Feeling Better…but Also Less Lonely? An Experimental Comparison of How Parasocial and Social Relationships Affect People's Well-Being

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Abstract

For several decades, scholars have wondered if lonely individuals might benefit from emotional connections to media characters (i.e., *parasocial relationships*) to alleviate their solitude. Although some research has challenged this assumption, recent evidence suggests that people's ties to media characters might indeed fulfil currently unsatisfied needs for social companionship. Moreover, it has been argued that parasocial compensation effects may reach beyond the mere reduction of loneliness, encompassing other socially relevant well-being benefits as well. To make sense of the on-going debate—and to gain a more nuanced understanding of how parasocial relationships affect media users' well-being—we conducted an online experiment, asking participants ($N = 151$) to contemplate a real-life friendship, a parasocial friendship, or a non-social topic for several minutes. Before and after this task, three well-being indicators were measured. Our results show that the mental activation of parasocial relationships significantly improved participants' mood, to a similar extent as thinking about real-life friendships did. Regarding immediate feelings of loneliness, however, participants' ruminations about parasocial relationships proved utterly ineffective.

Keywords: parasocial relationships, well-being, loneliness, mood, self-esteem, parasocial compensation

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Human beings are inherently social animals: It is deeply rooted in our nature to search out connections to others and to thrive because of them. Accordingly, psychological research has established that social connections benefit people's well-being in profound ways (e.g., Chanfreau et al., 2008; House et al., 1988). Not only does interpersonal contact relate to improved physical fitness and a longer lifespan (Holt-Lunstad et al., 2010), it also counteracts feelings of isolation and solitude, which constitute two of the strongest risk factors for poor mental health (Cacioppo et al., 2006; Wang et al., 2018).

Clashing with these fundamental principles of human well-being, however, are societal developments that have occurred throughout recent years. Specifically, cross-cultural surveys have reported a significant rise of single-person households around the world (Ortiz-Ospina, 2019)—a development that is projected to continue for decades to come (Euromonitor International, 2019). Thus, as more and more people are living alone during their adult years, public concern has grown around an impending 'loneliness crisis' (e.g., Howe, 2019), with some data suggesting that young adults nowadays fear being alone as much as contracting a deadly illness (Connolly, 2018). In all probability, the restrictions and challenges brought by the COVID-19 pandemic may further feed into this mindset, as principles of social distancing continue to change our social interactions in substantial ways.

Yet, somewhat surprisingly, empirical findings show that despite their increasingly isolated living situation, modern-day citizens do not necessarily suffer from higher levels of loneliness—not even in response to the coronavirus outbreak (Luchetti et al., 2020). Instead, people seem to have found numerous ways to mitigate their solitude, for instance by using

communication technology or focusing more on professional success (Clark et al., 2015). Along the same lines, media psychological literature has proposed that lonely individuals may turn to so-called *parasocial interactions* and *relationships* (i.e., illusionary, one-sided ties to media characters) in order to experience social companionship (Tsao, 1996; Wang et al., 2008). While some scholars have expressed doubts about this compensatory mechanism, noting a lack of correlation between parasocial experiences and self-reported loneliness (e.g., Hartmann, 2016, Schiappa et al., 2007), other evidence suggests that people may indeed seek out parasocial phenomena to satisfy the deeply human need for social relatedness (e.g., Bond, 2021).

Offering a possible explanation for these discordant results, a recent meta-analysis (Tukachinsky et al., 2020) revealed that exposure to media characters was not related to lower loneliness in general, but instead showed a strong association with more immediate social needs. Accordingly, we argue that many prior studies on the compensatory function of parasocial phenomena may have been limited by an oversimplification of human sociality. From a psychological point of view, loneliness may be best understood as an affective condition that occurs whenever a person's social needs are not met by corresponding experiences (e.g., Hawkley & Cacioppo, 2010). In this sense, the concept holds a distinctly state-like quality, as feeling more or less lonely depends on current situational and motivational circumstances. Of course, it may be noted that prolonged discrepancies between desired and actual social interaction can also manifest as a more enduring psychological condition (i.e., *trait loneliness*); however, by focusing almost exclusively on the latter, scholars of parasocial compensation effects might have pursued an incomplete or even misleading approach.

In turn, we propose that parasocial experiences may hold compensatory value after all— not in an all-encompassing sense, but rather by providing short-term gratifications that would

otherwise be sought in real social interactions. For instance, a television show might help

viewers to feel socially connected on a particularly lonesome evening, yet still leave their levels

of trait loneliness unaffected. In the same vein, people might turn to media characters to fulfil

immediate well-being needs (such as mood repair)—while still coming to the same conclusion

about their social life as before. Based on these arguments, we believe it is an important next step

for the field of parasocial compensation research to shift focus from general loneliness to more

acute indicators of social connectedness and well-being. In particular, this goal should be

pursued with experimental methods, considering that the correlational designs used in prior

research (e.g., Chory-Assad & Yanen, 2005; Greenwood & Long, 2009) have made it impossible

to observe directional effects or interpret them in a causal manner. Hence, we present an

experimental study that investigates how parasocial relationships impact people's immediate

well-being, with particular focus on three psychological indicators: state loneliness, negative

mood, and social self-esteem. Doing so, we hope to elevate the academic debate on parasocial

compensation effects beyond its traditionally narrow focus on trait loneliness as the decisive

outcome. Furthermore, striving for comparative insight, we not only juxtapose the effects of

parasocial connections to a neutral control condition, but also compare them directly to the

potential merit of real-life relationships.

