The Parasocial Relationships in Social Media Survey

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DEDICATION

To my mom

for all the times I said I hated writing, and all the papers she read anyways

To my dad

who would do anything in his power to take a little more off my plate

To my wife, Katy, and our two dogs

who want nothing more than for me to be happy and successful

And to Parker

"or you can do what he'd want: smile, open your eyes, love and go on."

– David Harkens (1982)

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ABSTRACT

Parasocial Relationships, coined by Horton and Wohl (1956), are a type of one-sided relationship that is experienced between an audience and the performer. Though they cannot be reciprocated, people who have developed these relationships view them as other ordinary friendships (Eyal & Cohen, 2006). Historically these relationships were developed through television, however, with the advent of the internet, a new medium for interaction has been on the rise: Social Media. Social media has created a new avenue for these performer/viewer interactions by providing access to these celebrities and their content virtually anywhere and anytime. While there have been several instruments created to measure parasocial relationships in the past, and in a number of different contexts, none of them lend themselves to being implemented on celebrities of this new medium. The Parasocial Relationships in Social Media (PRISM) Survey was developed in order to address this gap in the literature.

This multipart dissertation contains three papers investigating parasocial relationships and the methods used to measure them. The first paper explores the current instruments found in the communications, psychology, sociology, and marketing literature that have been designed to measure parasocial relationships, including their strengths, weaknesses, and areas for improvement. The second and third papers introduce the PRISM survey, how it was developed, and the methods used to validate it. The findings from studies two and three demonstrates the PRISM survey possess strong construct validity, reliability, and psychometric properties. Exploratory factor analyses conducted in paper two found the survey measures four dimensions of parasocial relations: *Interest in*,

Knowledge of, *Identification with*, and *Interaction with* a given celebrity, while paper three found the survey to be invariant across different social media platforms. Together these papers support the PRISM survey's ability to measure parasocial interactions created with online social media celebrities accurately across different social media platforms.

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INTRODUCTION

Parasocial relationships are the one-sided relationships formed by a viewer with a performer's persona (Horton & Wohl, 1956). These relationships have been studied in great detail over the last 60 years, with over 260 articles being published (Liebers & Schramm, 2019). A large portion of this research has been focused on developing effective methods for measuring parasocial relationships. In this multi-paper dissertation, we further this area of research by proposing a new survey that can be used to measure parasocial relationships created with celebrities through social media. Each paper in this dissertation expands on the findings of the previous paper, while still functioning as a distinct, independent paper. The three papers are each summarized below.

Paper 1

In this dissertation, Paper 1 serves as the literature review that would typically constitute chapter 2 in a traditional dissertation format. In it, we explored the literature to learn more about parasocial relationships and how they have been measured in the past. Eight different survey instruments were discussed, including their intended purpose, the methods used to create them, and their overall strengths and weaknesses. These surveys came from several different fields including communications, psychology, sociology, and marketing. After summarizing the different measures found, we concluded the paper by discussing why a new survey for measuring parasocial relationships is needed and what one might look like. This includes creating more modern surveys based on the most current definitions of parasocial phenomena, suggestions for newer media contexts that do not

already have a validated survey, and utilizing online survey platforms for more advanced survey logic. This discussion set up the underlying purpose of the second and third papers, in which we developed and validated a new survey for measuring parasocial relationships developed with celebrities through social media.

Paper 2

In the second paper, we introduced a new survey for measuring parasocial relationships called the Parasocial Relationships in Social Media (PRISM) Survey. This 22-item survey was designed to address some of the issues discussed at the end of the first paper, specifically the need for a measure of parasocial relationships that had been developed and validated for use in a social media context. In the paper, we cover the initial item development process which used three existing scales (i.e., the Audience-Persona Interaction Scale (API; Auter & Palmgreen, 2000), Parasocial Interaction Scale (PSI; Rubin et al., 1985), and Celebrity-Persona Parasocial Interaction Scale (CPPI; Bocarnea & Brown, 2007)) as the starting point for the survey. Once created, the survey was then evaluated and assessed for content validity by an expert review panel that consisted of two survey research methodology experts and two content area experts in social media and parasocial relationships. The feedback from the panel was incorporated into the PRISM survey, after which it was used to collect data for further validity and psychometric testing.

Participants for the study were recruited using several online platforms (e.g., Facebook, Reddit, LinkedIn), fliers, and word of mouth. This resulted in a sample of 1208 adult participants from across the globe that follow a celebrity on at least one social media platform. Half of the sample was used to conduct an exploratory factor analysis (EFA)

which was used to assess the survey's construct validity, while the other half was retained for a follow-up confirmatory factor analysis (CFA) in the third paper. The results from the EFA showed a four-factor solution with constructs measuring *Interest in*, *Knowledge of*, *Identification with*, and *Interaction with* a given celebrity. These constructs aligned with the constructs from the original three surveys as well as those found in the literature. The paper concluded with a discussion of the reliability and validity of the PRISM survey, how it can be further assessed for validity, and how it can be utilized in future parasocial relationship research.

Paper 3

The final paper in this dissertation continues the validation of the PRISM Survey that was designed and presented in Paper 2. Using the second half of the data collected in Paper 2, we addressed three research questions to further support the psychometric properties of the PRISM Survey. These questions were:

1. Does the previously identified four factor structure replicate in a new sample?
2. Does the survey possess adequate convergent and discriminant validity?
3. Do the measurement properties (e.g., factor structure, thresholds) remain invariant across different social media platforms (e.g., live, recorded)?

In order to address the first research question, we conducted a Confirmatory Factor Analysis (CFA) in an attempt to replicate the factor structure found by the EFA. The CFA supported the same four-factor solution found in the EFA, further validating the PRISM Survey. Using the conventions set by Cheung and Wang (2017), we tested the survey's convergent and discriminant validity and found strong support for both, thus addressing

the second research question. Finally, we used a CFA measurement invariance approach to address the third research question and determine if the measurement properties of the survey are invariant across different types of social media platforms. We used YouTube and Twitch as exemplars of recorded and live format social media platforms in the analysis. The results of the test showed that the survey had full scalar invariance between the two social media platforms. Together these findings further support the strong psychometric properties and overall validity of the PRISM Survey. The paper concludes with a discussion of the results, followed by how the survey can be further assessed for validity, and finally, how it can be utilized to further future research on parasocial relationships in social media.

CHAPTER I
THE STATUS OF MEASURING PARASOCIAL RELATIONSHIPS: CURRENT MEASURES AND SUGGESTED IMPROVEMENTS

Abstract

In 1956, Horton and Wohl first introduced the concept of parasocial relationships into the literature. These one sided relationships were developed by viewers with performers persona, and have been found to be similar and complimentary to other relationships (Eyal & Cohen, 2006; Perse & Rubin, 1990; Rubin & McHugh, 1987). Over the past 65 years, there have been several attempts made to measure parasocial relationships, resulting in a number of different scales that can be used for a variety of different contexts. However, while many different scales exist, they are not interchangeable across contexts, and none have been validated to measure parasocial relationships in a social media context. Furthermore, the field of parasocial relationships has evolved considerably since its creation, while many surveys have not been reassessed since their inception. In the present study, we explore the measures found in the literature, including their strengths and weaknesses, and suggest areas for improvement as the field continues to grow.

Introduction

Research on parasocial phenomena began in 1956 when Horton and Wohl first coined the term parasocial interaction to define the relationship an audience creates with a performer on stage. While initially very stagnant, the research surrounding this novel concept has increased drastically over the past 65 years. As of 2019, over 260 different articles had been published on the parasocial phenomena, two thirds of which were written just in the last 10 years (Liebers & Schramm, 2019).

With the advent of this new area of research came the question of how to quantify and measure these parasocial phenomena. In Liebers and Schramm's (2019) review of research on parasocial relationships over the last 60 years, they noted that 81.3% of studies focusing on parasocial phenomena used a strictly quantitative approach, 5.0% used both quantitative and qualitative methods, and 13.7% used strictly qualitative methods. Of the quantitative studies, 64.4% used surveys for data collection. While nearly three-fourths (71.2%) of these studies used established scales or adapted versions of them, 15.3% developed their own scale to collect data. This has resulted in a variety of measures to choose from to measure parasocial relationships, depending on the context of the research. However, recent research (e.g., Dibble et al., 2016; Schramm & Hartmann, 2008) has started to question the validity of these instruments. Therefore, the purpose of this review is to examine the current landscape of instruments used to measure parasocial relationships and offer suggestions and improvements for the field. Our overarching research question is: Are the existing instruments valid and reliable methods to measure parasocial phenomenon?

Parasocial Relationships and Parasocial Interactions

Coined by Horton and Wohl (1956), parasocial interaction was defined as a type of relationship that is experienced between a spectator and the performer's persona. Due to the nature of the interaction, these relationships are one-sided and cannot be reciprocated by the performer they are made with. At the time, it was determined that television was the most effective medium through which parasocial relationships could be developed (Horton & Strauss, 1957; Horton & Wohl, 1956). However, as time and technology have progressed,

the mediums for parasocial relationship and interaction research have expanded beyond television to include radio, literature, sports, politics, and social media, such as Facebook, Twitter, and YouTube.

As the mediums for parasocial relationships expanded, so too did our understanding of these relationships. Early literature utilized the terms relationship and interaction interchangeably. More recently however, researchers have argued that these are two distinct constructs that require clear definitions in the literature (Giles, 2002; Schramm et al., 2002; Voderer, 1996). Vorderer (1996) stated that parasocial interactions are limited to the act of media reception itself. These are contained interactions that occur when someone is exposed to a performer in the media, and are limited to the duration of the media exposure. Brown (2015, p. 275) offered the following definition of parasocial interactions:

> "Parasocial interaction is the process of developing an imaginary relationship with a mediated persona both during and after media consumption, which begins with spending time with the persona through media or participation in mediated events, and is characterized by perceived relational development with the persona and knowing the persona well."

Through repeated parasocial interactions a parasocial relationship can be developed and strengthened over time. Parasocial relationships are enduring, cross-situational relationships, much like normal relationships, that extend beyond the parasocial interactions (Rihl & Wegener, 2019), which aligns with Horton and Wohl's initial definition.

Existing Methods to Measure Parasocial Relationships

In order to measure parasocial phenomena, several different scales have been developed and published over the years. While they all attempt to address the same underlying constructs, parasocial interactions or relationships, each of these scales were designed within a specific media context. While most were validated for the media context they were designed for, none have been validated in additional media contexts, and simply modifying the scale to fit a new context would not guarantee valid or reliable data. Moreover, each scale was developed based on the current media and definitions of parasocial relationships and interactions in the literature at the time, which have evolved greatly in the last two decades. As our understanding of the constructs and the mediums which they occur evolves, so should the instruments used to measure them. The following sections review some of the most popular instruments found in the literature and their limitations. See Table 1 for summary.

Parasocial Interaction Scale (PSI Scale)

Overwhelmingly, the most used scale is the Parasocial Interaction Scale (PSI scale) developed by Rubin et al. (1985). Libers and Schramm (2019) found that approximately 38% of the published studies that measured parasocial phenomena used the PSI scale. The items for the scale were developed based on earlier writings on parasocial interactions (Gregg, 1971; Horton & Wohl, 1956; Levy, 1979; Miller, 1983). This scale consists of 20 items and uses a 5-point Likert scale from “strongly disagree” (1) to “strongly agree” (5).

