action, and protagonists with a strong sense of purpose that reflects perceived moral agency: they know what is right or wrong, and act decisively. It is possible that reading such fiction encourages a sense of moral agency, but it is equally likely that readers who respect people who feel they are in full control of their moral behavior choose books that feature such characters. Teenagers (our sample was primarily under 20) who are searching for their own sense of identity (Schwartz, Zamboanga, Luyckx, Meca, & Ritchie, 2013) may be particularly drawn to strong, decisive protagonists. Prior research suggests that stage of moral development affects how readers extract and recall moral content from texts (Narvaez, 2001; Narvaez & Gleason, 2007); it may be that individual differences in moral constructs influence what books—if any—people choose to read for pleasure.

## Moral Boundary Erosion

Interestingly, in light of the famed tendency of teenagers to push boundaries, recognition of YA authors does not appear to be related to moral permissibility. There was a weak positive correlation in Study 1, but only after controlling for gender, and in Study 2, the association was not significant and in the opposite direction. Thus, we found little to no evidence of a relationship between exposure to YA fiction and moral permissibility. In contrast, Moral Permissibility was related to Adult Fiction in both studies; the more authors participants recognized, the more scenarios they found morally permissible. In this study, the effect was small but significant, even controlling for gender and personality. Our results suggest that there may also be a small positive association between moral permissibility and nonfiction. Nonfiction exposure was also related to openness to experience in both studies (see also Mar et al., 2009); it may be that the intellectual curiosity that drives people to read nonfiction also allows them to consider conditional or counterfactual explanations that would make the scenarios on the moral judgment task permissible (see Shtulman & Tong, 2013). What is more, even expository nonfiction (such as much of that written by the authors on the checklist used here) contains elements of narrative; Koopman and Hakemulder (2015) suggest that it is narrativity rather than fictionality that is driving the reported effects. If this is true, there may be an even stronger relationship between narrative nonfiction, such as biography, and morality. Further research is merited.

## The Importance of Young Adult Fiction

A vital part of this research was the addition of a measure of author recognition that assessed exposure to young adult fiction, both because many psychological studies use undergraduate samples and because of the unique, plot-driven, emotional, and character-focused nature of YA novels. We developed the YAFT because we believed familiarity with YA authors would be more likely to capture leisure reading in young adulthood; what we had not considered is that this reading—and the relationship between familiarity with YA authors and moral variables—may reflect the changing nature of emerging adulthood. Arnett (2000) argues that emerging adulthood (ages 18-25) represents a distinct demographic of those who are experiencing independence for the first time, and are carving out an identity separate from that of their parents. As such, this age group—to which our samples belong—is most likely to be pushing boundaries and exploring different identities; agency, including moral agency, is front and center at this time of life when the consolidation of moral character is fundamental. Importantly, whereas the familiarity with the adult fiction authors may reflect the influence of parents (who may read Nora Roberts and Nicholas Sparks) and school (the most frequently recognized ART author was Ray Bradbury; *Fahrenheit 451* is a high school curricula staple), familiarity with YA authors is more likely to reflect true leisure reading—books and book series selected because of reader identification with the characters and themes. Following this logic, it may be that college undergraduate samples provide the ideal time to test the relationship between reading and morality, especially if reading is measured with a list of authors, they have freely chosen to read over the past few years. In this research, the associations between YAFT scores and morality were much more reliable than those between adult reading and morality; this undoubtedly reflects the suitability of the instrument for the samples, both composed primarily of late-teenagers, as well as any special characteristics of YA fiction.

## Limitations and recommendations for future research

Using checklists to measure reading exposure has the advantage of limiting socially desirable responding. It also allows greater flexibility because respondents need not have *read* the authors: they are assumed to recognize unread authors because these will be shelved in the same sections and/or recommended by online sellers based on shopping cart contents. However, with online surveys, participants could potentially look up the authors. We recommend researchers measure response time and use it for data cleaning when indicated. Although excluding response times greater than 3.5 *SD*s above the mean did not alter results in our studies, it is possible it could do so, particularly in smaller samples.