Defining Parasocial Phenomena

First introduced by Horton and Wohl (1956), the term *parasocial interaction* (PSI)

describes a mediated form of social interaction between a media user (e.g., a television viewer)

and a media character (e.g., a protagonist of a TV series). Unlike personal encounters in real life,

these mediated interactions are one-sided and lack mutuality. As such, they may be considered as

a media user's perceptual 'illusion' of being in a bidirectional interaction even though it is

actually non-reciprocal (e.g., Hartmann & Goldhoorn, 2011). Despite their one-sidedness and illusionary character, however, PSIs are believed to mirror face-to-face interactions in many aspects, often involving similar cognitive, affective, and/or conative responses (e.g., Schramm & Hartmann, 2008).

PSIs can be experienced with any kind of media persona, ranging from politicians, newscasters, and famous athletes to fictional characters such as the protagonists of novels or movies. Ultimately, it is only relevant for the occurrence of a PSI that the media character is perceptually present to the media user—which is why the concept remains confined to the immediate reception situation. Yet, this means that PSIs cannot fully capture how audiences are affected by media characters, because people may also develop thoughts and feelings about the depicted individuals in their absence. In light of this, the PSI concept is commonly complemented by that of *parasocial relationships (PSRs)*. PSRs exceed the temporal restrictions of PSIs, emerging as cross-situational ties between media users and media characters. Similar to social relationships in real life, they tend to become stronger the more a person gets to know the respective media character—and often culminate in genuine feelings of friendship or even romance (Tukachinsky, 2010).

Similarities of Social and Parasocial Phenomena

A key assumption that has guided scholars' understanding of how people relate to media characters is the so-called *Panksepp-Jakobson hypothesis*, which suggests that human evolution has not yet had sufficient time to adapt to the existence of modern media (Panksepp, 1998). In turn, it is presumed that individuals are hardwired to show the same affective and behavioral responses to media characters as they would during real-life encounters. Building upon this theoretical groundwork, many studies have pursued the idea that PSIs and PSRs mirror real

social contact in several meaningful ways (e.g., Adam & Sizemore, 2013; Tukachinsky & Stever, 2019). For instance, it has been demonstrated that the classic interdependency between single interactions and overarching relationships appears to be quite similar in the social and the parasocial realm: Echoing the iterative development of real-life ties (Knapp, 1978), single PSIs pave the way for new PSRs, which then present the starting point for new PSIs (Klimmt et al., 2006). Along the same lines, research has suggested that the predictors for developing parasocial and actual social relationships might be remarkably analogous. In both cases, the perceived similarity between two people constitutes an essential antecedent of forming stable relationships (e.g., Aube & Koestner, 1995; Tian & Hoffner, 2010). Likewise, scientific evidence indicates that the attractiveness of the (para-)social other plays a crucial role for both types of connection, with striking parallels: Whereas mental attraction is regarded as the decisive factor to form amicable relationships in both contexts, the development of romantic ties generally seems to depend more on physical attractiveness (Liebers & Schramm, 2017; Regan & Berscheid, 1997).

Lastly, it has been established that social and parasocial connections provide quite similar gratifications to individuals, including the alleviation of tension, guidance in decisions, entertainment, mood repair, and the catering to many other sociopsychological needs (e.g., Hartmann, 2016; Tsay & Bodine, 2012; Tukachinsky et al., 2020). Again, the observed parallels also apply to romantic ties: Just like real-life romance, falling in love with a media character relates to higher life satisfaction, a better sense of self-reflection, improved mood, and even sexual gratification (Adam & Sizemore, 2013).

Parasocial Phenomena as a Compensatory Form of Companionship

Considering that PSIs and PSRs resemble real-life social contact in such profound ways, a growing number of studies (e.g., Davis & Kraus, 1989; Eggermont & Vandebosch, 2001;

Liebers & Schramm, 2022; Schiappa et al., 2007; Wang et al., 2008) have explored whether people turn to media characters in order to balance out a lack of real-world ties—a notion also known as *parasocial compensation hypothesis*. At first glance, the majority of the literature seems to suggest that there may not be a meaningful link between social deficiencies and the tendency to engage in parasocial experiences (see Tukachinsky et al., 2020, for a recent synthesis of evidence). Thus, media scholars have come to the understanding that PSRs serve "as an extension of, rather than as a substitution for social relationships" (Tukachinsky et al., 2020; p. 868). At the same time, it is crucial to point out that many of the studies feeding into this conclusion have been fairly limited in theoretical or methodological scope, so that the objective truth might be far more complex.

First and foremost, we note that most prior research on parasocial compensation effects featured a rather narrow understanding of human loneliness. More often than not, the respective studies conceptualized it as an overarching long-term condition, which was then connected to parasocial phenomena in a correlational manner. However, considering social psychological insight (e.g., Hawkley & Cacioppo, 2010; ten Bruggencate et al., 2018), we argue that this approach might have concealed important, more nuanced effects. Indeed, by disentangling trait loneliness (defined as the general satisfaction with one's social life) from more immediate social needs, a recent meta-analysis found only the latter to be significantly related to PSIs and PSRs (r = .41; Tukachinsky et al., 2020). Fascinatingly, a similar pattern emerged from recent research conducted during the COVID-19 pandemic. In his study, Bond (2021) observed that individuals who strictly followed principles of social distancing during the initial coronavirus outbreak were particularly prone to intense parasocial experiences—regardless of whether they had expressed a lack of real-life social ties or not. In our reading, this suggests that the compensatory role of

parasocial phenomena might not necessarily target a general level of social dissatisfaction, but instead alleviate a current lack of *actualized* social potential. Evidently, the same seems to hold true for romantic needs as well: Liebers (2022) uncovered evidence that it was especially individuals with currently unfulfilled romantic desires who felt inclined to seek out romantic PSRs. As such, we suppose that parasocial experiences should not be regarded as a remedy for all-encompassing feelings of loneliness, but rather as a means to address specific social motivations whenever they arise.