Table 1. Existing Scales to Measure Parasocial Interactions and Relationships

Scale	Purpose	Items (*subscales if reported*)	Reliability and Validity	Limitations
Parasocial Interaction Scale (Rubin et al., 1985)	Measure parasocial interactions with local television news personalities	20 (*1*)	Construct validity (principal factors analysis), Internal consistency reliability (Cronbach's alpha)	Highly specific context; Unidimensional; Lacks content validity; May actually be measuring parasocial relationships
Parasocial Interaction Web Site Scale (Hoerner, 1999)	Measure parasocial interactions with hosts or personalities on websites	15 (*3*)	Construct validity (principal axis factors analysis), Content validity (expert review panel)	Highly specific context; Factors are not defined; May actually be measuring parasocial relationships
Audience-Persona Interaction Scale (Auter & Palmgreen, 2000)	Measure parasocial interactions with sitcom characters	22 (*4*)	Construct validity (principal components analysis), Internal consistency reliability (Cronbach's alpha), Convergent validity (compared to related measures)	Highly specific context; May actually be measuring parasocial relationships
Parasocial Breakup Scale (Cohen, 2003)	Measures response to the dissolution of a parasocial relationship	13 (*2*)	Construct validity (principal components analysis), Internal consistency reliability (Cronbach's alpha), Convergent validity (compared to related measures), Discriminant validity (compared to measure of different construct)	Not a measure of parasocial interaction or relationship; Factors are not defined

Table 1 continued

Scale	Purpose	Items (*subscales if reported*)	Reliability and Validity	Limitations
Celebrity-persona Parasocial Interaction Scale (Bocarnea & Brown, 2007)	Measures how individuals develop parasocial relationships with celebrities or popular fictional characters	20 (*1*)	Construct validity (factor analysis), Internal consistency reliability (Cronbach's alpha), Predictive validity (predicted outcomes on related measures)	Poor reporting of validity analyses; May actually be measuring parasocial relationships
PSI-Process Scales (Schramm & Hartmann, 2008)	Measures the process of parasocial interactions during media exposure	112 (*14*)	Internal consistency reliability (Cronbach's alpha and item total correlations), Predictive validity (predicted outcomes on related measures)	Very large; lack of construct validity evidence
Experience of Parasocial Interaction Scale (Hartmann & Goldhoorn, 2011)	Measures the intensity of parasocial interactions	6 (*1*)	Construct validity (principal components analysis), Internal consistency reliability (Cronbach's alpha and item total correlations), Discriminant validity (compared to measure of different construct)	Unidimensional
Political Parasocial Relationship Scale (Cohen & Holbert, 2018)	Measures the intensity of parasocial relationships with any political candidate or elected official	13 (*1*)	Construct validity (confirmatory factor analysis), Internal consistency reliability (Cronbach's alpha), Predictive validity (predicted outcome on related measure)	Highly specific context; Unidimensional

Initial test of the scale showed a Cronbach's alpha of .93, and the oblique-rotated principal factor analysis yielded a one factor solution that accounted for 45.7% of the total variance. Shortly after publishing this scale, Rubin and Perse (1987) created a reduced, 10 item scale which used the same 5-point Likert scale. This shorter scale showed a Cronbach's alpha of .88, and the factor analysis yielded a one factor solution that accounted for 51.0% of the total variance. Both the original and compact versions also reported good content and construct validity which was replicated by other researchers (Auter, 1992; Rubin & McHugh, 1987). Unfortunately, the convergent validity between the two versions were not assessed.

These two versions of the PSI scale were originally designed to measure the parasocial interactions with TV newscasters and soap opera actors, respectively. However, since then they have been adapted and used to measure parasocial interactions with YouTubers (Kurtin et al., 2018; Lee & Watkins, 2016; Rihl & Wegener, 2019), Korean celebrities (Chung & Cho, 2017), TV actors and personalities (Cole & Leets, 1999; Eyal & Cohen, 2006; Greenwood et al., 2008; Tian & Hoffner, 2010), talk radio hosts (Rubin & Step, 2000), and literary characters (Schmid and Klimmt, 2011). As a staple in the field, it has also been used to assist with the development of future scales including the Audience-Persona Interaction Scale (Auter & Palmgreen, 2000) and Parasocial Breakup Scale (Cohen, 2003), and has been translated into German for use in non-English contexts (Gleich, 1996).

While this is the most widely used and most influential parasocial measure, it is not without its limitations. First, it was designed for specific media contexts (e.g., TV newscasters and soap opera actors). As noted above, the original scale was designed to

measure the parasocial interactions with TV newscasters, which is a very specific niche of television, and media in general. While the items can be adapted to fit other contexts, as seen by its pervasive use, the findings in these articles show mixed results in terms of the scale's validity when this is done. In addition, most researchers simply use the scale without assessing its validity or only reported the Cronbach's alpha internal consistency reliability (Rihl & Wegener, 2019; Kurtin et el., 2018; Schmid & Klimmt, 2011; Greenwood et al., 2008). The few that did examine the factor structure of the PSI after altering the items for a new context, showed mixed results either stating that the scale worked well and was found to be reliable and valid (Chung & Cho, 2017) or found that the factor structure did not match the original findings and chose to remove the items that did not fit into one factor (Cole & Leets, 1999). The second limitation of the PSI scale is the inconsistency of the factor solutions found. The original publication found the scale to be unidimensional, however more recent parasocial relationship measures have found multiple dimensions in their scales (e.g., the Audience-Persona Interaction scale, Celebrity-persona Parasocial Interaction Scale, PSI-Process Scales). Additionally, factor analysis on the German translation of the PSI scale was found to have a three factor solution (Gleich, 1996). Finally, when the PSI scale was created there was not a distinction between parasocial interactions and parasocial relationships, and the article uses them both interchangeably. There is now a clear distinction between the two which makes it unclear what this scale is truly measuring, although based on the scale's content and the distinction between interactions and relationships, the scale is most likely measuring parasocial relationships.

Parasocial Interaction Web Site Scale (PSI-Web Scale)

Building off the PSI scale, Hoerner (1999) created the Parasocial Interaction Website Scale (PSI-Web). This scale was developed to measure potential parasocial interactions between individuals and hosts or personalities on online websites. Being a direct modification of the PSI, it consists of 15 items that were slightly modified to fit the new online website context. Five of the original 20 items were removed from the scale that were directly related to either physical appearance or other aspects not applicable to websites. The response options for the scale were also taken directly from the PSI, consisting of a 5-point Likert scale from "strongly disagree" (1) to "strongly agree" (5). Unlike the PSI, the principal axis factor analysis found three factors as opposed to a unidimensional, one factor solution. However, these factors were not labeled or defined further than the items that they consisted of.

The PSI-Web scale, like the PSI scale, was also designed for a very specific context. Without additional validation analysis, this limits its use to measuring parasocial interactions with hosts or personalities only on websites. Another limitation of the scale is the factor analysis presented in the original article used to validate the scale (Hoerner, 1999). In the original article, the factor analysis found a three factor solution, however, the author states that one of the factors, which contained five items, "did not contribute to measures of parasocial interaction" (Hoerner, 1999). After removing these items and rerunning the analysis, a two factor solution was found, however, the final scale that was used and reported was the full 15 item measure. Finally, as was the case for the PSI scale, the PSI-Web scale was also created prior to the distinction between parasocial interactions

and parasocial relationships being established, raising questions about what the scale truly measures.

Audience-Persona Interaction Scale (API Scale)

The second most frequently used scale (Liebers & Schramm, 2019) is the Audience-Persona Interaction Scale (API) developed by Auter and Palmgreen (2000). In order to develop items for this scale, 54 undergraduate students were given four open-ended questions to respond to based on their favorite characters in their favorite situation comedy show. The responses to these questions were then used to develop 44 initial items for the scale with an additional three items added from Rubin et al.'s (1985) PSI scale to supplement perceived gaps in the measure. After administering the 47-item scale to 417 undergraduate students, factor analysis was used to reduce it to 22 items. While this scale was initially developed to measure the parasocial interactions with sitcom characters, it has since been adapted and used to measure parasocial interactions with YouTubers (Kurtin et al., 2018) and Korean celebrities (Chung & Cho, 2017).

Like the PSI, this scale also uses a 5-point Likert scale from "strongly disagree" (1) to "strongly agree" (5). The principal components analysis resulted in a four-factor solution that accounted for 49.9% of the total variance (Auter & Palmgreen, 2000). The four factors were labeled "Identification with Favorite Character" (Identify), "Interest in Favorite Character" (Interest), "Group Identification/Interaction" (Group), and "(liking) Favorite Character Problem Solving Abilities" (Problem) which had Cronbach's alphas of .87, .79, .83, and .85, respectively.

The API scale has two main limitations, both of which were also present in the previous two measures. The first is that it is highly specific context. Not only was the scale designed for use in a television medium, but it was also specifically designed for television sitcoms which further restricts several items to fictional characters as noted by Schramm & Hartmann (2008). While this isn't a limitation in and of itself, it does limit the survey's ability to be used in other contexts without first reassessing its validity. The second is its creation prior to parasocial interactions and parasocial relationships being established as distinct constructs. Together, these limitations hider the overall validity of the API scale and any research conducted with it, especially outside the media context which it was designed for (i.e., television sitcoms).

Parasocial Breakup Scale

In 2003, Cohen developed the Parasocial Breakup Scale, which was designed to measure individuals' response to the dissolution of a parasocial relationship. The Parasocial Breakup Scale adapted items from Barbra and Dion's breakup questionnaire (2000), which measures post-breakup reactions in interpersonal relationships, for a parasocial relationship context. The 13-item scale uses a 5-point Likert scale from "not true at all" (1) to "very true" (5). The pretest (i.e., a pilot survey using a convenience sample of adults), adult, and teen samples were found to have Cronbach's alphas of .77, .799, and .80, respectively. A factor analysis of the adult sample resulted in a two-factor solution, which they defined as the unidimensional construct of parasocial breakup and an unidentified external factor strongly related to breakup, together accounting for 48.6% of the total variance. Because of the specificity of the scale, it has not been adapted for additional

contexts, however it has been implemented in additional research on parasocial breakups (Eyal & Cohen, 2006).

The Parasocial Breakup Scale is unique in that it is not actually a measure of parasocial interactions or relationships, but instead the dissolution of a parasocial relationship. While it was found to have convergent validity with the PSI scale, it is limited in its use as it does not directly measure parasocial interactions itself. A larger limitation to the scale is in the factor analysis used to develop it. The analysis showed a two factor solution, however there was "no apparent theoretical explanation was found to differentiate the factors" (Cohen, 2003, p. 198). After comparisons to both one and two factor solutions, the author chose to use the one factor solution as it accounted for half of the total variance captured by the scale, even though it was not the best fitting model.

