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**LETTERS FROM EQUESTRIA: PROSOCIAL MEDIA, HELPING, AND EMPATHY
IN FANS OF MY LITTLE PONY**

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Media researchers have begun to move beyond studying violent media content effects and have, instead, showed greater interest in studying the relationship between prosocial media content and helping behavior. The present study contributes to this endeavor by both testing the role of empathy as a mediator of this relationship and by doing so within a relatively novel sample: Self-identified fans of a prosocial television show. Fans of the show *My Little Pony: Friendship is Magic* were compared to fans of Rooster Teeth (a studio producing online video content) in a cross-sectional study assessing their respective content consumption, a measure of affective empathy, and a self-report measure of prosocial behavior. For *My Little Pony* fans, unlike Rooster Teeth fans, emotional empathy mediated the relationship between media consumption and helping behavior. The results conceptually replicate and extend prior media and fandom research, offering both practical applications and potentially fruitful future directions for researchers.

Key words: fandom, television, digital media, mass media, youth and media, empathy, prosocial behavior

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1. Introduction

Dear Princess Celestia,

Today I learned a great lesson about friendship. You might think that it would feel good to get lots and lots of stuff, but it doesn't feel nearly as good as giving something special to some pony you really care about. I learned that it is truly better to give than to receive, and that kindness and generosity are what lead to true friendship. And that's more valuable than anything in the world.

- Spike the Dragon, My Little Pony: Friendship is Magic

Digital media have become a ubiquitous part of our culture. Since people devote more hours each day to media consumption than to almost any other activity (Rideout, 2010), it is only natural that media consumers and researchers alike are interested in how the media messages we are exposed to affect us. Historically, researchers have primarily focused on the detrimental effects of media consumption, as illustrated by the fact that nearly a dozen meta-analyses and a report by the United States Surgeon General have been conducted in the past sixty years on the subject of violent media content on viewer aggression (e.g., Anderson et al., 2010; Andison, 1977; Hearold, 1986; Greitemeyer & Mügge, 2014; Paik & Comstock, 1994; Sherry, 2001; Wood, United States Surgeon General, 1972; Wong & Cachere, 1991). Work on the beneficial effects of media exposure has been relatively scarce by comparison, ranging from improved visuospatial skills (Green & Bavelier, 2006) to school performance (Corbett, Koedinger & Hadley, 2001). Perhaps the most fruitful area within this field focuses on the effects of exposure to prosocial media messages, which have been suggested to improve prosocial behavior (e.g., Gentile et al., 2009; Greitemeyer & Mügge, 2014). To date, however, much of this work has focused on the short-term effects of exposure to a single instance of prosocial content within a controlled laboratory study (e.g., Greitemeyer & Osswald, 2010; Johnson, 2012; Johnson, Cushman, Border, & McCune, 2013). Studies which have looked at the long-term effects of regular exposure to prosocial media content (e.g., Prot et al., 2014) tend to focus on general samples of participants, rather than focusing on those belonging to fan groups with a particularly passionate interest in the media content. To the best of our knowledge, there have been no studies testing for a relationship between prosocial media content and prosocial behaviour among self-described fans of media with prosocial messages. Moreover, while a link between prosocial media messages and prosocial behavior has been demonstrated, there has been comparatively less work testing the psychological processes underlying this relationship. The present research attempts to address both

of these limitations by studying whether trait affective empathy mediates the relationship between consumption of media with prosocial messages and self-reported helping behaviour in adult fans of the television program *My Little Pony: Friendship is Magic*.