Rather critically, the abovementioned conceptual limitations have also fed into a less-than-ideal methodological approach in many parasocial compensation studies. To our knowledge, nearly all investigations of the hypothesis have employed correlational designs (e.g., Ashe & McCutcheon, 2001; Chory-Assad & Yanen, 2005; Eggermont & Vandenbosch, 2001; Greenwood & Long, 2009; Lim & Kim, 2011; Wang et al., 2008), which prevented them from observing causal effects. In a similar vein, we note that numerous studies examined loneliness as a *predictor* of PSRs, yet hardly acknowledged the other direction, i.e., the actual *effectiveness* of the compensatory behavior in question. Arguably, this constitutes a remarkable oversight, since proving a behavior to be effective may be key to making sense of its function in the first place. In fact, we know of only one study that has actually scrutinized loneliness-related outcomes of PSRs in an experimental way (Derrick et al., 2009). Offering intriguing evidence, the authors reported that thinking about a favorite television host sufficed to reduce feelings of solitude among young adult participants. Without wanting to detract from this contribution, however, we believe that the cited study is limited by the fact that it only implied PSRs as the underlying mechanism—yet never explicitly mentioned or measured the construct as such.

Finally, it should be stated that social experiences serve many other purposes than merely to feel less alone. For instance, the company of others may also be pursued in order to reduce current negative mood states (e.g., Sandstrom & Dunn, 2014) or to boost self-esteem (Harris & Orth, 2020). Although research has unambiguously shown that these outcomes can also follow from PSIs and PSRs (e.g., Derrick et al., 2008; Hartmann, 2016), they have become more of a sidenote in the scholarly discussion of parasocial compensation. In one of the few publications to address this oversight, Madison et al. (2015) argued that the tendency to substitute social ties with parasocial experiences may actually depend on many different motivations, such as the need to refine one's social skills or to reach a deeper level of self-understanding.

The Current Study

To summarize, most literature to date seems to agree that parasocial phenomena evoke genuine feelings of relatedness and may facilitate several of the positive effects that are otherwise associated with real-life social connections. On the other hand, there is ongoing debate whether this process should be considered compensatory—and clear answers to this question are obfuscated by both conceptual and methodological limitations.

In response to this, we devised an experiment that observed the immediate influence of parasocial ties on people's well-being. Based on our theoretical considerations as well as the reviewed work by Derrick et al. (2009), we specifically explored whether thinking about a favorite media character (thus, mentally activating a PSR) could significantly improve people's current mental state. While this particular method was chosen mainly due to reasons of internal validity, it also adheres to the well-established psychological principle that humans often ruminate about their social ties in order to alleviate loneliness (e.g., Mar et al., 2012; Poerio et

al., 2016) and to fulfil other social needs (e.g., Honeycutt, 2003). Hence, we deemed a mental activation task a fitting intervention for our experiment.

Yet, in a conceptual distinction from prior research, we refined the outcome variables for our study according to the presented arguments. Most importantly, we only included state-like measures, shifting focus towards the more immediate compensatory potential of PSRs. Additionally, we decided to go beyond loneliness as the single decisive criterion and to explore other potential well-being benefits as well—keeping in mind that parasocial experiences might substitute many different gratifications of real social interaction. Of course, pursuing this approach required an informed decision as to which of many potential variables we wanted to explore; after all, human well-being is notoriously characterized by its multi-dimensionality (e.g., Diener, 1984; Fredrickson & Losada, 2005). Similarly, literature underscores that media can affect well-being in the most diverse ways, so that a vast number of probable outcomes comes to mind. For example, media use may evoke joy and relaxation (e.g., Rieger et al., 2014), inspire profound ideas (e.g., Bailey & Ivory, 2018), or allow audiences to experience a renewed sense of purpose (e.g., Silva Luna & Bering, 2022). However, pondering all of these potential effects, we realized that many of them depended on specific types of content, such as stories with a particularly eudaimonic quality (e.g., Wirth et al., 2012). This clearly contrasted with our study goals, as we strived to investigate the effects of beloved PSRs regardless of their originating context. As such, we decided to only focus on more overarching well-being outcomes that would not be dependent on specific media genres, contents, or formats.

Consequently, three core indicators were selected. First, we investigated participants' acute loneliness—a state-like variable that, unlike trait loneliness, could actually be affected by the engagement with media characters. Second, we employed a composite measure of negative

mood states (e.g., anger, fear, tension), anticipating a short-term reduction of negative affect following parasocial experience. In particular, this construct was chosen not only due to its central role in many well-being models (e.g., Diener, 1984), but also based on our core assumption that PSRs compensate for momentary social deficits—which strongly suggested mood repair as a predominant mechanism. Finally, we complemented our broader well-being focus by looking into social self-esteem, a state-like construct that encapsulates the perception of oneself as a socially satisfied and competent person. With this third variable, we eventually included a concept of high prescriptive value, as social self-esteem has been found to crucially affect future social interactions (e.g., Gruenewald et al., 2004). Also, considering that PSRs might serve to feel better about one's social skills and potential to connect with others (Madison et al., 2015), the prospect of improved social self-esteem occurred as a rather promising well-being effect to us. Taken together, we hypothesized:

> H1: Thinking about a favorite media character (a) decreases acute feelings of loneliness, (b) alleviates negative mood, and (c) increases social self-esteem more strongly than thinking about a non-social subject.