Celebrity-persona Parasocial Interaction Scale (CPPI Scale)

The Celebrity-persona Parasocial Interaction Scale (CPPI) was developed by Bocarnea and Brown (2007) to measure how individuals develop parasocial relationships with celebrities or popular fictional characters. The items for the CPPI were derived from other published scales including the PSI and API scales (Auter & Palmgreen, 2000; Cole & Leets, 1999; Rubin et al., 1985). This was the first scale that expanded parasocial relationships beyond television or talk radio, including other media such as sports, movies, and commercial advertisements. The CPPI consists of 20 items and used a 5-point Likert scale from "strongly disagree" (1) to "strongly agree" (5). Initial tests of the scale showed Cronbach's alpha values between .80 and .90. The factor analysis yielded a one factor solution, however the percent of the total variance accounted for was not reported. This

scale has been implemented wholly, or in part, in looking at the impact of parasocial relationships with a number of different celebrities including Diego Maradona (Brown & de Matviuk, 2010), Steve Irwin (Brown, 2010), Demi Lavato (Wong et al., 2017), and Pope John Paul II (Brown, 2009).

The primary limitation to the CPPI scale is the reporting of the validity analyses in the publication itself. While the authors mention several ways in which they validated the scale, they were vague about the methods and results. For example, the authors state a range for the Cronbach's alpha and that the item loadings during the factor analysis are "generally high" without listing the factor loadings or the percent of the total variance explained by the single factor solution (Bocarnea & Brown, 2007). This limitation, in addition to being based on earlier scales that were made before the distinction between parasocial interactions and parasocial relationships being established, limits the scale's overall validity.

PSI-Process Scales

In response to the distinctions in the definitions of parasocial interactions and parasocial relationships, Schramm and Hartmann (2008) developed the PSI-Process Scales specifically to measure the process of parasocial interactions during media exposure. These scales consist of fourteen 8-item measures, 112 items total, which can be used as a whole or in parts to measure different aspects of the parasocial interaction. The alpha levels for the scales ranged from .69 to .88. Each subscale contains four positively worded and four negatively worded items each in order to measure the valence of the parasocial interaction. All of the items use the same 5-point Likert scale from "not at all" (1) to "very much" (5),

and were designed to work for multiple TV formats (e.g., television shows, movies, sports, news, theater) without major modification. The PSI-Process Scales have been used to measure parasocial responses with theater performers, soap opera actors, and quiz show contestants (Schramm & Wirth, 2010), and with slight modifications actors and musicians (Wong et al., 2017), and actors and politicians (Gabriel et al, 2018). The PSI-Process Scales' only major limitation is the sheer length of the scales. While the authors do note that not all of the 14 scales must be used at a time, if a researcher was interested in measuring all of the different aspects of a parasocial interaction as defined by Schramm and Hartmann (2008), participants would then have to answer 112 items, not including any demographic or media based items.

Experience of Parasocial Interaction Scale (ESPI-Scale)

Hartmann and Goldhoorn (2011) also attempted to address parasocial interactions instead of relationships after the distinction was made between the two, by creating the Experience of Parasocial Interaction Scale (ESPI-Scale). This scale was designed to measure the intensity of a viewer's parasocial interactions with a persona. A pool of 38 items, which were based on the theoretical conceptualization of the parasocial interaction experience, was used to select items for the final scale. Six items with good psychometric qualities (e.g., high inter-item correlations, internal consistency, factor loadings that matched expectations) were selected to create the final scale. A varimax-rotated exploratory factor analysis resulted in a one factor solution with a Cronbach's alpha of .87. The discriminant validity of the ESPI-Scale was assessed against both the PSI and Parasocial Process scale finding that the ESPI-Scale did indeed measure a unique phenomenon from the other two

scales, supporting the idea that it was measuring parasocial interactions and not parasocial relationships. Unlike the other parasocial scales, this scale uses a 7-point Likert scale, ranging from 1 (I do not agree at all) to 7 (totally agree). The ESPI-Scale's only major limitation is in the factor analysis. Unlike the majority of other scales developed to measure parasocial interactions or relationships, the ESPI-Scale found a unidimensional solution. While this is not surprising given the length of the scale (i.e., six items), it does raise questions about how well the measure covers the construct.

Political Parasocial Relationships Scale (PPSR Scale)

ding the context in which parasocial relationships can develop, Cohen and Holbert (2018) developed the Political Parasocial Relationship (PPSR) scale. This 13 item scale, derived from the PSI scale, was designed to measure the intensity of parasocial relationships with any political candidate or elected official. Like the ESPI-Scale, the PPSR scale also uses a 7-point Likert scale, where 1 indicates strongly disagree and 7 indicates strongly agree. Initial analyses examined parasocial relationships with three different U.S. politicians, two republicans and one democrat. Exploratory factor analyses using maximum likelihood extraction and direct oblimin rotation found a one factor solution with Cronbach's alphas between .97 and .98. Follow up confirmatory factor analyses supported the findings of the EFA.

The PPSR scale is another highly contextually specific measure of parasocial relationships. While it does diverge from the traditional media context of just television, it is still limited to politicians and other public figures. Another limitation to the scale is the results of the factor analysis. Like the PSI scale and the ESPI-Scale, the PPSR scale was

found to be unidimensional which does not align with many of the other findings in the literature. The authors also reported that based on the factor analysis, one item in the scale was dropped from analyses as it consistently underperformed. However, the authors still included this underperforming item in the final scale.

Why a New Measure is Needed

While widely used in the literature, the existing scales are not without their limitations. Many of the scales, including the popular PSI and API scales, were developed for specific media contexts, and because of this, they do not lend well to assessing parasocial phenomena in other situations and other forms of media, such as social media interactions, without modification. While this is not unheard of in survey research, the modified surveys should not be used without assessing their reliability and validity within the new contexts. Using a measure that has not been validated, and is unsuitable for a population, may compromise the results, even if it was found to be valid in a different context (Stewart et al., 2012). Even the switch from paper surveys, which is how most of the scale reported in this paper were originally conducted, to electronic can cause validity concerns which should be investigated (Coons et al., 2009; Stewart et al., 2012). This is especially important given the assertion made by Dibble et al. (2016), that most parasocial interaction scales have not undergone adequate tests of construct validation. Dibble and colleagues mention the PSI scale specifically as lacking content validity due to it not being consistent with Horton and Wohl's conceptual definition or recent refinements to the parasocial relationship and interaction definitions. The lack of content validity is also shown by the fact that the PSI scale was found to be unidimensional when first developed,

while more recent scales and literature have found parasocial relationships and interactions to be multidimensional constructs (Schramm & Hartmann, 2008; Cohen, 2003; Auter & Palmgreen, 2000; Cole and Leets, 1999; Gleich, 1996). This further raises concerns about the validity of the PSI scale and its pervasive use in the literature. Additionally, as noted with several of the scales, the factor analysis and other validation decisions reported are not always clear or do not agree with the final version of the scale that is published.

The call for a distinction between parasocial relationships and parasocial interactions raises additional concerns. The PSI and API scales, which are the most widely used in the literature and which several other surveys (e.g., Celebrity-Persona Parasocial Interaction scale, Parasocial Interaction Web Site scale, and Political Parasocial Relationship scale) are based on, were developed in 1985 and 2000, respectively, as measures of parasocial relationships. However, the distinction between parasocial relationships and parasocial interactions did not become prevalent in the literature until 2002 (Giles, 2002; Schramm et al., 2002). Because of this some argue that these scales are actually measures of parasocial relationships (Dibble et al., 2016; Schramm & Hartmann, 2008), and not parasocial interactions as they are labeled. Schramm and Hartmann's response to this was to develop the PSI-Process scales to specifically measure parasocial interaction. While these scales have been validated in different contexts, they are very lengthy, containing 112 items.

What a New Measure for Parasocial Relationships Should Look Like

In order for research in the field of parasocial phenomena to continue growing, improvements need to be made in how we measure the constructs. The PSI and API scales,

and those that have been created using them, should be reassessed to determine which parasocial phenomena, parasocial relationships or parasocial interactions, they are truly measuring, and labeled as such. This will help improve the distinction between the two constructs that has been made in the literature over the last 20 years. Additionally, research should be conducted specifically on parasocial interactions in order to develop a more concise and reasonable scale that can be easily modified for different media contexts.

There is also a need for parasocial relationship and interaction scales to be developed for new media contexts (e.g., social media, blogs, and podcasts), whether it be from scratch or by modifying existing scales from the literature. The increase and diversity in media mediums, including social media platforms such as Twitter, Facebook, YouTube, and Twitch, provide an entirely new dimension for parasocial phenomena to be developed and studied. Additionally, assessing the invariance of these scales across different media mediums would allow parasocial research to continue expanding by allowing researchers to assess how these different mediums impact the strength and speed in which parasocial relationships develop. As was noted at the beginning of the paper, when parasocial relationships were first established, television was the most effective medium for developing these relationships (Horton & Strauss, 1957; Horton & Wohl, 1956). However, with the advent of the internet and social media, this may no longer be the case, and we cannot make a claim one way or another without having the means to effectively measure them in both contexts.

New measurement tools should also utilize the online options (e.g., Qualtrics, QuestionPro, and SurveyMonkey) that are available for survey research. Just as the

mediums through which parasocial phenomena can occur has grown, so have the options for administering surveys for collecting data. Using piping functions, where answers from previous questions can populate upcoming questions, offered by online survey tools can allow participants to indicate their persona of choice when discussing their parasocial relationships which can then be used to populate the scale's items, instead of leaving a blank or vague "insert name here" in items. This would continually prime participants with the persona of interest as they complete the survey.

Conclusion

Research on parasocial phenomena has been expanding rapidly over the past four decades, while the methods used to measure them have remained relatively stagnant and their current validity is questionable. Failing to update the methods used to measure parasocial phenomena not only prevents the field from growing, but also impacts the legitimacy of future findings that are published. It is essential that the instruments used to measure parasocial relationships evolve and improve as our understanding of the parasocial relationship constructs being studied evolves.

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CHAPTER II
DEVELOPMENT AND VALIDATION OF THE PARASOCIAL RELATIONSHIPS IN SOCIAL MEDIA SURVEY

Abstract

Social media provides new opportunities for parasocial relationships to be developed and strengthened on demand. While there are a number of existing surveys that have been used to measure parasocial relationships, none have been developed or validated to measure relationships developed through social media. The 22-item Parasocial Relationships in Social Media (PRISM) survey presented in this article has been designed and validated specifically to measure parasocial relationships individuals develop with celebrities in social media contexts. Exploratory factor analysis reveals the PRISM survey measures four dimensions of parasocial relations: Interest in, Knowledge of, Identification with, and Interaction with a given celebrity.

Introduction

In 1956, when Horton and Wohl first published their research on parasocial relationships, there were only two forms of media for audiences to consume: radio and television. At the time, Horton and Wohl asserted that television was the most effective medium through which a parasocial relationship could be developed (Horton & Wohl, 1956). Since then, technology has evolved to allow people easier access to media than ever. With the internet and smart devices (e.g., computers, phones, tablets) people can access media virtually anywhere and at any time. These technological advances not only increased the ease with which people can access media, but also created a new medium for parasocial relationships to be developed: social media. Through social media, content can be uploaded more frequently and accessed on demand allowing for more frequent parasocial

interactions, potentially leading to stronger parasocial relationships developing quicker than through traditional media formats. This not only creates an effective means for creating parasocial relationships, but also a unique experience where the relationships are being created with the celebrity themselves as opposed to a character which they portray.