Theoretical models such as the General Aggression Model (GAM; Anderson & Bushman, 2002) and the General Learning Model (GLM; Buckley & Anderson, 2006; Gentile, Groves, & Gentile, 2014) explain the multitude of ways in which media content can influence behavior, including cognitive, affective, and physiological mechanisms. While such models are often applied to the relationship between violent media content and aggressive behaviour (e.g., Bushman & Anderson, 2002), the same models have also been applied to understanding the effects of prosocial media content on prosocial behaviour and its underlying mechanisms (Gentile, Groves, & Gentile, 2014), including eliciting affective reactions (e.g., empathy; Greitemeyer, 2009; Greitemeyer, Osswald, & Brauer, 2010), reinforcing and activating behavioral tendencies (e.g., script activation; Huesmann, 1988), and cognitive priming (Greitemeyer & Osswald, 2009, 2010). Of present interest is work suggesting that empathy may play a particularly important mediating role in this relationship. For example, in one of the first studies on the subject, researchers found that participants exposed to prosocial lyrics in songs experienced greater feelings of interpersonal empathy which, in turn, yielded increased prosocial behaviour (Greitemeyer, 2009). In another set of studies, the amount of prosocial content in participants' favorite media was associated with their helping behavior, an association mediated by participants' self-reported empathy (Prot et al., 2014). Studies such as these have begun to illustrate the importance of empathy as a possible mediator of prosocial content effects on prosocial behaviour.

A considerable shortcoming of the discussed studies is the fact that they have largely assessed media consumption outside the context of fandom. Many media consumers watch their favorite shows as fans, within the broader context of their fan communities (Reysen & Branscombe, 2010). According to a social identity perspective, the groups that one belongs to – including one's fan communities – provide them with a set of norms, beliefs, and values (e.g., Hogg & Smith, 2007; Reicher, Spears, & Haslam, 2010) which contribute to their sense of social identity (e.g., Tajfel, 1981; Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Put another way, the groups to which one belongs may influence their values and behaviour over time (Guidmond et al., 2003), something which has been demonstrated within the context of fan groups with prosocial values and global citizenship (Plante, Roberts,

Reysen, & Gerbasi, 2014). As such, while it is entirely possible to study the relationship between consumption of media with prosocial messages and prosocial behavior in a laboratory setting or in a sample of the general population, it may be the most useful to assess whether this relationship operates within members of fan communities, where the norms and values portrayed in prosocial media content may be the most likely to take root.

1.1. The Present Study

Research suggests that consuming media imbued with prosocial messages should be associated with prosocial behavior. While all of the mechanisms underlying this relationship are not currently known, empathy is thought to be a particularly likely underlying mechanism. To date, however, only a few studies have tested empathy's role as a mediator, and have typically done so within the context of short-term experiments (Greitemeyer & Osswald, 2009) or in studies assessing exposure to prosocial content in general samples (Prot et al., 2014). There has been little work directly assessing the relationship between media with prosocial messages and prosocial behavior within the context of passionate fans, whom one would expect to be the most likely candidates for internalizing such values and allowing them to influence their behavior.

With this in mind, the present study aims to conceptually replicate and extend prior research by testing whether empathy mediates the relationship between exposure to media prominently featuring prosocial messages and self-reported helping behavior and to do so within the context of fan groups. Specifically, these variables are assessed in fans of the animated television show *My Little Pony* (MLP), a show renowned for its recurring themes of friendship, compassion, understanding, and helping (e.g., Gilbert, 2015), as exemplified by the quote at the start of this article. Research on the MLP fan community has shown that adult fans do strongly identify with the show's characters (e.g., Reysen, Chadborn, & Plante, 2017) and that the fandom itself endorses prosocial norms of unconditional love and tolerance (Robertson, 2014). To rule out the possibility that consumption of media within any fan community is associated with prosocial behaviour, MLP fans are contrasted with a second group, fans of the Internet video production team, Rooster Teeth Productions. Rooster Teeth has, for more than a decade, produced original shows, podcasts, movies, and news programs for a large, loyal fanbase. The content produced by Rooster Teeth includes a broad range of series, including an ongoing machinima-based story about futuristic

soldiers, shows and podcasts about science and gamer culture, and comedy sketches. While the Rooster Teeth fan community often holds charity events and endorses strong community values, the content itself is not known for having strong prosocial messages. As such, it is an ideal group against which to compare MLP fans.