While we expected a clear well-being benefit of mentally activating a PSR, we felt less certain if individual levels of *PSR intensity* would modulate the proposed effects. Anticipating that different participants might think of more or less intense relationships, we considered it possible that the strength of the respective PSR would offer additional explanatory value. Still, as all participants were tasked with ruminating about a "favorite media character," it seemed likely that most selected PSRs would be situated on the higher end of the intensity spectrum, effectively limiting the observable variance. Therefore, we posed an open-ended research question instead of a directional hypothesis:

RQ1: Does the intensity of participants' PSRs influence the well-being effects proposed in H1?

Lastly, we focused on the comparability between parasocial and real-life social relationships with regards to their immediate well-being effects—addressing a key aspect of the compensation hypothesis. For this purpose, we added another group of participants to our experiment, requesting them to think about a beloved real-life acquaintance. Acknowledging previous research that found meaningful similarities between parasocial and social connections, yet raised doubts about their quantitative equivalence (Adam & Sizemore, 2013), we settled for another open research question:

RQ2: How does thinking about a favorite media character compare to thinking about a close real-life friend in terms of the well-being effects proposed in H1?

Method

The current work was preregistered using the AsPredicted platform (https://aspredicted.org/QYV_HDS)[1]. Furthermore, all materials, analysis codes, and anonymized data of the current study can be found in an Open Science Framework repository (https://osf.io/yedn3).

Participants

We conducted an a-priori calculation of minimum sample size for the current experiment. Assuming 80% power, an α error probability of .05, and an expected small to moderate multivariate effect of $f^2(V) = .0625$, we calculated a lower threshold of at least 114 participants.

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[1] In this manuscript, the preregistered hypotheses have been reordered for reasons of clarity. Apart from these minor modifications, however, no changes to the content of our pre-registration were made.

Using social media groups and mailing lists, a sample of 171 German-speaking individuals (115

female, 54 male, 2 unspecified; age $M = 31.14$ years, $SD = 12.95$) was recruited for our study.

Yet, based on a two-item attention check, we identified 20 participants who had lacked the

desired diligence and excluded them from our data. Thus, the final sample consisted of 151

participants (108 female, 41 male, 2 unspecified; age $M = 30.95$ years, $SD = 12.94$; range: 16–78

years). In terms of educational background, the majority of the sample reported a high level of

education, including university entrance qualifications (27.8%) or actual university degrees

(47%).

While institutional ethics approval is not required for psychological research in Germany,

the current study was conducted in full accordance with the Declaration of Helsinki, as well as

the ethical guidelines provided by the German Psychological Society (DGPs). Of course, this

also included obtaining informed consent from all participants before they were able to take part
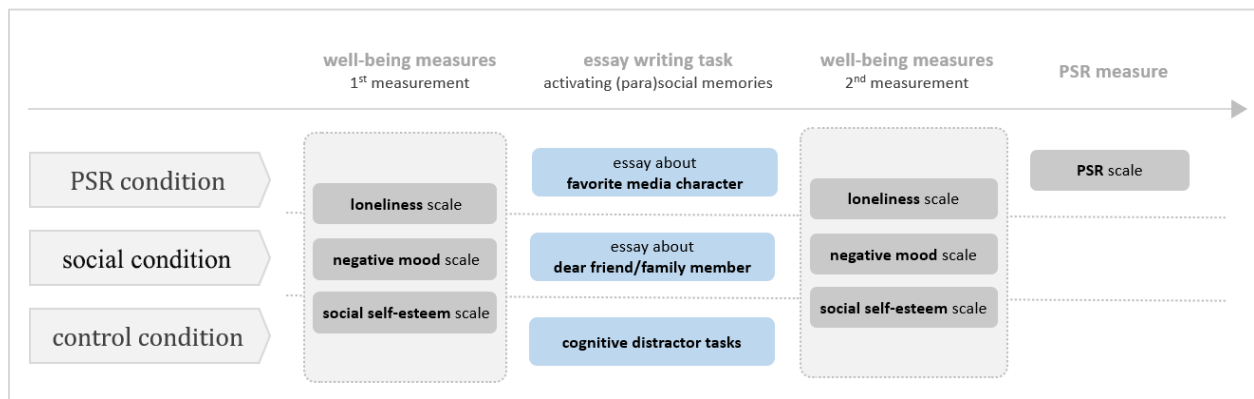
in our research.

Procedure and Stimuli

The current study took place in the form of an online experiment using a between-

subjects design (Figure 1). Participants were first presented with three well-being questionnaires,

assessing current levels of loneliness, negative mood, and social self-esteem. Next, they were

randomly assigned to one of three groups, namely the *PSR* condition, the *social* condition, or the

control condition. Depending on their group assignment, participants received one of the

following tasks: Writing an essay about their favorite media character (PSR group), writing an

essay about their closest real-life friend or family member (social group), or solving a series of

cognitive tasks with no connection to social experiences whatsoever (control group). While we

had initially considered to specify which kind of media persona participants should write about

in the PSR condition, we ultimately decided that doing so might cause problems due to different media and genre preferences. Therefore, our experimental instruction noted that the chosen media character could be "a real celebrity (e.g., athlete, actress, reality TV star) or a fictional character (movie character, hero from a TV show, character from a novel, etc.)." Likewise, we had initially pondered whether involving both family members and friends as potential subjects in our social condition might add unnecessary variance; however, anticipating that some participants might not feel close to their parents, just as others might not have particularly deep friendships, we eventually settled for the term "a dearly beloved person" in this condition—ensuring that all participants would be able to think of an appropriately intense social tie.