These advancements open new opportunities for parasocial relationships to be researched. However, with this new context comes new questions of how to measure these types of unique relationships. Even with the current number of scales that have been developed to measure parasocial relationships in the past, such as the Parasocial Interaction Scale (Rubin et al., 1985), Audience-Persona Interaction Scale (Auter & Palmgreen, 2000), and Celebrity Persona Parasocial Interaction Scale (Bocarnea & Brown, 2007), there has yet to be one specifically developed to measure these relationships with online celebrities. Moreover, the existing measurement tools do not easily lend themselves to be applied to this context due to their wording and the specificity of some questions. For example, the Audience-Persona Interaction Scale (Auter & Palmgreen, 2000) refers to the celebrity as an actor and references characters which the celebrity portrays, and the Parasocial Interaction Scale (Rubin et al., 1986) scale examines newscasters and refers to their opinions on news stories. This, compounded with the increasing influence and presence of online celebrities, demonstrates the need for a valid and reliable scale to assess the parasocial relationships being developed through social media mediums.

Measuring Parasocial Relationships

Horton and Wohl (195215) first defined parasocial relationships as the "seeming[ly] face-to-face relationship between spectator and performer." These one-sided relationships

were made by the spectator with the performer's on-stage persona. Initially, the terms relationship and interaction were used interchangeably. It wasn't until the late 1990s and early 2000s that researchers started making the distinction between these two constructs (Giles, 2002; Schramm et al., 2002; Voderer, 1996). In general, the definition of parasocial relationships has remained true to Horton and Wohl's original definition, a relationship formed by a viewer with a performer that cannot be reciprocated by the performer. These are enduring, cross-situational relationships that extend beyond the initial act of media consumption (Rihl & Wegener, 2019). Parasocial interactions on the other hand, are the self-contained interactions that a viewer has when watching a performer in the media, which are limited to the duration of the media exposure (Vorderer, 1996). A parasocial relationship is developed and strengthened through repeated parasocial interactions. For example, one would experience a parasocial interaction while watching a video on YouTube posted by Sean "Jacksepticeye" McLoughlin, and through repeated interactions with different videos posted by him, the viewer would over time develop a parasocial relationship with him.

A number of different scales have been developed to measure parasocial phenomena. The most popular measures being the Parasocial Interaction Scale (PSI; Rubin et al., 1985) and Audience-Persona Interaction Scale (API; Auter & Palmgreen, 2000). While they are both listed as measuring parasocial interactions, they were both developed prior to the distinction between parasocial relationships and interactions being made, and some have argued that both surveys actually measure parasocial relationships (Dibble et al., 2016; Schramm and Hartmann, 2008). The PSI scale is a 20 item measure that can be

reduced to a more compact 10 items, while the API scale is a 22 item measure. Both scales use a 5-point Likert scale ranging from "strongly disagree" to "strongly agree". A notable difference between the two is the dimensionality of the scales. Both the full and compact versions of the PSI scale were found to be unidimensional, while the API scale has a four factor solution (i.e., Identification with Favorite Character, Interest in Favorite Character, Group Identification/Interaction, and Favorite Character Problem Solving Abilities). As research on parasocial phenomena has progressed, more support has been found showing parasocial relationships are not a unidimensional construct, raising questions about the validity of the PSI scale. Additionally, further concerns about measuring parasocial interactions have been raised by Dibble et al. (2016) who assert that most parasocial interaction scales have not undergone adequate tests of construct validation. These concerns along with the increase in new media contexts and mediums in which parasocial relationships can be developed, such as social media, provide new avenues for research and improvements to be made in how parasocial relationships are measured.

Purpose of Study and Research Objective

The purpose of this study is to create and validate the Parasocial Relationships in Social Media (PRISM) Survey which has been designed to measure the parasocial relationships people develop with online, social media celebrities. The primary research objective guiding the study is to determine whether the new survey is a valid and reliable measure for parasocial relationships. In addition to this question, we will also begin to assess the psychometric integrity of the PRISM survey by examining internal consistency reliability, as well as the content, construct, and face validity of the PRISM survey.

Method

Item Development

The primary method used to create the PRISM survey items was an extensive literature review. Parasocial relationship surveys from different contexts provided an underlying structure for the initial draft of survey questions, as well as provided an initial indication of the various constructs in which the items could be grouped. The Audience-Persona Interaction Scale (API; Auter & Palmgreen, 2000), Parasocial Interaction Scale (PSI; Rubin et al., 1985), and Celebrity-Persona Parasocial Interaction Scale (CPPI; Bocarnea & Brown, 2007) were all reviewed and compared to determine question overlap and unique questions to each survey. This resulted in 36 different question stems. For a comparison of the surveys used and the resulting items in the PRISM survey, see Appendix A.

Next, individual questions on each survey were determined to be relevant without modification, with modifications, or irrelevant to the social media context. For example, some questions such as "[the celebrity or persona] reminds me of myself" from the API Scale and "Learning about [celebrity or persona] is important to me" from the CPPI Scale were unmodified. Other questions such as "I have been seeking out information in the media to learn more [celebrity or persona]" from the CPPI Scale survey were slightly modified to update their verb tense or other word choice (e.g., "I seek out information in the media to learn more about [celebrity or persona]"). As suggested by Fink (2003), items were also adjusted to reflect consistent positive wording throughout the scale. In some cases, items were split into multiple items to prevent double barreled questions, as was the

case with the item "I seem to have the same beliefs or attitudes as [celebrity or persona]" from the API Scale. Many questions were removed entirely due to repetitiveness or specificity that made them unrelated to the current survey context (e.g., "When my favorite newscaster shows me how he or she feels about the news, it helps me make up my own mind about the news story.").

Once an initial draft of items was created, the items were organized based on an assessment of their meanings to four constructs: interest, identification, interaction, and knowledge consisting of 11, 9, 8, and 8 items, respectively. The first three constructs, interest, identification, and interaction were based on the constructs found in the API scale (Auter & Palmgreen, 2000), while the fourth construct, knowledge, was borrowed from Nordlund (1978) who also supported the interaction construct.

Content Validity: Expert Review Panel

Once the items had been developed, a four-person expert review panel, consisting of two experts in survey research methodology and two content area experts in social media and parasocial relationships, were asked to review the items individually and provide feedback on the face and content validity of the scale (Grant & Davis, 1997). Additionally, they were asked to provide their feedback on clarity of instructions and items, items that should be added, deleted or revised, issues with spelling or grammar, response scale of the items, and appropriateness of the flow of the survey, as well as to provide any other comments to help improve the scale.

The experts suggested new items, revised some items, and gave feedback on clarity of instructions and grammar. Based on the feedback, two items were split into two to avoid

potentially double barreled questions and two free response items were created for participants to expand more on the reasons they follow the celebrity as well as any additional information they would like to share about their relationship with the celebrity.

The data collection scale for the PRISM survey was finalized with the experts' comments and suggestions. The pilot survey consisted of 51 items. The survey began with five items in order to identify the celebrity, when the participant began following the celebrity, how often the participant interacts with the celebrity, what social media platform the participant primarily uses, and what other platforms the participant follows the celebrity on. The earliest year a participant can indicate they started following the celebrity is 1997 as that is the earliest known date of an online social media platform being active (Boyd & Ellison, 2007). Following this introduction are 36 items on the parasocial relationship which participants are asked to indicate their level of agreement with the statement using a five-point Likert scale of Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, and Strongly Agree with a sixth Does not Apply option. There are also two free response items for participants to expand more on the reasons they follow the celebrity as well as any additional information they would like to share about their relationship. Finally, the survey concludes with six participant demographic questions (e.g., How old are you?; What is your Race/Ethnicity?). See Appendix B for complete list of survey items and response options from the pilot study.

Construct Validity: Exploratory Factor Analysis

Once finalized, the survey was used to collect data which was then analyzed using an exploratory factor analysis (EFA) with principal components extraction and direct oblimin

rotation. This allows us to find a unique solution that extracts the maximum variance from the data while reducing the items down into a smaller number of components (Tabachnick & Fidell, 2007). Principal components extraction was determined to be an appropriate extraction method as the percentage of total variance extracted was greater than 50% (Pett, Lackey, & Sullivan, 2003). Direct oblimin rotation was used because we theorized that the factors would be related, and as an oblique rotation, the rotation assumes the factors to be correlated with each other (Pett, Lackey, & Sullivan, 2003). The EFA allowed us to uncover the survey's underlying factor structure and determine whether the items comprised a coherent set of factors that measure aspects of parasocial relationships. Cronbach's alpha values for the factors were used to assess the internal consistency reliability for each factor. Higher values (>.80) indicate that the items within the construct yield the same results, however scores between .70 and .80 have been accepted in psychological science before (Cortina, 1993).

Sampling and Recruitment of Participants. The population of interest for the survey validation was anyone over the age of 18 who followed an online celebrity/content creator on some form of social media (e.g., Facebook, TikTok, YouTube). Due to the broad population of interest, there was no central location in which the participants were selected to participate. This allowed data collection on an international scale using QuestionPro, which included 44 different countries. The use of an online survey also allowed participants to respond whenever was most convenient to them without a proctor, with no cost to the researchers or participants. However, the use of an online survey limited participant recruitment to convenience and snowball sampling. The survey was

posted on several social media platforms including Reddit, OnlyFans, Facebook, and LinkedIn (See Appendix C for recruitment materials). Additionally, professors that teach communication or social media at four U.S. universities were contacted via email, asking if they would be willing to send the survey out to their students (See Appendix D for request email). Those who agreed, were requested to forward the recruitment materials with a link to the online survey to their students via email.

Data Cleaning. Data cleaning was conducted using the *Twelve steps of quantitative data cleaning* (Morrow, 2017). Any participants that listed they were under 18, not following a celebrity, or did not provide informed consent were immediately screened out by the survey platform. Only participants who had complete responses for the 38 main survey items were retained for the analysis, resulting in an N of 602. Additionally, any participants who listed multiple different celebrities, celebrities who do not primarily use social media for their interactions (i.e., actors and musicians), or fake names for the celebrity they follow were removed. The celebrities listed were also recoded to provide uniformity by correcting spelling mistakes, abbreviations, and pseudonyms or stage names.

Participants. Data collection lasted for five weeks, during which participants were able to complete the survey at any time using a computer, phone, or tablet. After the data cleaning process, 1208 people had responded to the survey. The sample was split in half at random, and 602 participants' responses were used in the EFA[1], which is well over the

[1] The rest of the sample will be used for a follow up confirmatory factor analysis to further validate the observed factor structure.

absolute minimum required for the analysis (N = 50; de Winter, Dodou, and Wieringa, 2009). The average age of the participants was between 23 and 24 years old (M = 23.75, SD = 6.29) and ranged from 18 to 60 years old. The majority of participants identified as female (41.9%), followed by male (39.9%), and participants were primarily Caucasian/white (70.8%). Most participants indicated having some college education but no degree (33.2%), followed by having obtained a bachelor's degree (24.8%). A third of participants indicated that they are full time students (33.4%), and a quarter indicated they were employed, working 40 or more hours per week (26.2%).