It is also important to adapt the checklists to suit research questions and to include current authors. New YA authors should be added as they publish, and any authors that branch into adult genres should be excluded in future studies. The YAFT could also be adapted to target specific genres. For example, researchers wishing to investigate the effect of reading romances specifically could present a list composed primarily of YA romance authors (possibly within difference genres; e.g., paranormal, fantasy…) to better measure YA romance exposure (see Black et al., 2017). Researchers who wish to specifically target leisure reading may also want to ask participants to select only authors that they read for pleasure, or target new YA authors who are unlikely to be included on reading lists. Although we excluded authors of classic YA fiction, such as S. E. Hinton, Lois Lowry, or Louisa May Alcott, it is possible that some participants encountered one or more of our authors in school. Similarly, researchers may want to exclude authors whose books have been made into popular films, such as John Green and Suzanne Collins. One of the strengths of the author recognition paradigm is that it allows tailoring measures to research hypotheses in this fashion.

## Concluding remarks

In summary, we have made two important contributions to the literature on reading exposure: we expanded investigation of the effects of narrative to include moral traits and judgment and we introduced a new instrument that measures familiarity with young adult authors. By testing the association of book exposure to different moral constructs, we wanted to compare and contrast two competing theories: Does fiction function as a Moral Laboratory, encouraging greater moral awareness? Or is it more apt to cause Moral Boundary Erosion by encouraging readers to imagine circumstances where normally taboo or impermissible acts could be morally acceptable? Fascinatingly, the results of our two studies suggest if may have the potential to do both.

This research provides support for the idea that there is a relationship between morality and what one reads, with the particulars of that relationship varying across the categories of nonfiction, fiction, and young adult fiction, although the effect is unlikely to be strong. Supporting theories of empathic simulation, our results suggest that empathy may mediate the association between reading and moral identity. Future research is needed to test this theory with an experimental, rather than correlational design. Simultaneously, however, the fact that exposure to YA fiction was a more reliable predictor than exposure to adult fiction may point to the importance of reading for pleasure—rather than in educational contexts—for moral development. Although our participants may have encountered some of our authors on school reading lists, they are much more likely to also read YA novels on their own initiative, as these are written for and marketed to their age group. Hence, subsequent research examining the effects of reading on morality may benefit from integrating some level of reader choice. Interestingly, given the perennial worry that fiction may corrupt morals, to the extent that we did find a relationship between fiction and moral traits, reading (specifically YA fiction) was associated with greater integrity, moral agency, and moral self (via empathy), which are positively related to real-world moral behavior. The contrasting association with moral permissibility provides avenues for future research on moral psychology, communication, and the effects of reading.