Figure 1

Between-Subject Design of Our Experiment

In both essay conditions (social and parasocial), an obligatory four-minute timer was used to ensure adequate engagement; only after the time was up, participants were allowed to proceed to the next page. Furthermore, we facilitated a more thorough engagement with the task by asking participants to describe several aspects of the chosen relationship in greater detail: (1) the main characteristics of the chosen person(a), (2) the very first interaction, (3) perceived similarities to oneself, and (4) the feelings usually associated with encountering the chosen

person(a). These specific prompts were chosen based on two theoretical considerations. First, we explicitly looked for questions that could be answered for both social and parasocial relationships. Second, and more importantly, we chose items that addressed each of the main stages of relationship development as they occur in both parasocial (Tukachinsky & Stever, 2019) and real-life relationships (Knapp, 1978): *Relationship initiation* (i.e., the first encounter), *relationship experimentation* (i.e., the process of finding similarities and common ground), and *relationship intensification* (i.e., the experience of growing relatedness). By these means, we hoped that participants would process the mental activation of the respective tie as comprehensive and intense as possible.

Individuals in the control condition, on the other hand, were asked to solve two mathematical equations, answer two brainteasers, and name as many world capitals as they could think of—i.e., to carry out a set of diversified distraction tasks that mainly served to occupy them for an equal amount of time, without triggering any social thoughts or feelings. To avoid boredom effects, we made sure that these control tasks were assembled from various different domains.

Following the experimental intervention, we again presented participants with our three well-being measures in order to assess the relative changes compared to the first measurement. Additionally, participants in the PSR group had to fill in a measure on the intensity of their PSR with the chosen media character. The experiment concluded with a final set of control and sociodemographic questions, as well as a short debriefing.

Measures

Loneliness. To measure participants' current levels of loneliness, we settled for the well-established *UCLA Loneliness Scale* (Russell, 1996), which has been featured in numerous

psychological studies. However, as this scale is typically used to measure loneliness as an overarching condition—and the rationale of our study was to shift focus to more immediate effects—we modified the questionnaire into a state-like measure. Instead of the complete 20-item form, which repeatedly refers to general life circumstances, we only selected six items that appeared suitable to assess loneliness as a state. Moreover, we adapted the wording of the chosen items to explicitly refer to the immediate present (e.g., "*At this very moment*, I feel left out.";
"*Right now*, I feel isolated from others."; 1 = *not at all true of me*, 5 = *completely true of me*). All adapted items were then translated from English to German, with back-translations ensuring validity. The resulting six-item state loneliness index showed very good internal consistency, in both its pre- and post-intervention application (Cronbach's α = .90 in both cases).

Negative Mood. Serving as a composite measure of current negative mood, we included the ten items on negative affect from the *Positive and Negative Affect Schedule* (Watson et al., 1988; German translation: Krohne et al., 1996). Broadly speaking, these items offer an approximation of unpleasant momentary mood states, including anxiety, fear, and anger; they do not, however, address loneliness, so that sufficient distinctiveness from our first dependent variable was given. For each item (e.g., "upset"; "scared"), participants had to indicate on five-point Likert scales how much the respective term described their current emotional state. Averaging all items into a comprehensive index, we observed very good internal consistency, Cronbach's α = .86 for the first and .84 for the second measurement.

Social Self-Esteem. Apart from the many measures assessing self-esteem as an enduring trait, the *State Self-Esteem Scale* by Heatherton and Polivy (1991) can be used to investigate more situational expressions of this construct. Out of the inventory's three sub-factors, we deemed both performance-related and appearance-related self-esteem irrelevant for the

parasocial compensation hypothesis. Thus, only the seven items addressing *social self-esteem* were included in the study (e.g., "I am worried what other people think of me."; "I feel concerned about the impression I am making."). Again, participants were asked to answer the items on five-point Likert scales (1 = *not at all true of me*; 5 = *completely true of me*). Similar to our other measures, reliability turned out very good, Cronbach's α = .86 for the first and Cronbach's α = .91 for the second measurement.

PSR. The *Multiple Parasocial Relationships Scale* by Tukachinsky (2010) was included to measure the intensity of participants' PSR in the respective condition. Specifically, we decided to focus only on the inventory's *friendship* sub-scales, as they offer a more general assessment of emotional ties without the need of an explicitly romantic connection. Hence, our assembled PSR index consisted of 13 items (e.g., "If X was a person in my own social environment, I would give him/her emotional support"; "I think X could be a friend of mine") presented in a five-point response format (1 = *not at all true of me*, 5 = *completely true of me*). We slightly modified the wording of some items to account for the fact that participants could also write about their PSR to a real-world celebrity. Internal consistency of the index was very good, Cronbach's α = .86.