Respondents listed 245 different online celebrities they were following, and the majority of participants indicated that they interact with the celebrity's content either daily (24.6%) or 3 to 5 days per week (32.2%). The majority of participants indicated that they began following the celebrity in either 2018 (14.6%), 2019 (16.9%), or 2020 (21.6%), with dates ranging from 2005 to 2021. The most common primary platforms they followed the celebrity on were YouTube (72.8%) and Twitch (17.4%), but nearly all (92.5%) also indicated that they are following the celebrity on more than one social media platform.

Results

Before performing the exploratory factor analysis, we checked the factorability of the correlation matrix by determining if the matrix was an identity matrix and examining the proportion of variance among variables that might be common variance with the Bartlett's test of sphericity and Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy, respectively. The Bartlett's test was significant, $\chi^2(231) = 5041.97$, $p < 0.001$, indicating that the correlation matrix was not an identity matrix. The KMO test was 0.91 suggesting

marvelous factorability of the item set (Pett, Lackey, & Sullivan, 2003). In addition, item measures of sampling adequacy ranged between .848 and .959, further confirming the factorability of the data. These results provided evidence that the use of factor analysis was appropriate for the dataset.

A preliminary principal components extraction with direct oblimin rotation was used to determine the number of factors to extract; initially, any factor with eigenvalues greater than 1.0 was extracted (Kaiser, 1960). The proportion of variance explained by each factor and visual assessments of the Scree plot were also used to help determine the number of factors to retain (Cattell, 1966). The decision to retain factors based on the Kaiser and Scree criterion as opposed to forcing the hypothesized four factor solution was to explore other potential factors that may have emerged with the addition of the new items. Direct oblimin rotation was chosen because it is an oblique rotation that allows correlations between factors. The Kaiser and Scree criteria resulted in eight factors with eigenvalues greater than 1.0, however, there were several items with either complex loadings (i.e., loaded highly on more than one factor) or did not load >.32 onto any of the factors that needed to be deleted. The factor extraction was repeated and items with low or complex loadings were deleted. This procedure was iterated until simple structure was achieved (i.e., each item loads highly onto one and only one factor), resulting in 22 items that loaded at least .52 on one of four remaining factors, with no complex loadings. See Table 1 for a list of items, factor loadings, and communalities. In order to ensure the factor solution was stable across extraction and rotation methods, we ran another EFA using a Principal Axis Factoring extraction and promax rotation and found the same four factor

solution. The final rotated four-factor, 22 item solution of the PRISM survey accounted for 58.8% of the variance in the item set. See Appendix E for final survey.

The first factor, *Interest In* (α = .83), contained seven items and accounted for 34.4% of the variance. Items comprising this factor reflected participants' interest in the indicated social media celebrity and the content that they create. Sample items include "I am interested in [NAME]." and "I look forward to seeing [NAME] 's content."

The second factor, *Knowledge Of* (α = .83), contained five items and accounted for 11.3% of the variance. This factor included items that reported participants' desire to learn more about the social media celebrity. Sample items include "I seek out information to learn more about [NAME]." and "Learning about [NAME] is important to me."

The third factor, *Identification With* (α = .84) included six items and accounted for 7.6% of the variance. Items represented participants' perceptions of how similar they were to the social media celebrity which they indicated. Sample items include "I have many of the same opinions as [NAME]." and "I usually make the same choices as [NAME]."

The fourth factor, *Interaction With* (α = .78), included four items and accounted for 5.5% of the variance. These items indicated the participants' feelings of social and friendship connections with the online celebrity. Representative items are "[NAME] makes me feel as if I am with a friend." and "[NAME] keeps me company when viewing their content."

Table 2. Pattern Matrix Factor Loadings, Coefficient Alphas, and Communalities (h^2) for Items in PRISM Survey.

Item	Factor Loading	h^2
Interest In (α = .83)		
I look forward to seeing [NAME]'s content.	.81	.655
I like to see content that [NAME] has made.	.75	.642
I am interested in [NAME].	.72	.493
I care about what happens to [NAME].	.67	.656
I hope [NAME] achieves their goals.	.66	.547
I would follow [NAME] on another account if they create one on the same social media site that I already follow them on.	.62	.471
I like to see content that [NAME] is in that they did not make themselves.	.54	.354
Knowledge Of (α = .83)		
When I come across information about [NAME] I will search to learn more about them.	.84	.776
I seek out information to learn more about [NAME].	.84	.753
Learning about [NAME] is important to me.	.71	.693
I am aware of the personal details of [NAME]'s life.	.60	.446
If I saw a story about [NAME], I would read it.	.52	.453
Identification With (α = .84)		
I have many of the same beliefs as [NAME].	.86	.686
I have many of the same opinions as [NAME].	.84	.708
I usually agree with [NAME].	.78	.702
I usually make the same choices as [NAME].	.64	.519
I can relate to [NAME]'s attitudes.	.63	.510
I like the way [NAME] handles problems.	.54	.470
Interaction With (α = .78)		
[NAME] makes me feel as if I am with a friend.	.80	.726
[NAME] keeps me company when viewing their content.	.77	.617
I can imagine myself as [NAME]'s friend.	.66	.560
[NAME] understands the kinds of content I want to see.	.65	.489

Discussion

The purpose of this study was to create the PRISM survey, which was designed to measure the parasocial relationships individuals develop with online, social media celebrities, while also beginning to assess its psychometric properties. The EFA not only produced a simple, four factor solution, but also aligned well with the constructs already present in the literature. Interest in, identification with, and interaction with all mirror constructs found in Auter and Palmgreen (2000)'s Audience-Persona Interaction Scale, while both interaction with and knowledge of mirror constructs found by Nordlund (1978)'s survey of media interaction.

Within the PRISM scale the *Interest in* construct is a broad category of items that deals with the level of concern for, perceived attractiveness of, and devotion to the celebrity. Items in this construct address the viewers willingness to follow the celebrity to other media platforms as well as their care for the celebrity's wellbeing and success (Auter & Palmgreen, 2000). *Knowledge of*, refers specifically to the viewer's knowledge of the celebrity and is similar to the Knowledge construct found by Nordlund (1978). This includes the viewer's perceived knowledge of the celebrity's life as well as whether or not they seek out more information about the celebrity of interest outside the media they are presented. These items, while similar to some aspects of the interest in construct, do not deal with attachment to the celebrity, but rather curiosity and fascination with them. The third construct present is *Identification with*, which is similar to the identify or identification with favorite character factor from Auter and Palmgreen (2000)'s Audience-Persona Interaction Scale. The *Identification with* construct refers to the perceived

similarities between the celebrity and the viewer. This includes aspects such as sharing qualities, opinions, and agreeing with the celebrity. The final construct, *Interaction with*, contains items addressing social aspects involved with viewing the celebrity in media. This includes physical actions such as actively speaking to the celebrity as well as perceived feelings such as being with a friend. This factor is similar to the group identification factor in the API scale and "participating" in what is happening to the characters from Nordlund's (1978) survey of media interest.

In addition to the quantitative measures for the survey's construct validity and internal consistency reliability, the survey's content and face validity were also assessed prior to data collection through the expert review panel (Grant & Davis, 1997). Content and face validity were further enhanced by using existing parasocial relationship survey items during the item development process. The construct validity for the survey is also supported by the fact that all of the items loaded in the original factor groups that were expected based on the initial groupings made prior to conducting the EFA. Unfortunately, convergent validity using an existing parasocial relationship survey (e.g., API, CPPI) was not assessed as many items from these existing surveys were used when creating the current survey, making it redundant to include those questions a second time.

The development of the PRISM survey allows researchers to measure parasocial relationships more effectively in the ever expanding online social media landscape[2]. Future

[2] Future validation plans include verifying factor structure using a confirmatory factor analysis.

researchers could use PRISM to measure parasocial relationships developed across social media platforms to determine which platforms are most effective at fostering relationships, in terms of strength, speed, and longevity. Future research could also assess the types of individuals that develop parasocial relationships as well as what aspects of parasocial relationships are most influential among different identity groups and through which social media platforms are these groups most inclined to develop parasocial relationships. Research should also be dedicated to examining the validity of the PRISM survey in other languages, as parasocial relationships are not unique to one group or culture. While the present study did collect data on an international scale, it was limited in that the survey was only offered in one language (i.e., English). As was the case for the PSI scale, translating the PRISM scale into other languages to be validated and used internationally would help further the research on parasocial relationships across the world.

The development of the PRISM survey opens a new realm in which parasocial relationship research can be conducted. With the increasing prevalence of social media platforms and the ease of access to them, the opportunities for people to develop parasocial relationships are greater than ever. With this survey, researchers can begin to explore the relationships developed through these mediums without sacrificing validity by using improper or non-validated measures.

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APPENDIX A

Table 3. Comparison Table of Surveys Used to Create PRISM Survey.

Audience-Persona Interaction Scale (Auter & Palmgreen, 2000)	**Celebrity-Parasocial Interaction Scale (Bocarnea & Brown, 2007)**	**Parasocial Interaction Scale (Rubin et al., 1986)**	**Parasocial Relationships in Social Media Survey**
FAV reminds me of myself.			[NAME] reminds me of myself.
I have the same qualities as FAV.			I have many of the same qualities as [NAME].
I seem to have the same beliefs or attitudes as FAV.			I have many of the same beliefs as [NAME].
			I have many of the same opinions as [NAME].
I can imagine myself as FAV.			I can imagine myself as [NAME]'s friend. NEW
I would like to meet the actor who played FAV.	I would like to meet [celebrity or persona] in person.	I would like to meet my favorite newscaster in person.	I would like to meet [NAME].
I would watch the actor on another program.	If [celebrity or persona] appeared on a TV program, I would watch that program.	If my favorite newscaster appeared on another television program, I would watch that program.	I would watch [NAME] on another channel or media platform such as Twitch, Facebook, or Television. (i.e. other streaming platform, social media, television).
I hoped FAV achieved his or her goals.			I hope [NAME] achieves his or her goals.
I care about what happens to FAV.			I care about what happens to [NAME].

Table 3 continued

Audience-Persona Interaction Scale (Auter & Palmgreen, 2000)	Celebrity-Parasocial Interaction Scale (Bocarnea & Brown, 2007)	Parasocial Interaction Scale (Rubin et al., 1986)	Parasocial Relationships in Social Media Survey
I like hearing the voice of FAV.		I like hearing the voice of my favorite newscaster in my home.	I like hearing [NAME]'s voice.
		My favorite newscaster keeps me company when the news is on television.	[NAME] keeps me company when his or her videos are on.
While watching show, I felt included in the group.		When I'm watching the newscast, I feel as if I am part of their group.	While watching [NAME]'s videos or streams, I feel included in the community.
I can relate to CHARS' attitudes.			I can relate to [Blanks]'s attitudes.
I like the way FAV handles problems.			I like the way [NAME] handles problems.
I would like to be more like FAV.			I would like to be more like [NAME].
I usually agreed with FAV.			I usually agree with [NAME].
I usually would have done the same thing as the character			I usually would make the same choices as [NAME].
	Learning about [celebrity or persona] is important to me.		Learning about [NAME] is important to me.
	I have been seeking out information in the media to learn more [celebrity or persona].		I seek out information in the media to learn more about [NAME].