Given MLP fans' passionate interest in consuming a show with strong prosocial messages, as well as norms within the fandom supporting the internalization of those messages, we predict that there will be a significant positive relationship between consuming fandom-relevant content and self-reports of helping behavior among MLP fans, consistent with prior research on both MLP fans (Reysen et al., 2017) and on prosocial media messages in general (e.g., Prot et al., 2014). We do not, however, expect to find a similar relationship among Rooster Teeth fans, given that content associated with this fandom is not typically associated with prosocial messages. For the same reasons, we expect to find a relationship between fandom-relevant content consumption and affective empathy – that is, the ability to imagine another's experienced affective responses as if they were one's own – for MLP fans, but not for Rooster Teeth fans. However, the two groups should not differ with regard to the relationship between affective empathy and prosocial behavior, given that prior research has found this relationship in samples of the general population (e.g., Lockwood, Seara-Cardoso, & Viding, 2014). Finally, we predict that, as a result of these predicted differences in the relationship between fandom-relevant content and the proposed mediator, empathy should significantly mediate the relationship between viewing fandom-relevant content and self-reported helping behavior in MLP fans, but not in Rooster Teeth fans, a finding consistent with existing research on empathy as a mediator of such effects (e.g., Greitemeyer, 2009).

2. Method

2.1. Participants and Procedure

Participants ($N = 820$, 83% male; $M_{\text{age}} = 23.57$, $SD = 5.97$) were recruited from two different samples. MLP fans ($n = 567$, 90% male; $M_{\text{age}} = 24.3$, $SD = 6.57$) were recruited through a popular MLP fan website. Rooster Teeth fans ($n = 256$, 70% male; $M_{\text{age}} = 22.0$, $SD = 3.92$) were recruited through a Rooster Teeth subreddit. All participants read a recruiting advertisement on the respective pages and volunteered to participate. All participants completed measures assessing the frequency with which they consumed fandom-relevant material, a measure of affective empathy, and a self-reported measure of past prosocial behavior as part of a larger questionnaire. This

procedure was approved by the Southeastern Louisiana University Institutional Review Board (#2016-081, "Fandom Prosocial Engagement").

2.2. Measures

2.2.1. Media Exposure

Participants indicated the frequency with which they viewed programming related to their fan interest [*My Little Pony* / Rooster Teeth Productions] on an 8-point scale, from 0 = *never* to 7 = *many times each day*.

To test whether the content of each fan group's media did, in fact, differ with regard to their prosocial content, four undergraduate research assistants conducted a content analysis on 10 randomly selected episodes of *My Little Pony* and 10 randomly selected YouTube videos created by Rooster Teeth. When asked to count the frequency of prosocial acts occurring in each episode (defined as a behavior that is intended to help another individual), prosocial acts were found to be more frequent in the *My Little Pony* episodes ($M = 8.73$, $SD = 3.94$) than in the Rooster Teeth videos ($M = 2.98$, $SD = 2.13$; $t(76) = 1.97$, $p = .002$), even after controlling for the length (in minutes) of each episode/video. This analysis thus supports the premise that the television show *My Little Pony* contains considerably more prosocial content than do videos from Rooster Teeth.

2.2.2. Empathy

Empathy, defined as "the reactions of one individual to the observed experiences of another" (Davis, 1983, p. 113), was assessed using the 7-item empathic concern subscale of Davis' (1980) interpersonal reactivity inventory. The measure includes items such as "I often have tender, concerned feelings for people less fortunate than me." Participants' responses on a 7-point Likert-type scale (1 = *strongly disagree*, 7 = *strongly agree*) were averaged to form a composite measure of empathy ($\alpha = .83$).

2.2.3. Helping behavior

Participants' self-reported helping behavior was assessed in two separate ways. First, they completed a single item measure of their charitable giving ("I have donated money to a charity"), rating their agreement on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). Next, they completed 15 items taken from the General Social Survey charitable giving scale (Smith, 2003; Einolf, 2008). Each item, assessed on a 5-point scale (1 = *never*, 5 = *8 or more times*) assessed the frequency with which

participants engaged in different charitable or helpful behaviors (e.g., "Donated blood," "Spent time talking with someone who was a bit down or depressed"). Each of the 16 items was standardized before being averaged to form a composite measure of helping behavior ($\alpha = .86$).