Results

Table 1 presents the means and standard deviations for all study variables at both measurement times, as well as the calculated differences between them. For repeated-measures experiments such as ours, statisticians have long debated whether using pre-post difference scores (sometimes also called *gain scores*) produces meaningful results—or if other approaches, such as controlling for pretest scores in ANCOVA, present the preferrable option (e.g., Knapp & Schafer, 2009). Regarding this discussion, we refer readers to a large body of literature (e.g.,

Dimitrov & Rumrill, 2003; Fitzmaurice et al., 2004) demonstrating that gain score analyses yield

equivalent or even more robust results than commonly suggested alternatives. Accordingly, we

applied this approach during the statistical investigation of our hypotheses.

[INSERT TABLE 1 AROUND HERE]

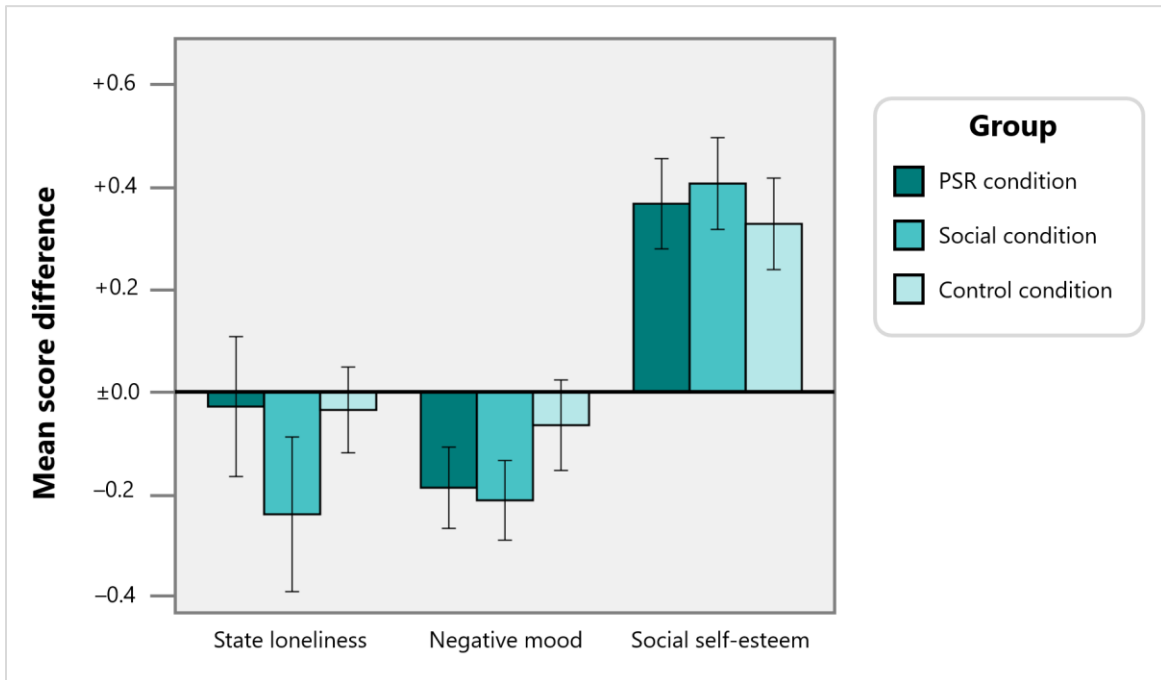**Well-Being Effects of Thinking About Favorite Media Characters**

In order to answer H1, we conducted a multivariate analysis of variance (MANOVA)

with the difference scores for state loneliness, negative mood, and social self-esteem as

intercorrelated dependent variables and our experimental manipulation as a grouping variable.

Doing so, we observed a significant multivariate effect of the mental activation task, Wilks' $\Lambda =$

.90, $F(6, 292) = 2.56$, $p = .020$, $\eta_p^2 = .05$. Proceeding to univariate analyses, we found significant

group differences in terms of reduced loneliness, $F(2, 148) = 3.77$, $p = .025$, $\eta_p^2 = .05$, and

reduced negative mood, $F(2,148) = 3.85$, $p = .023$, $\eta_p^2 = .05$. The effect of the manipulation on

social self-esteem, on the other hand, missed conventional thresholds of significance, $F(2, 148) =$

2.28, $p = .106$, $\eta_p^2 = .03$. Figure 2 illustrates the observed group differences.

Next, we calculated planned contrasts between the PSR condition and the control

condition (as per Hypothesis 1), focusing on the two well-being indicators that had produced

significant results. By these means, it was found that thinking about a media character ($M = -$

0.03, $SD = 0.43$) had not led to a significantly different reduction of loneliness than the control

task ($M = -0.04$, $SD = 0.45$), $p = .943$. However, in terms of decreased negative mood, the

planned comparison revealed a significant difference between the PSR condition ($M = -0.19$, SD

$= 0.25$) and the control condition ($M = -0.07$, $SD = 0.33$), $p = .047$, with a small-to-moderate

effect size of Cohen's $d = 0.41$ (95% CI [-0.09, 0.81]). This means that even though we reject

H1a and H1c, our results allow for a cautiously positive answer to H1b: Thinking about a

favorite media character decreased participants' negative affect significantly more than executing a non-social control task.

Figure 2

Mean Score Differences Obtained for the Three Well-Being Indicators [Error Bars Indicate 95% Confidence Intervals]

Influence of PSR Intensity on Well-Being Effects

Subsequently, we explored our research question if the beneficial effects of thinking about a favorite media character depended on the intensity of participants' chosen PSR (RQ1). Using only the data of the PSR group, we conducted a series of three linear regression analyses, entering PSR intensity as a predictor and the calculated differences in the three well-being variables as respective criteria. By these means, we examined that only participants' change in social self-esteem was significantly predicted by the intensity of their PSR, $F(1,38) = 5.44$, $p = .025$, $R^2 = .13$, $\beta = .35$. Thus, our results indicate a more nuanced interplay of effects: Even though our preceding analyses suggested that the PSR task had not led to an overall stronger

increase in social self-esteem than the neutral control task ($p = .106$), we found that within the

PSR condition, thinking about more intense parasocial friendships indeed elicited stronger self-

esteem improvements.