Table 3 continued

Audience-Persona Interaction Scale (Auter & Palmgreen, 2000)	Celebrity-Parasocial Interaction Scale (Bocarnea & Brown, 2007)	Parasocial Interaction Scale (Rubin et al., 1986)	Parasocial Relationships in Social Media Survey
	I sometimes go to the internet to obtain more information about [celebrity or persona].		I have gone to the internet to obtain more information about [NAME].
	Sometimes I feel like calling or writing [celebrity or persona].		I have tried to contact [NAME] before through live chat, comments, or online posts.
	I like to watch [celebrity or persona] on television.		I like to watch videos that [NAME] is in.
			I like to watch videos that [NAME] has made.
	[celebrity or persona] understands the kinds of things I want to know.	When my favorite newscaster reports a story, he or she seems to understand the kinds of things I want to know.	[NAME] understands the kinds of things I want to see in videos.
	I sometimes make remarks to [celebrity or persona] while watching television.	I sometimes make remarks to my favorite newscaster during the newscast.	I sometimes make remarks to [NAME] while watching videos.
	I am very much aware of the details of [celebrity or persona]'s life.		I am aware of the details of [NAME]'s life.
	I feel like I have very little understanding of [celebrity or persona] as a person.		I feel like I understand [NAME] as a person.

Table 3 continued

Audience-Persona Interaction Scale (Auter & Palmgreen, 2000)	Celebrity-Parasocial Interaction Scale (Bocarnea & Brown, 2007)	Parasocial Interaction Scale (Rubin et al., 1986)	Parasocial Relationships in Social Media Survey
	I look forward to seeing [celebrity or persona] on television or in the print media.	I look forward to watching my favorite newscaster on tonight's news.	I look forward to seeing [NAME]'s videos.
	I am not really interested in [celebrity or persona].		I am interested in [NAME].
	[celebrity or persona] makes me feel as if I am with someone I know well.	The newscasters make me feel comfortable, as if I am with friends.	[NAME] makes me feel as if I am with a friend.
	I see [celebrity or persona] as a natural down-to-earth person.	I see my favorite newscaster as a natural, down-to-earth person.	I see [NAME] as a down-to-earth person.
	If I saw a newspaper or magazine story about [celebrity or persona], I would read it.	If there were a story about my favorite newscaster in a newspaper or magazine, I would read it.	If I saw a news story about [NAME], I would read it.
	I feel that I understand the emotions [celebrity or persona] experiences.		I feel that I understand the emotions [NAME] experiences.
	I find myself thinking about [celebrity or persona] on a regular basis.		I find myself thinking about [NAME] on a regular basis.
		I find my favorite newscaster to be attractive.	I think [NAME] is attractive.

Table 3 continued

Audience-Persona Interaction Scale (Auter & Palmgreen, 2000)	Celebrity-Parasocial Interaction Scale (Bocarnea & Brown, 2007)	Parasocial Interaction Scale (Rubin et al., 1986)	Parasocial Relationships in Social Media Survey
		I am not as satisfied when I get my news from a news- caster different than my favorite newscaster.	I am not as satisfied when I watch the same types of videos from a different YouTuber than [NAME].

APPENDIX B

Table 4. Pilot Study Survey.

Introduction Items

Variable Label	Response Options	
Please begin by filling in the blank with the name of your favorite online celebrity.	FRQ	
In what year did you first start following [NAME]	From 2005 to 2021 or I don't remember	
On average, how often do you interact with [NAME]'s posts online?	More than once a day Daily 3 to 5 days per week Once a week Once every two weeks Once a month 3-5 times a year Twice a year or less	
What is the primary platform that you watch [NAME] on?	Facebook Instagram OnlyFans Reddit Snapchat Tik Tok	Tumblr Twitch Twitter YouTube Other
Select all platforms that you follow [NAME] on.	Facebook Instagram OnlyFans Reddit Snapchat Tik Tok	Tumblr Twitch Twitter YouTube Other Other2

Table 4 continued
Main Survey Items

Response Options 1 = Strongly Disagree 2 = Disagree 3 = Neither Agree nor Disagree 4 = Agree 5 = Strongly Agree 6 = Does not Apply
I am interested in [NAME].
I hope [NAME] achieves their goals.
I care about what happens to [NAME].
I find myself thinking about [NAME] on a regular basis
I like hearing [NAME] 's voice.
I think [NAME] is attractive.
I look forward to seeing [NAME] 's content.
I like to see content that [NAME] has made.
I like to see content that [NAME] is in that they did not make themselves.
I would follow [NAME] on another account if they create one on the same social media site that I already follow them on.
I would follow [NAME] on a different social media platform if they made an account.
I am not as satisfied when I see the same type of content from a different creator than [NAME].
[NAME] reminds me of myself.
I have many of the same qualities as [NAME].
I have many of the same beliefs as [NAME].
I have many of the same opinions as [NAME].
I can relate to [NAME] 's attitudes.
I usually agree with [NAME].
I like the way [NAME] handles problems.
I usually make the same choices as [NAME].
I would like to be more like [NAME].
[NAME] keeps me company when viewing their content.
I sometimes make remarks to [NAME] out loud while viewing their content.
[NAME] understands the kinds of content I want to see.
[NAME] makes me feel as if I am with a friend.
I can imagine myself as [NAME] 's friend.
I would like to meet [NAME].

Table 4 continued

Response Options
1 = Strongly Disagree 2 = Disagree 3 = Neither Agree nor Disagree 4 = Agree 5 = Strongly Agree 6 = Does not Apply
I have thought about trying to contact [NAME] through live chat, comments, or online posts.
I have tried to contact [NAME] through live chat, comments, or online posts.
While watching a video or stream by [NAME], I feel included in the community.
Learning about [NAME] is important to me.
I seek out information to learn more about [NAME].
When I come across information about [NAME] I will search to learn more about them.
I am aware of the personal details of [NAME] 's life.
If I saw a story about [NAME], I would read it.
I feel like I understand [NAME] as a person.
I feel that I understand the emotions [NAME] experiences.
I see [NAME] as a down-to-earth person.

Free Response Items

Variable Label	Response Options
Please describe the reasons why you follow [NAME].	FRQ
Is there anything else you would like to share about your relationship to [NAME]?	FRQ

Demographic Items

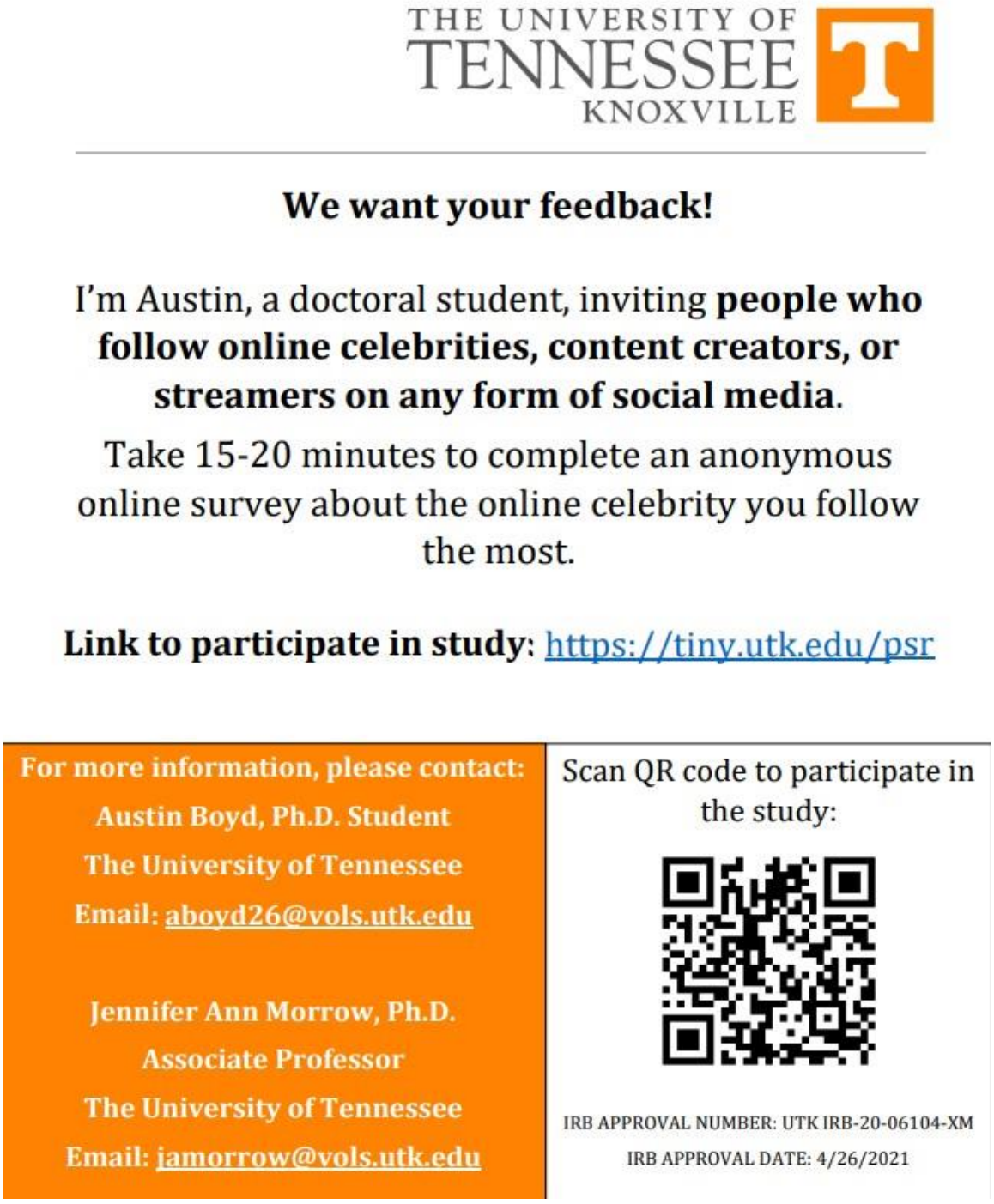
Variable Label	Variable Values	
How old are you?	From 18 to 100	
What is your Race/Ethnicity?	American Indian or Alaska Native Asian Caucasian or White Black or African American Hispanic, Latinx, or Spanish origin	Middle Eastern or North African Native Hawaiian or other Pacific Islander Multiracial Prefer not to answer Other
What was your biological sex assigned at birth?	Male Female Prefer not to answer	

Table 4 continued

Variable Label	Variable Values	
What is your current gender identity?	Agender	Transgender
	Genderqueer	Trans man
	Genderfluid	Trans woman
	Man	Woman
	Non-binary	Bi-gender
	Questioning or unsure	Prefer not to answer
What is the highest level of school you have completed?	Less than high school degree	Associate degree
	High school degree or equivalent (e.g., GED)	Bachelor's degree
	Some college but no degree	Graduate degree
	Trade/technical/vocational training	Prefer not to answer
Which of the following categories best describes your employment status?	Employed, working 1-39 hours per week	Student
	Employed, working 40 or more hours per week	Retired
	Not employed, looking for work	Disabled, not able to work
	Not employed, NOT looking for work	Prefer not to answer

APPENDIX C

Figure 1. Recruitment Flyer.