3. Results

We first calculated the descriptive statistics and zero-order correlations for all variables assessed (see Tables 1 and 2). The results revealed a relationship between empathy and helping behaviour for both MLP fans and Rooster Teeth fans, as expected. There was also no evidence that MLP and Rooster Teeth fans differed with regard to either the amount of emotional empathy they felt ($t(821) = .52, p = .60$) or the amount of helping behaviour they engaged in ($t(821) = .16, p = .87$). Rooster Teeth fans did report more frequent viewing of fan-related content than MLP fans, however ($t(812.85) = 19.83, p < .001$). Most relevant to the present hypotheses, however, the two groups differed with regard to the relationship of content-viewing with both empathy and self-reported helping behavior, such that there was a significant relationship between these three variables for MLP fans that was not present for Rooster Teeth fans.¹

Table 1. *Descriptive Statistics for, and Zero-Order Correlations between, Assessed Variables in Rooster Teeth Fans.*

Variable	1	2	3	4	5
1. Age	--	--	--	--	--
2. Sex	-.02	--	--	--	--
3. Viewing	-.08	.01	--	--	--
4. Empathy	.04	.23**	-.05	--	--

¹ As the MLP fan sample is twice the size of the Rooster Teeth fan sample, it is worth considering whether differences in the significance of direct and indirect effects observed between the two groups are driven by greater relative variance in the Rooster Teeth sample. We do not believe this to be the case presently, for two reasons. First, while the MLP sample is twice the size of the Rooster Teeth sample, both comprise fairly large samples and thus represent relatively stable estimates of the group means. Second, and perhaps most directly addressing this concern, descriptive statistics suggest that, if anything, there is greater variance in the MLP group than in the Rooster Teeth group.

5. Helping	-.01	-.01	.10	.24**	--
Mean	21.99	.30	6.54	4.87	-.01
Standard Deviation	3.92	.46	.71	1.08	.53

Note. * $p < .05$, ** $p < .01$. Sex of participant was coded as 0 = male and 1 = female.

Table 2. Descriptive Statistics for, and Zero-Order Correlations between, Assessed Variables in MLP Fans.

Variable	1	2	3	4	5
1. Age	--	--	--	--	--
2. Sex	-.01	--	--	--	--
3. Viewing	-.02	-.05	--	--	--
4. Empathy	.10*	.16**	.16**	--	--
5. Helping	.06	.12**	.17**	.26**	--
Mean	24.29	.10	5.06	4.92	.00
Standard Deviation	6.57	.30	1.42	1.13	.59

Note. * $p < .05$, ** $p < .01$. Sex of participant was coded as 0 = male and 1 = female.

Building upon these results, we next tested a moderated mediation model which compared the mediating role of empathy in the relationship between content-viewing and helping behaviour for MLP and Rooster Teeth fans using the PROCESS macro for SPSS (Model 8, Hayes, 2013).² The macro uses a bootstrapping technique (5,000

² Given the significant relationship between both age and sex and the other variables of interest in the study, we ran the model with and without these variables as covariates. The pattern of results and significance of the pathways did not change as a result of their inclusion. For brevity of presentation, we present only the results of the analysis without the covariates.

samples) to generate estimates and 95% confidence intervals for each direct and indirect pathway in the model, with significance assessed by whether or not the interval includes zero; those which do are considered non-significant. The model also provides a test the significance of type of fandom (MLP vs. Rooster Teeth) as a moderator of the mediated indirect pathway. Figure 1 displays the standardized regression coefficients for each pathway in the model for the two groups. Path analysis revealed that for Rooster Teeth fans, neither the direct ($B = .08, SE = .05, 95\% CI [-.012, .169]$) nor indirect ($B = -.01, SE = .01, 95\% CI [-.030, .019]$) pathways were significant. In contrast, for MLP fans, both the direct ($B = .05, SE = .02, 95\% CI [.024, .085]$) and indirect ($B = .01, SE = .005, 95\% CI [.007, .025]$) pathways were positive and significant. Analyses also revealed evidence for significant moderation of the indirect effect by fan group ($B = .02, SE = .01, 95\% CI [.001, .049]$), as predicted. We next contextualize these results and discuss both their implications and limitations.