In an exploratory analysis step that was not pre-registered, we further looked into the

connection between initial levels of loneliness and well-being benefits in the PSR condition—

wondering if lonely participants benefitted more from thinking about their favorite media

character. However, no significant association was found between individuals' baseline

loneliness and any of the observed well-being changes. The full details for this exploratory

investigation can be found in the project's OSF repository.

Comparison with Real-Life Social Relationships

Lastly, we compared the well-being effects between the parasocial and the social essay-

writing task. For this purpose, we calculated planned contrasts between the PSR condition and

the social condition concerning both loneliness and negative mood, as these two variables had

yielded significant group differences in our initial MANOVA.

The first contrast focusing on the evoked loneliness changes showed that thinking about a

media character ($M = -0.03$, $SD = 0.43$) had resulted in a much smaller decrease in immediate

loneliness than thinking about a real-life friend ($M = -0.24$, $SD = 0.29$), $p = .024$, Cohen's $d =$

0.59 (95% CI [0.18, 1.01]). On the other hand, the two interventions had elicited comparable

reductions of negative affect (PSR condition: $M = -0.19$, $SD = 0.25$; social condition: $M = -0.21$,

$SD = 0.29$; $p = .688$). Hence, we present a mixed answer to RQ2: Whereas PSRs fell short of

real-life friendships in terms of loneliness mitigation, both types of relationship exerted similar

mood-enhancing effects.

Discussion

In the current study, we investigated the well-being effects of thinking about a favorite media character, compared to a close real-life relationship and a non-social control task. Statistical analyses demonstrated that having participants contemplate a beloved PSR for a few minutes sufficed to significantly reduce their negative mood. Even more intriguingly, subsequent analyses revealed that prompting thoughts and feelings about a favorite media persona was as beneficial for participants' affect as having them think about a close friend or family member. In our interpretation, this underscores the high relevance of parasocial phenomena as a potential source of (socially informed) well-being among media users. While this notion may not be entirely new to media scholars, we stress that the capacity of PSRs to enhance people's mood has rarely been acknowledged in the on-going discussion about parasocial compensation effects. Yet, considering that feeling better constitutes one of the most important gratifications of human social contact—and resulted from both our parasocial and social task to a similar extent—it may indeed be reasonable to ascribe *some* substitutional value to people's relationships with media characters.

Then again, with regards to participants' actual loneliness, we have to report that mentally activating PSRs exerted little to no effect, irrespective of how lonely our participants had felt at the beginning of the experiment. More so, this observation strongly contrasted with the benefits of contemplating a real-world friendship, which actually mitigated acute feelings of loneliness. As such, our findings add new evidence against the supposed power of PSRs to make people feel more connected, even regarding short-term effects. Of course, it is important to keep in mind that the specific nature of our experimental design—which involved thinking about the chosen personas instead of actually encountering them—might be somewhat responsible for this outcome. Perhaps a notable difference between parasocial and social relationships is that only the

latter may affect loneliness in an imagined form. Still, the obtained results suggest that PSRs as mediated *illusions* of social interaction have their psychological limits: They may 'trick' the human brain into perceiving interactions as reciprocal or feeling attached to a fictional character, but they might not change how people evaluate their own social needs.

Nevertheless, by situating our results within the larger discussion of parasocial compensation effects, we would like to reiterate an important argument taken from recent literature (e.g., Bond, 2021; Liebers, 2022; Tukachinsky et al., 2020): In moments of isolation or loneliness, people might not necessarily turn to media characters to reach a different impression about their social life; instead, they might merely seek out a swift way to enhance their mood, a goal that might otherwise require some form of real social connection. In this sense, we believe that PSIs and PSRs can indeed serve compensatory purposes.

Naturally, it should be pointed out that a single study cannot clear up a debate that has captivated media and communication scholars for decades, especially since our work revolved around the *mental activation* of relationships instead of actual interpersonal exposure. Moreover, several methodological limitations need to be acknowledged (see below). Still, we believe that our research has offered convincing arguments as to why it might be important to look beyond trait-like measurements and single loneliness indicators in the realm of parasocial compensation research.

Limitations and Future Work

In terms of limitations, it should first be mentioned that—due to research economic reasons—out study only captured a small cutout from the intricate complexities of human well-being. Accordingly, we encourage future experiments to investigate different well-being

indicators (such as autonomy, inspiration, or an improved sense of purpose) as potential outcomes of both parasocial and social experience.

Similarly, we suppose that follow-up efforts could benefit from inquiring participants about their current social needs in greater detail. For instance, a person who momentarily longs for romance might only benefit from romantic PSRs to find relief (Liebers, 2022). Likewise, Wang et al. (2008) suggest that for some demographic groups, PSIs might be mostly related to family-related loneliness—which emphasizes the potential merit of using more finely grained measurements in future research.

Next, we would like to point out that the majority of our sample appeared socially well-connected, as indicated by a low mean score for the used loneliness index. As such, our investigation of loneliness-related effects might have lacked the necessary variance to produce insightful results. As psychological studies have shown that it is especially people suffering from ostracism and social isolation who seek out new ways of social interaction (e.g., Maner et al., 2007), it might be advisable to situate future research about the compensation hypothesis at the opposite end of the loneliness spectrum. In all likability, doing so might yield a different empirical pattern than the one observed in our study.