APPENDIX D

Recruitment Email

Hello,
My name is Austin Boyd, and I am a doctoral student inviting you to participate in a research study about relationships formed with online celebrities. This research study consists of a brief anonymous online survey asking about your opinions on a social media celebrity you follow online that should take you between 15-30 minutes to complete. The data from this survey will be shared with higher education individuals that work with social media research on this topic.

There are minimal risks to this study and responses will be kept completely anonymous by the researchers. Your participation is voluntary, and there is no compensation for participating. If you wish to participate in this study please click on the link below:

SURVEY LINK HERE

Do you know of anyone that might be interested in participating? Please feel free to pass this survey link along to them!

Thank you for your time! Please let us know if you have any questions.

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APPENDIX E

Parasocial Relationships in Social Media Survey

Survey of Relationships with Online Celebrities

Hello!

Do you have a favorite online celebrity that you follow? If so, we are interested in learning about the relationships you have formed with this online celebrity!

This survey is designed to help learn about individuals' relationships with online celebrities, such as YouTuber's, Twitch Streamers, and other social media personalities. The purpose of this study is to determine what draws the viewer to an online celebrity and establishes the perceived relationship.

This survey should take no more than 15-20 minutes to complete and will provide valuable information on individuals' relationships with online celebrities. Every effort is made to ensure that all responses to this survey are kept strictly confidential.

If you agree to take part in this research study, you will be asked to complete the following sets of questions. This survey will ask you about your level of agreement with statements about the online celebrity you indicate and your interactions with that person.

If you have any questions, comments, or concerns about the survey, please email Austin Boyd at aboyd26@vols.utk.edu.

Thank you for your time. We really appreciate your input!

Before we begin, please answer the following two questions to determine your eligibility for this survey.

	Yes	No
Are you over the age of 18?	○	○
Do you currently follow an online celebrity/content creator on some form of social media (e.g. Facebook, TikTok, YouTube, etc.)?	○	○

Branching (Option A: Both questions are answered Yes)

Directions:

Please begin by filling in the blank with the social media account name of **your favorite** online celebrity. This can be online from YouTube, Twitch, Instagram, Facebook, or any other social media platform. Use their social media account name. For example, Jacksepticeye instead of Sean Mcloughlin. Please only put one social media account name in the box. This question is required in order to populate the rest of the survey questions with the name you provide.

[NAME HERE]

In what year did you first start following [NAME HERE]?

- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
- 2017
- 2018
- 2019
- I don't remember

On average, how often do you interact with [NAME HERE]'s posts online (watch videos, comment on posts, etc.)? Please select the answer that is most appropriate.

- More than once a day
- Daily
- 3 to 5 days per week
- Once a week
- Once every two weeks
- Once a month
- 3-5 times a year
- Twice a year or less

What is the primary platform that you follow [NAME HERE] on?

- Facebook
- Instagram
- OnlyFans
- Reddit
- Snapchat
- TikTok
- Tumblr
- Twitch
- Twitter
- YouTube
- Other _____

Select all platforms that you follow [NAME HERE] on.

- Facebook
- Instagram
- OnlyFans
- Reddit
- Snapchat
- TikTok
- Tumblr
- Twitch
- Twitter
- YouTube
- Other _____
- Other _____

Please indicate your level of agreement or disagreement with the following statements about [NAME HERE]. The survey asks for your level of agreement (how much you agree or disagree with) a given statement with response choices of: **Strongly Disagree** (SD), **Disagree** (D), **Neither Agree nor Disagree** (N), **Agree** (A), **Strongly Agree** (SA), and **Does not Apply** (NA). Please mark the circle in the corresponding box for your level of agreement. Read the statements for each item and answer honestly and to the best of your ability for each.

EXAMPLE:

	SD	D	N	A	SA	NA
I am interested in Jacksepticeye.	○	○	○	○	•	○

	SD	D	N	A	SA	NA
I am interested in [NAME HERE].	○	○	○	○	○	○
I hope [NAME HERE] achieves their goals.	○	○	○	○	○	○
I care about what happens to [NAME HERE].	○	○	○	○	○	○
I look forward to seeing [NAME HERE]'s content.	○	○	○	○	○	○
I like to see content that [NAME HERE] has made.	○	○	○	○	○	○
I like to see content that [NAME HERE] is in that they did not make themselves.	○	○	○	○	○	○
I would follow [NAME HERE] on another account if they create one on the same social media site that I already follow them on.	○	○	○	○	○	○

Please indicate your level of agreement or disagreement with the following statements about [NAME HERE]. The survey asks for your level of agreement (how much you agree or disagree with) a given statement with response choices of: **Strongly Disagree** (SD), **Disagree** (D), **Neither Agree nor Disagree** (N), **Agree** (A), **Strongly Agree** (SA), and **Does not Apply** (NA). Please mark the circle in the corresponding box for your level of agreement. Read the statements for each item and answer honestly and to the best of your ability for each.

EXAMPLE:

	SD	D	N	A	SA	NA
I am interested in Jacksepticeye.	○	○	○	○	•	○

	SD	D	N	A	SA	NA
I have many of the same beliefs as [NAME HERE].	○	○	○	○	○	○
I have many of the same opinions as [NAME HERE].	○	○	○	○	○	○
I can relate to [NAME HERE]'s attitudes.	○	○	○	○	○	○
I usually agree with [NAME HERE].	○	○	○	○	○	○
I like the way [NAME HERE] handles problems.	○	○	○	○	○	○
I usually make the same choices as [NAME HERE].	○	○	○	○	○	○

Please indicate your level of agreement or disagreement with the following statements about [NAME HERE]. The survey asks for your level of agreement (how much you agree or disagree with) a given statement with response choices of: **Strongly Disagree** (SD), **Disagree** (D), **Neither Agree nor Disagree** (N), **Agree** (A), **Strongly Agree** (SA), and **Does not Apply** (NA). Please mark the circle in the corresponding box for your level of agreement. Read the statements for each item and answer honestly and to the best of your ability for each.

EXAMPLE:

	SD	D	N	A	SA	NA
I am interested in Jacksepticeye.	○	○	○	○	•	○

	SD	D	N	A	SA	NA
[NAME HERE] keeps me company when viewing their content.	○	○	○	○	○	○
[NAME HERE] understands the kinds of content I want to see.	○	○	○	○	○	○
[NAME HERE] makes me feel as if I am with a friend.	○	○	○	○	○	○
I can imagine myself as [NAME HERE]'s friend.	○	○	○	○	○	○

Please indicate your level of agreement or disagreement with the following statements about [NAME HERE]. The survey asks for your level of agreement (how much you agree or disagree with) a given statement with response choices of: **Strongly Disagree** (SD), **Disagree** (D), **Neither Agree nor Disagree** (N), **Agree** (A), **Strongly Agree** (SA), and **Does not Apply** (NA). Please mark the circle in the corresponding box for your level of agreement. Read the statements for each item and answer honestly and to the best of your ability for each.

EXAMPLE:

	SD	D	N	A	SA	NA
I am interested in Jacksepticeye.	○	○	○	○	•	○

	SD	D	N	A	SA	NA
Learning about [NAME HERE] is important to me.	○	○	○	○	○	○
I seek out information to learn more about [NAME HERE].	○	○	○	○	○	○
When I come across information about [NAME HERE] I will search to learn more about them.	○	○	○	○	○	○
I am aware of the personal details of [NAME HERE]'s life.	○	○	○	○	○	○
If I saw a story about [NAME HERE], I would read it.	○	○	○	○	○	○

The following section of demographic questions is being collected for research purposes only. Your answers will only be used to look for potential differences in responses to the previous questions between different demographic groups. Again, every effort is made to ensure that all responses to this survey are kept strictly confidential.

Please select the answer for each of the following questions that most accurately represents you. Read the statements for each item and answer honestly and to the best of your ability for each.

How old are you? Drop down menu from 18 to 100

What is your Race/Ethnicity? Choose all that apply.

- American Indian or Alaskan Native
- Asian
- Black or African-American
- Hispanic, Latinx, or Spanish origin
- Middle Eastern or North African
- Native Hawaiian or other Pacific islander
- White
- Prefer not to answer
- Some other race (please specify) _____

What was your biological sex assigned at birth?

- Male
- Female
- Prefer not to answer

What is your current gender identity?

- Agender
- Genderqueer
- Genderfluid
- Man
- Non-binary
- Questioning or unsure
- Transgender
- Trans man
- Trans woman
- Woman
- Additional gender category/identity (please specify) _____
- Prefer not to answer

What is the highest level of school you have completed?

- Less than high school degree
- High school degree or equivalent (e.g., GED)
- Some college but no degree
- Trade/technical/vocational training
- Associate degree
- Bachelor degree
- Graduate degree
- Prefer not to answer

Which of the following categories best describes your employment status?

- Employed, working 1-39 hours per week
- Employed, working 40 or more hours per week
- Not employed, looking for work
- Not employed, NOT looking for work
- Student
- Retired
- Disabled, not able to work
- Prefer not to answer

Thank you for your participation in the survey! Your responses have been recorded. If you would like a copy of the study when it is complete or have any questions or concerns, please feel free to contact Austin Boyd at aboyd26@vols.utk.edu.

Do you know of someone that might be interested in participating in this study? Please feel free to pass this survey link along to them: **tiny.utk.edu/IDS**

You may now exit out of your web browser.

Branching (Option B: either question is left unanswered or is answered No)

Thank you for your time. Unfortunately, you are not eligible to participate in this research study.

Do you know of someone that might be interested in participating in this study? Please feel free to pass this survey link along to them: **tiny.utk.edu/IDS**

You may now exit out of your web browser.

CHAPTER III
CONSTRUCT VALIDATION AND MEASUREMENT INVARIANCE OF THE PARASOCIAL RELATIONSHIPS IN SOCIAL MEDIA SURVEY

Abstract

As social media continues to grow and become more entwined in everyday life, the potential for parasocial relationships to be developed with celebrities on these platforms increases. The Parasocial Relationships in Social Media (PRISM) Survey was designed to provide researchers with a valid and reliable method for measuring parasocial relationships developed in a social media context. The primary purpose of this paper is to further demonstrate its construct validity of the survey and examine the measurement invariance of the PRISM Survey across social media platforms. A confirmatory factor analysis indicated the survey provides an adequate measure of parasocial relationships with online, social media celebrities, replicating the factor structure found by Boyd et al. (2022) and providing evidence of the construct validity of the survey. Additionally, scalar measurement invariance was achieved which supports the survey's ability to compare parasocial relationships across different social media platforms.

Introduction

Parasocial relationships are intrinsic to modern media consumption. These one-sided relationships can feel as real to viewers as real-life relationships (Eyal & Cohen, 2006) and can influence one's opinions and behaviors beyond media consumption itself (Chung & Cho, 2017; Lee & Watkins, 2016; Sokolova & Kefi, 2019). While parasocial relationships were first defined prior to the creation of the internet and social media, they are no less present in these mediums. In fact, social media allows content to be created, uploaded, and interacted with on demand and more frequently than traditional media (e.g.,

television, radio). This allows people to have more frequent parasocial interactions, which in turn can lead to stronger parasocial relationships developing (Frederick et al., 2012; Kurtin et al., 2018; Schroath, 2016).