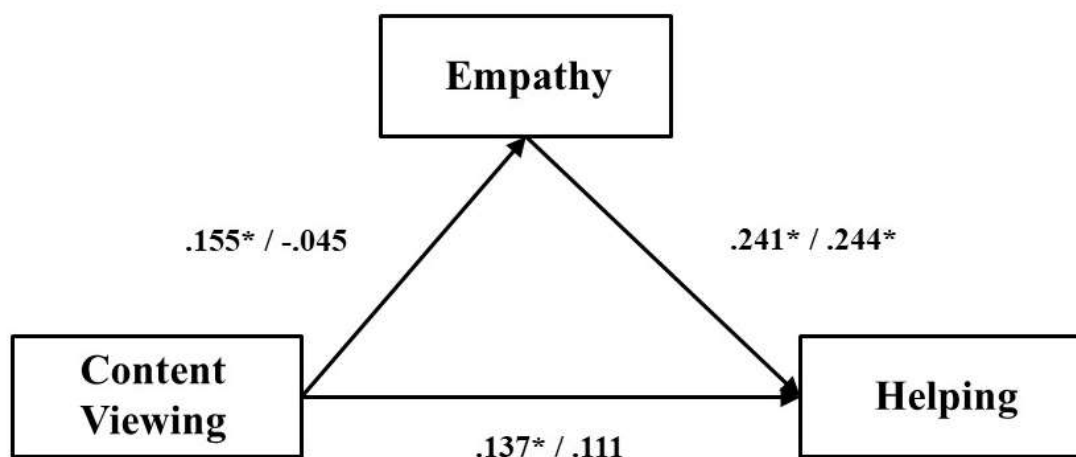


Figure 1. Path model with standardized pathway coefficients for MLP and Rooster Teeth fans, respectively. * $p < .05$.

4. Discussion

The purpose of the present research was to conceptually replicate prior research showing that empathy plays a mediating role in the relationship between prosocial media exposure and helping behavior and to extend this research by testing for these relationships within a sample of self-reported prosocial media fans.

The data support our hypothesis that exposure to prosocial content would only be associated with empathy and self-reported helping behavior in the MLP fan group.

In addition, empathy was only found to significantly mediate the relationship between content exposure and helping behaviour among MLP fans, as predicted, due to the lack of a significant relationship between content viewing and either empathy or helping behavior in the Rooster Teeth sample. It should be noted that the MLP and Rooster Teeth groups did not differ with regard to their mean levels of either empathy or helping behavior, nor did they differ in the relationship between empathy and helping behavior, consistent with past research (Lockwood, Seara-Cardoso, & Viding, 2014). The present findings suggest, at very least, that the groups may differ with regard to whether or not prosocial media exposure contributes to empathy and helping behavior. The causal direction of this relationship for MLP fans remains to be tested in future longitudinal studies, though it is entirely plausible that, like with violent media content effects, it may be a bidirectional effect (e.g., Breuer, Vogelgesang, Quandt, & Festl, 2015; Möller & Krahe, 2009). For Rooster Teeth fans, however, this possibility is unlikely, given the lack of a significant association between content consumption and either empathy or helping. This means that for Rooster Teeth fans, empathy and helping, which occur at about the same rates as in MLP fans, must be driven by other factors, which may include, for example, norms and values held by the fandom itself. Future research is needed to test for such fandom-driven mechanisms in fans, and to possible test for the possible interaction of such norms and prosocial content within MLP fans.