Putting another methodological aspect up for discussion, we remind readers that participants in the PSR condition could choose their favorite character from many different domains. Thus, they might have thought about movie stars, characters from novels, or even popular social media personas. However, considering that different media modalities have been connected to different levels of engagement (e.g., Kowert & Daniel, 2021), this may have introduced a confounding variable into our experiment—so that replication efforts might want to limit participants to certain sub-types of media. Similarly, we did not restrict which type of real-

life tie could be chosen in our social condition, as we wanted to be respectful and inclusive towards different life circumstances. If done in an ethically responsible way, however, future studies could potentially inquire people more explicitly about the nature of their mentally activated relationship, which might help to uncover nuanced differences between different social ties (e.g., thinking about one's parents vs. good friends).

Along the same lines, replicating our work with different control tasks might lead to more defensible conclusions. During the creation of our study's neutral condition, we made sure to balance out different domains—geography, humorous riddles, math questions—so that this task would feel as varied as the essay-writing conditions. Arguably, the observation that participants' mood in this group turned out nearly identical in both measurements suggests that we were able to reach this goal. Nonetheless, we have to consider that some participants (e.g., those struggling to find a correct answer in one of the riddles) experienced this condition as less pleasant. As such, we suggest that follow-up studies employ different waiting tasks to reveal a more comprehensive picture.

For the sake of ruling out biases, we further recommend that future work varies the applied experimental design, e.g., by conducting post-test measurements only. In the current study, we focused on actual *changes* in our outcomes—as this allowed us to interpret the interventional effects as an actual in- or decrease in well-being. However, with two measurements, researchers add other problems to their work, e.g., by making participants aware of the study's purpose or inducing boredom. We hope that by keeping our measurements brief—using only a total of 23 items—and repeatedly stating that participants were supposed to answer "truthfully and spontaneously," some of these problems could be mitigated. Yet, replications of

our work with different designs (or, for instance, more extensive distractor tasks) are highly

encouraged to corroborate our findings.

As a final limitation, we want to reiterate that our experiment mainly revolved around the

value of *thinking* and *writing* about (para-)social friendships, instead of actually exposing

participants to the respective interaction partners. As stated above, this approach was based on

the fact that social daydreaming has been identified as a highly prevalent (and effective) behavior

in people's daily life. Moreover, essay-writing tasks that activate social thoughts and emotions

have become quite common in social psychological experiments (e.g., Derrick et al., 2009; see

also Williams, 2007). Still, we cannot rule out that some of our participants may have

experienced our writing task as too intimate or artificial, which could have triggered some form

of resistance. Hence, follow-up experiments investigating the effects of PSRs should employ

more natural manipulations. While this will likely cause notable standardization challenges—as

different individuals relate to different media characters—it could certainly help to scrutinize the

range and robustness of the uncovered effects.

Conclusion

The parasocial compensation hypothesis creates an intriguing vision about the social

power of media: Giving people an easily accessible means to alleviate brief moments (or

enduring states) of solitude. Indeed, concurring with recent evidence about the merit of

parasocial companionship, our experiment showed that emotional connections to media

characters elicited a similar immediate mood boost as real-world ties—even though this effect

did not translate into improved impressions of social connectedness. Ultimately, nuanced

perspectives such as these may help to make sense of the on-going controversy about parasocial

compensation effects. Even though a large body of research has challenged the compensatory

nature of PSRs, scholars may actually need to disentangle overarching, long-term effects from

more specific or immediate outcomes in order to better reflect human social life. Also, we argue

that further application of experimental methods is all but needed to reach justifiable conclusions

about the matter at hand. By offering a new contribution in the spirit of these suggestions, we

hope that our work creates an ignition spark for many related endeavors.

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Table 1

Descriptive statistics for the study variables

	Full sample	Parasocial condition	Social condition	Control condition
	N = 151	n = 40	n = 55	n = 56
	M (SD)	M (SD)	M (SD)	M (SD)
Parasocial relationship				
PSR friendship scale	–	3.73 (0.64)	–	–
Loneliness				
Before experimental task	1.90 (0.94)	1.76 (0.88)	2.00 (1.06)	1.90 (0.85)
After experimental task	1.79 (0.91)	1.73 (0.94)	1.76 (0.99)	1.86 (0.81)
Δ	–0.11 (0.45)	–0.03 (0.43)	–0.24 (0.56)	–0.04 (0.31)
Negative affect				
Before experimental task	1.53 (0.53)	1.56 (0.58)	1.54 (0.54)	1.52 (0.47)
After experimental task	1.38 (0.45)	1.37 (0.54)	1.32 (0.44)	1.45 (0.40)
Δ	–0.15 (0.30)	–0.19 (0.25)	–0.21 (0.29)	–0.07 (0.33)
Social self-esteem				
Before experimental task	3.55 (0.91)	3.65 (0.80)	3.69 (0.89)	3.33 (0.98)
After experimental task	3.79 (0.96)	3.93 (0.83)	4.01 (0.86)	3.49 (1.06)
Δ	+0.25 (0.42)	+0.28 (0.36)	+0.32 (0.42)	+0.15 (0.44)

Note. All scales range from 1 to 5. Due to our true randomization procedure as well as an unbalanced number of inattentive participants, we achieved slightly different group sizes for the three conditions.