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| Table 1*Mean, standard deviation, and range for all variables in Studies 1 and 2.* |
|  | **Study 1** |  |  |  |  | **Study 2** |  |  |  |  |
|  | **α** | ***M*** | ***SD*** | **Median** | **Range** | **α** | ***M*** | ***SD*** | **Median** | **Range** |
| YA Fiction | .90 | 4.50 | 5.84 | 3.00 | 41.00 | .93 | 4.06 | 4.76 | 3.00 | 47.00 |
| Fiction | .80 | 2.97 | 2.84 | 2.00 | 18.00 | .88 | 1.91 | 1.99 | 1.00 | 11.00 |
| Nonfiction | .78 | 1.91 | 1.99 | 1.00 | 12.00 | .89 | 1.00 | 1.31 | 1.00 | 8.00 |
| Empathic Concern | .78 | 3.87 | 0.60 | 3.86 | 3.00 | .81 | 3.85 | 0.64 | 3.86 | 3.57 |
| Perspective-taking | .78 | 3.65 | 0.59 | 3.71 | 3.43 | .78 | 3.63 | 0.63 | 3.57 | 3.57 |
| Integrity | .89 | 4.83 | 0.74 | 4.83 | 4.42 | .86 | 3.95 | 0.55 | 4.00 | 2.75 |
| Moral Self | .79 | 5.03 | 0.59 | 5.00 | 4.00 | .74 | 4.17 | 0.41 | 4.13 | 2.13 |
| Moral Agency | .83 | 3.93 | 0.45 | 3.93 | 2.33 | .86 | 3.93 | 0.45 | 3.93 | 2.33 |
| Moral Judgment | .82 | 6.70 | 4.09 | 6.00 | 22.00 | .82 | 1.61 | 0.33 | 1.56 | 2.28 |
| Openness | .77 | 3.43 | 0.55 | 3.40 | 3.30 | .76 | 3.37 | 0.54 | 3.40 | 2.90 |
| Conscientiousness | .81 | 3.67 | 0.58 | 3.67 | 2.89 | .78 | 3.61 | 0.53 | 3.61 | 3.00 |
| Extraversion | .87 | 3.17 | 0.78 | 3.25 | 3.63 | .86 | 3.25 | 0.71 | 3.25 | 3.88 |
| Agreeableness | .77 | 3.84 | 0.53 | 3.89 | 3.00 | .75 | 3.75 | 0.49 | 3.78 | 2.89 |
| Neuroticism | .82 | 3.04 | 0.71 | 3.00 | 3.38 | .83 | 3.05 | 0.72 | 3.00 | 3.50 |
| *Note.* Integrity and Moral self are answered on a 6-point scale for Study 1, 5-pt for Study 2; Empathic concern, perspective-taking, Moral Agency, and the Big Five traits were all answered on a 5-pt scale in both. In all cases, strongly disagree = 1. For YAFT, Fiction, and nonfiction, means for number of correct author names selected is reported. For Study 1, responses to the Moral Judgment Task (MJT) were Yes (=1) and no (=0); total sums are reported. For Study 2, responses were on a 4-pt scale (*never* to *always*). |

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| Table 2*Authors on the Young Adult Fiction Test (YAFT).* |
| A.S. King | Erin Bow | Laura Ruby | Rae Carson |
| Adam Silvera | Francisco X. Stork | Lauren Myracle | Rainbow Rowell |
| Alexandra Bracken | Gayle Forman | Lauren Oliver | Ransom Riggs |
| Alisha Saeed | Holly Black | Laurie Halse Anderson | Renee Ahdieh |
| Ally Carter | James Dashner | Leigh Bardugo | Robyn Schneider |
| Ally Condie | Jandy Nelson | Libba Bray | Ruta Sepetys |
| Amanda Hocking | Jason Reynolds | Maggie Stiefvater | Ryan Graudin\* |
| Amie Kaufman | Jay Asher | Malinda Lo | Sabaa Tahir |
| Andrew Smith | Jennifer Donnelly | Margaret Stohl | Sara Zarr |
| Barry Lyga\* | Jennifer E. Smith | Marie Lu | Sarah Dessen |
| Becca Fitzpatrick | Jennifer Niven\* | Marieke Nijkamp\* | Sarah J Maas |
| Beth Revis | Jenny Han | Marissa Meyer | Sarah Rees Brennan |
| Brenna Yovanoff | Jessica Brody | Mary E Pearson | Scott Westerfeld |
| Carrie Ryan | John Green | Matt de la Pena | Simone Elkeles |
| Cassandra Clare | Julie Kagawa | Maureen Johnson | Siobhan Vivian |
| Christopher Paolini | Julie Murphy | Meg Medina | Stephanie Perkins |
| Cinda Williams Chima | Justine Larbalestier\* | Megan Spooner | Susan Dennard |
| Claudia Gray | Kami Garcia | Melina Marchetta\* | Susan Ee |
| Coe Booth\* | Katie Alender\* | Morgan Matson | Susane Colasanti |
| Courtney Summers | Kekla Magoon\* | MT Anderson | Suzanne Collins |
| Cynthis Leitich Smith | Kendare Blake | Neal Shusterman | Suzanne Young |
| Danielle Paige | Kiera Cass | Nicola Yoon | Tahera Mafi |
| David Levithan | Kiersten White | Nikki Grimes | Tamora Pierce |
| E. Lockhart | Kimberly Derting | Nova Ren Suma\* | Veronica Rossi |
| Elizabeth Eulberg | Kody Keplinger | Rachel Cohn | Veronica Roth |
| Elizabeth Wein | Kristin Cashore | Rachel Hartman | Victoria Aveyard |
| Emery Lord | Laini Taylor | Rachel Hawkins | Walter Dean Meyers |
| *Note.* \*Ten names were not included in 98 because once outliers had been eliminated, they had not been selected. The authors advise including all 108 names in the measure, and dropping names that have zero variance. |