The present findings are consistent with the existing literature on fan groups and with research on prosocial content effects. Speaking to the former point, the present findings expand upon existing research showing that many media-based fandoms espouse prosocial norms and values (e.g., the furry fandom, Plante et al., 2014) and suggest a possible mechanism through which this may occur. Of course, it is also possible that the fandom's prosocial norms and values may contribute to greater interest in the consumption of prosocial content. Longitudinal research is needed to explicitly test for this possibility. The present findings also speak to the latter point and are in-line with prior research (e.g., Prot et al., 2014), given that consumption of a prosocial television show, *My Little Pony*, is positively associated with prosocial behavior. Specifically, it provides greater support for the role of affective empathy as a mediator of this relationship, in line with work reaching the same conclusion within the context of positive lyrics in music (Greitemeyer, 2009). Unique to the present study, however, the results have been obtained within the context of a fan group whose prosocial norms may help the show's prosocial messages "take root," so to

speak. It seems plausible that the prosocial norms and values espoused by the MLP fan community may help the messages of caring and helping in the show resonate with viewers, strengthening their impact on behavior. Future research would do well to test this possibility. One such possibility may be to show an episode of MLP to both a fan of the show and to non-fans to determine whether they have the same impact on prosocial behavior in a short-term, experimental setting.

4.1. Limitations and Future Directions

The present research, while extending the existing literature on both fandoms and the effects of prosocial media, is not without its limitations. The largest drawback to the present study is its cross-sectional nature. Given that the study was neither longitudinal nor experimental, we are unable to make strong claims about the directionality of the effects. While the results are consistent with prior research (e.g., Greitemeyer & Osswald, 2010) insofar as they suggest that there is an association between prosocial media content consumption and prosocial behavior, the present study cannot definitively conclude the causal direction of this association. In a similar fashion, the present study is unable to rule out other possible differences between the MLP fans and the Rooster Teeth fans which may account for the observed differences between content consumption and both empathy and self-reported helping. While gender and age differences were controlled for statistically, future studies would do well to both document and statistically control for other possible differences between the two groups which may more parsimoniously explain the present results. Future studies would also benefit from the use of other fan groups, including those based on other prosocial media content and those which are not. Doing so would help rule out the possibility that the present findings are an idiosyncrasy of the MLP and Rooster Teeth fandoms. It may also prove beneficial to conduct an experiment wherein MLP fans are exposed to neutral or non-prosocial content (e.g., Rooster Teeth videos) to test whether exposure to any media content is associated with prosocial behavior for members of this fandom.

A second limitation of the present study is its use of several measures with considerable drawbacks. With regard to the measure of media consumption, the item itself is a single-item measure which assesses frequency of viewing using an interval measure with non-equal spacing of response alternatives. In other studies, researchers assess media consumption in a more thorough, multidimensional fashion, including assessing hours of viewing per week and self-ratings of whether the show contained

prosocial content (e.g., Prot et al., 2014). Future studies employing this design would do well to implement more thorough measures such as these. It would also improve future studies to employ measures of prosocial behavior that did not rely on self-report, which may be susceptible to socially desirable responding or which may assess the perception of oneself as a person who engages in prosocial behavior, rather than actual frequency of prosocial behavior. Obtaining measures from friends or family members, or providing participants with an opportunity to engage in prosocial behavior themselves (e.g., donating money to a charity at the end of the survey) might provide a less-flawed measure of prosocial behavior.

These limitations aside, the present study was successful in providing evidence for the mediating effect of empathy on the relationship between prosocial media content and prosocial behavior within a fairly novel sample of self-reported fans. Evidence for prosocial media effects and the mediating role of empathy were observed only in the MLP fan sample, the sample defined by its consumption of prosocial media content. As discussed, this research has implications for the existing literature on both fan groups and on prosocial media and offers several avenues for potentially fruitful future research. The present study hints at the possibility that there may be additional benefits for fans of prosocial media above and beyond the enjoyment they get from the content itself and the sense of community fostered by shared experience with other fans – namely through encouraging prosocial behavior.

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