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| Table 3.*Study 1. Zero-order correlations between familiarity with fiction (YA authors, adult fiction and nonfiction [Mar et al., 2006]), empathy (empathic concern and perspective-taking), morality (integrity, moral self, and moral agency), and moral judgment.* |
|  | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** |
| 1. YA Fiction
 | --  | .405\*\*\* | .218\*\*\* | .145\* | .048 | .183\*\* | .051 | .180\*\* | .059 |
| 1. Fiction
 |  | -- | .420\*\*\* | .102 | .148\* | .118 | .047 | .094 | .193\*\* |
| 1. Nonfiction
 |  |  | -- | .072 | .098 | .123\* | .092 | .126\* | .170\*\* |
| 1. Empathic concern
 |  |  |  | -- | .473\*\*\* | .383\*\*\* | .390\*\*\* | .315\*\*\* | -.112 |
| 1. Perspective-taking
 |  |  |  |  | -- | .261\*\*\* | .328\*\*\* | .302\*\*\* | .031 |
| 1. Integrity
 |  |  |  |  |  | -- | .553\*\*\* | .568\*\*\* | -.189\*\* |
| 1. Moral Self
 |  |  |  |  |  |  | -- | .478\*\*\* | -.100 |
| 1. Moral Agency
 |  |  |  |  |  |  |  | -- | .003 |
| 1. Moral Permissibility
 |  |  |  |  |  |  |  |  | -- |
| *Note.* \**p* <.05; \*\**p* <.01; \*\*\**p* <.001. *N* = 257. |  |

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| Table 4*Zero-order correlations between the five personality factors, exposure to fiction, and morally relevant constructs.* |
|  | **Openness** | **Conscientiousness** | **Extraversion** | **Agreeableness** | **Neuroticism** |
| Study 1 |  |  |  |  |  |
| YA Fiction | .076 | .022 | -.073 | -.027 | .140\* |
| Fiction | .182\*\* | -.050 | -.030 | .007 | .012 |
| Nonfiction | .181\*\* | .029 | -.007 | .092 | -.150\* |
| Empathic concern | .172\*\* | .198\*\* | .139\* | .462\*\*\* | .028 |
| Perspective-taking | .163\*\* | .159\* | .090 | .340\*\*\* | -.090 |
| Integrity | .063 | .331\*\*\* | -.011 | .409\*\*\* | .101 |
| Moral Self | .144\* | .289\*\*\* | .127\* | .553\*\*\* | -.072 |
| Moral Agency | .044 | .419\*\*\* | .021 | .270\*\*\* | -.101 |
| Moral Permissibility | .200\*\* | -.093 | -.028 | -.211\*\*\* | -.017 |
| Study 2 |  |  |  |  |  |
| YA Fiction | .070 | -.062 | -.150\*\* | -.026 | .185\*\*\* |
| Fiction | .131\*\* | -.012 | -.130\*\* | .032 | .114\* |
| Nonfiction | .160\*\* | -.016 | .009 | .028 | .040 |
| Empathic concern | .170\*\*\* | .140\*\* | -.012 | .401\*\*\* | .168\*\*\* |
| Perspective-taking | .237\*\*\* | .175\*\*\* | -.065 | .332\*\*\* | -.029 |
| Integrity | .150\*\* | .332\*\*\* | .070 | .335\*\*\* | -.041 |
| Moral Self | .199\*\*\* | .248\*\*\* | .095† | .331\*\*\* | -.025 |
| Moral Agency | .278\*\*\* | .391\*\*\* | .040 | .325\*\*\* | -.118\* |
| Moral Permissibility | .092 | -.115\* | -.011 | -.114\* | .028 |
| *Note. \*p* <.05; *\*\*p* <.01*; \*\*\*p* <.001*.* |

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| Table 5*Indirect effects (*ab*) of reading on moral identity (moral self and integrity) via empathy (empathic concern or perspective-taking), along with the paths between reading and empathy* (a) *and empathy and moral identity* (b) *and 95% confidence intervals. There were no significant direct effects (*c *paths) between reading and moral self, or between reading nonfiction and integrity (Study 2).* |
|  |  | 95% CI |  | 95% CI |  | 95% CI |
| **Model** | ***ab*** | **LL** | **UL** | ***a*** | **LL** | **UL** | ***b*** | **LL** | **UL** |
| Study 1 |  |  |  |  |  |  |  |  |  |
| YA Fiction—EC—Moral Self | .044 | .001 | .087 | .115 | .008 | .222 | .386 | .282 | .491 |
| Fiction—PT—Moral Self | .044 | .006 | .081 | .146 | .034 | .257 | .300 | .187 | .413 |
| YA Fiction—EC—Integrity\* | .055 | .013 | .097 | .152 | .044 | .259 | .363 | .257 | .469 |
| Fiction—PT—Integrity | .039 | .005 | .073 | .145 | .033 | .257 | .268 | .154 | .383 |
| Study 2 |  |  |  |  |  |  |  |  |  |
| YA Fiction—EC—Moral Self | .051 | .014 | .089 | .120 | .037 | .203 | .428 | .351 | .506 |
| Nonfiction—PT—Moral Self | .030 | .003 | .058 | .104 | .016 | .192 | .292 | .205 | .379 |
| YA Fiction—EC—Integrity | .047 | .014 | .080 | .120 | .037 | .203 | .389 | .308 | .471 |
| Nonfiction—PT—Integrity | .027 | .002 | .051 | .104 | .016 | .192 | .257 | .169 | .346 |
| *Note.* Standardized coefficients presented for *ab, a, b.* \*Empathic concern only partially mediated the association between YA fiction and Integrity (the *c*’ path was still significant); in all other models with integrity as outcome, empathy fully mediated the association between reading and integrity. Complete cases used for all analyses. |

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| Table 6*Study 2. Zero-order correlations between familiarity with fiction (YA authors, adult fiction and nonfiction [Mar et al., 2006]), empathy (empathic concern and perspective-taking), morality (integrity, moral self, and moral agency), and moral permissibility.* |
|  | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** |
| 1. YA Fiction
 | --  | .511\*\*\* | .277\*\*\* | .162\*\* | .083 | .116\* | .057 | .152\*\* | -.068 |
| 1. Fiction
 |  | -- | .365\*\*\* | .097\* | .090 | .095† | .051 | .144\*\* | .079 |
| 1. Nonfiction
 |  |  | -- | .026 | .139\*\* | .051 | .040 | .094 | .105\* |
| 1. Empathic concern
 |  |  |  | -- | .551\*\*\* | .399\*\*\* | .429\*\*\* | .357\*\*\* | -.151\*\* |
| 1. Perspective-taking
 |  |  |  |  | -- | .257\*\*\* | .292\*\*\* | .297\*\*\* | .022 |
| 1. Integrity
 |  |  |  |  |  | -- | .546\*\*\* | .508\*\*\* | -.267\*\*\* |
| 1. Moral Self
 |  |  |  |  |  |  | -- | .352\*\*\* | -.220\*\*\* |
| 1. Moral Agency
 |  |  |  |  |  |  |  | -- | -.100\* |
| 1. Moral Permissibility
 |  |  |  |  |  |  |  |  | -- |
| *Note.* \**p* <.05; \*\**p* <.01; \*\*\**p* <.001; †*p* = .050. *N* = 426 for all analyses but those with Moral Judgment (*N* = 417). |  |

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| Table 7*Correlations between reading exposure and empathy, morality, and moral judgment in the two studies (controlling for gender and personality).* |
|  | **Study 1** |  | **Study 2** |  |
|  | **β** | ***p*** | **β** | ***p*** |
| Empathy |  |  |  |  |
| Empathic concern—Fiction | .068 | .210 | .023 | .604 |
| Empathic concern—Nonfiction | .032 | .565 | .006 | .894 |
| Empathic concern—YAFTa | **.117** | **.031** | **.103** | **.015** |
| Perspective-taking—Fictiona | **.146** | **.011** | .036 | .430 |
| Perspective-taking—Nonfiction | .054 | .353 | **.106** | **.018** |
| Perspective-taking—YAFT | .102 | .079 | .062 | .172 |
| Morality |  |  |  |  |
| Integrity—Fictiona | .101 | .064 | .071 | .110 |
| Integrity—Nonfiction | .094 | .085 | .052 | .235 |
| Integrity—YAFTa | **.146** | **.009** | **.122** | **.005** |
| Moral Self—Fiction | .040 | .440 | .007 | .879 |
| Moral Self—Nonfiction | .058 | .272 | .024 | .599 |
| Moral Self—YAFT | .045 | .386 | .050 | .271 |
| Moral Agency—Fiction | .088 | .120 | **.121** | **.004** |
| Moral Agency—Nonfiction | .107 | .059 | .067 | .116 |
| Moral Agency—YAFTa | **.180** | **.001** | **.166** | **< .001** |
| Moral Permissibility |  |  |  |  |
| Moral Permissibility—Fictiona | **.168** | **.004** | **.129** | **.006** |
| Moral Permissibility--Nonfictiona | **.160** | **.006** | .077 | .096 |
| Moral Permissibility—YAFTa | **.123** | **.045** | .001 | .959 |
| Indirect Effects | *ab* | *p* | *ab* | *p* |
| Fiction—PT—Moral Selfa | **.044** | **.039** | .010 | .484 |
| YAFT—EC—Moral Selfa | **.044** | **.044** | **.040** | **.034** |
| Nonfiction—PT—Moral Self | .017 | .373 | **.030** | **.030** |
| *Note. N* = 255 for Study 1, 426 for Study 2. aModels hypothesized in Study 2. All models include gender and personality factors related at *p* < 01. Empathic concern and perspective-taking were tested in a single multivariate model per predictor (Adult fiction, nonfiction, and YA fiction were in separate models), as were the three moral traits (Integrity, Moral Self, and Moral Agency). Significant effects (*p* < .05) in bold. Indirect effects *ab* are standardized. Statistics may differ from those presented in text (if those did not include gender in model). |

Figure 1. Proposed model for direct associations between reading and moral traits. Each type of reading (Adult fiction, nonfiction, YA fiction) was tested separately. Personality variables were included if slopes signification at p < .05 for Study 1, and p < .10 for Study 2. Gender was included if p < .05 (statistics for all models, with and without gender, available in SM).

*a*

*b*

*c*

Figure 2. Proposed model for the association of reading with moral identity via empathy. The direct effect of reading on Moral Identity (Moral Self and Integrity) is represented by c; the indirect effect is a\*b, or ab. The total effect would be c + ab. Because Moral Self was not directly related to reading, the c path is nonexistent in resulting models of the effect of reading on Moral Self.

1. Kidd & Castano (2016) reported an effect size of *r* = .15. Mumper & Gerrig (2017) reported a much weaker correlation for all fiction in their meta-analysis; however, both these studies were carried out before their paper was published. [↑](#footnote-ref-1)
2. Adding gender to the model (and discarding neuroticism, not significant in the presence of gender) results in a similar model, with YAFT scores predicting integrity (β = .161, *p* = .004) and moral agency (β = .175, *p* = .002). [↑](#footnote-ref-2)
3. Tested in a single model; including sex—and not Neuroticism—revealed similar results. [↑](#footnote-ref-3)
4. This was not true without gender in the model. [↑](#footnote-ref-4)