While there are several published surveys intended to measure parasocial relationships, such as the Parasocial Interaction Scale (PSI, Rubin et al., 1985), Audience-Persona Interaction Scale (API, Auter & Palmgreen, 2000), and Celebrity-persona Parasocial Interaction Scale (CPPI, Bocarnea & Brown, 2007), none of these were developed or validated for use in a social media context. Moreover, none can be used in a social media context without major modifications to the original items due to their specificity and wording. For example, the Parasocial Interaction Scale (Rubin et al., 1986) scale examines relationships with newscasters and specifically refers to their opinions on news stories, and the Audience-Persona Interaction Scale (Auter & Palmgreen, 2000) refers to the celebrity as an actor and addresses characters which they portray. Additionally, some researchers (Dibble et al., 2016; Schramm & Hartmann, 2008) believe that most parasocial phenomena scales have not undergone adequate tests of construct validation. Furthermore, many scales, including the popular PSI and API scales, were developed prior to the distinction between parasocial relationships and interactions becoming prevalent in the literature, leading some researchers to claim that these earlier scales are mislabeled and do not measure their intended constructs (Dibble et al., 2016; Giles, 2002; Schramm et al., 2002; Schramm & Hartmann, 2008). These reasons, compounded with the increasing influence and presence of online celebrities, led us to develop the Parasocial Relationships in Social Media (PRISM) Survey to fill this gap in the literature (Boyd et al., 2022). By

continuing to validate the PRISM Survey, we hope to provide researchers with a valid and reliable measure that can be used to assess the parasocial relationships which people develop with online celebrities and influencers through social media.

Purpose of Study and Research Questions

The purpose of the current study is to assess the construct validity and measurement invariance of the PRISM Survey, which has been designed to measure the parasocial relationships people develop with online, social media celebrities. There are three research questions guiding the current study.

1: Does the previously identified four factor structure replicate in a new sample?

This first research question explores whether the previously established four-factor item structure holds in a new, independent sample. We addressed this research question by conducting a confirmatory factor analysis (CFA) on a new, independent data set to confirm that the same items load onto the same factors as found in a previously conducted exploratory factor analysis (Boyd et al., 2022). We assess model fit using comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR) using the guidelines provided by Brown (2015) and Gana and Broc (2019).

2: Do the four factors possess adequate convergent and discriminant validity?

The second research question explores the extent to which items within each factor adequately measure that factor (convergent validity) and the extent to which factors are distinct from one another (discriminate validity). Together, convergent and divergent

validity support the overarching construct validity of an instrument by indicating the degree to which factors are related to one another. We utilized the criteria suggested by Cheung and Wang (2017), which states discriminate validity can be concluded if the correlations between factors is less than 0.70. Cheung and Wang (2017) also state evidence for convergent validity occurs when both the standardized factor loadings and average variance extracted (AVE) for a factor are above 0.50.

3: Do the measurement properties (e.g., factor structure, factor loadings, threshold parameters) remain invariant across different social media platforms (e.g., live, recorded)?

To further assess the psychometric integrity of the item set, the final research question examined whether the measurement properties (e.g., factor structure, factor loadings, threshold parameters) of the PRISM survey are invariant across different types of social media platforms. Specifically, we examined whether the measurement properties held when assessing a recorded platform (e.g., YouTube) and a live format (e.g., Twitch). Examining whether the same measurement properties holds in different platforms is essential for making comparisons of parasocial relationships across social media platforms.

Parasocial Relationships

Horton and Wohl (1956) first defined parasocial interaction as a type of one-sided relationship that is experienced between a spectator and the performer's persona. At the time, television was thought to be the most effective medium through which parasocial relationships could be developed (Horton & Strauss, 1957; Horton & Wohl, 1956). However, in the 65 years since, research on parasocial phenomena has expanded beyond

television to include radio, literature, sports, politics, and social media, such as Facebook, Twitter, and YouTube. Over time, our understanding of parasocial interactions has evolved and become more nuanced. While originally used interchangeably, parasocial interactions and relationships are now distinct constructs in the literature. In general, parasocial relationships are defined in much the same way as Horton and Wohl's (1956) original definition, that is a one-sided relationship formed by a viewer with a performer that cannot be reciprocated. Rihl and Wegener (2019) added that these relationships are enduring and cross-situational, extending beyond the initial act of media consumption. Parasocial interactions have come to be defined as the self-contained interactions between a viewer and a performer, which are limited to the duration of the media exposure (Vorderer, 1996), and through repeated parasocial interactions, parasocial relationships can be developed and strengthened.

An important part of the literature surrounding parasocial relations has been developing scales to effectively measure parasocial relationships. Liebers and Schramm (2019) found that in the 65 years since Horton and Wohl's initial publication, there have been over 260 different articles published on parasocial phenomena, 52.4% of which used surveys for data collection. The two most popular measures used in these publications are the Parasocial Interaction Scale (PSI; Rubin et al., 1985) and Audience-Persona Interaction Scale (API; Auter & Palmgreen, 2000). Together these two scales have been used in over 100 different publications. The PSI scale is a 20-item measure that was originally designed to measure the parasocial interactions with TV newscasters. The PSI scale also exists as a more compact 10-item measure that was originally designed to measure the parasocial

interactions with soap opera actors. The API scale consists of 22 items and was originally developed to measure the parasocial interactions developed with sitcom characters. Each of these scales use the same 5-point Likert scale from “strongly disagree” to “strongly agree”. While these scales are pervasive in the literature, recent research has begun to question their validity for a number of reasons. First, both scales were created prior to the distinction being made between parasocial relationships and parasocial interactions, and some argue that these scales are now mislabeled as they are actually measures of parasocial relationships and not parasocial interactions (Dibble et al., 2016; Schramm & Hartmann, 2008). Additionally, the scales have very specific wording that requires them to be modified if they are used outside of their original contexts mentioned above. While modifying the surveys for a new context is an option, the surveys would need to be reassessed to determine if they are still valid for the new setting in order to prevent compromising the results (Stewart et al., 2012). Even the switch between survey formats (e.g., paper to electronic) can cause validity concerns which should be considered (Coons et al., 2009; Stewart et al., 2012). Dibble et al. (2016) also argues that most parasocial interaction scales have not undergone adequate tests of construct validation in the first place. In this paper we continue validating the PRISM survey to provide researchers with an appropriate survey for measuring parasocial relationships which does not need to be modified for use in social media contexts, thus mitigating potential validity issues, and increasing the overall quality of parasocial relationship research conducted.

Parasocial Relationships in Social Media (PRISM) Survey

The Parasocial Relationships in Social Media (PRISM) Survey has been designed to measure the parasocial relationships that people develop with online, social media celebrities (Boyd et al., 2022). The survey consists of 22 items that were based on three parasocial surveys that are well established in the literature: The Audience-Persona Interaction Scale (Auter & Palmgreen, 2000), Parasocial Interaction Scale (Rubin et al., 1985), and Celebrity-Persona Parasocial Interaction Scale (Bocarnea & Brown, 2007). These scales were compared to determine relevant and unique items from each, which were then modified for a social media context. The PRISM survey uses a five-point Likert response scale from Strongly Disagree to Strongly Agree with a separate Does not Apply option. Once the initial draft of the items was created, the study began exploring the survey's validity through its content and construct validity. These were assessed using an expert review panel and exploratory factor analysis (EFA), respectively. The expert review panel provided additional feedback on the content and clarity of the items, which was reviewed and incorporated prior to data collection for the EFA. The EFA revealed four unique factors that have been labeled *Interest In* (Cronbach's alpha = .83), *Knowledge Of* (Cronbach's alpha = .83), *Identification With* (Cronbach's alpha = .84), and *Interaction With* (Cronbach's alpha = .78) the celebrity of interest consisting of 7, 5, 6, and 4 items, respectively.

Validity Analyses

In order to further validate the PRISM Survey and to answer our first research question, we conducted a confirmatory factor analysis (CFA) to test the four-factor solution found in previous exploratory factor analysis. As noted by Brown and Moore (2012), a confirmatory factor analysis can be used to provide a psychometric evaluation of the latent structure of the measurement model. We used several different fit indices to evaluate the fit of the model, including comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Brown (2015) and Gana and Broc (2019) provide the following guidelines for using these measures to evaluate model fit: CFI and TLI ≥ .90 for adequate fit and ≥ .95 for good fit; RMSEA ≤ .08 for adequate fit and ≤ .05 for good fit; and SRMR ≤ .08 for adequate fit and ≤ .06 for good fit.

After the CFA, we assessed the convergent and discriminant validity of the PRISM survey in order to address the second research question. Using the guidelines suggested by Cheung and Wang (2017), we calculated the standardized factor loadings and AVE for the factors and calculated the correlations between the factors to assess for convergent and discriminant validity, respectively. Using these guidelines, we can conclude convergent validity when standardized factor loadings and AVE for the factors are greater than 0.50 and divergent validity when correlations between factors are less than 0.70.

Finally, we address the third research question by examining whether the PRISM survey was invariant across different social media platforms. Specifically, we assessed the measurement invariance between YouTube (i.e., a recorded platform) and Twitch (i.e., a

live platform). While measurement invariance between nested models is usually assessed using a chi-squared difference test, there is research that shows the chi-squared test to be sample size dependent (Brannick, 1995; Cheung & Rensvold 2002; Kelloway, 1995). Chen (2007) asserts that changes in fit indices that are independent of sample size, such as CFI and RMSEA, should be used to test measurement invariance between nested models, instead of the chi-squared difference test. Using the guidelines offered by Chen (2007), $\Delta CFI \geq -.010$ and $\Delta RMSEA \geq .015$ indicate non-invariance, however, ΔCFI should take precedent as the complexity of a model affects $\Delta RMSEA$.

Sampling and Recruitment of Participants

The population of interest for this study was anyone 18 years of age or older who followed an online celebrity/content creator on some form of social media (e.g., Facebook, TikTok, YouTube). Due to the broad population of interest, there was no central location in which the participants were selected to participate. This allowed data collection on an international scale using the online survey software platform QuestionPro, which included 44 different countries. The survey was posted on several social media platforms including Reddit, OnlyFans, Facebook, and LinkedIn. Additionally, professors at four U.S. universities were contacted via email, asking if they would be willing to send the survey out to their students. Those who agreed, were requested to forward the recruitment materials with a link to the online survey to their students via email. This resulted in a total sample of over 1200 participants, which was then split into two random samples, one for the original exploratory factor analysis (Boyd et al., 2022) and the other for the current study.

Data Screening

Any participants that listed they were under 18, not following a celebrity, or did not provide informed consent were immediately screened out by the survey platform. Additionally, any participants who listed multiple different celebrities, celebrities who do not primarily use social media for their interactions (e.g., actors, musicians), or fake names for the celebrity they follow were removed. The celebrities listed were also recoded to provide uniformity by correcting spelling mistakes, abbreviations, and pseudonyms or stage names. Data screening resulting in a final sample size of 606.

Participants in Current Study

Data collection lasted for five weeks, during which participants were able to complete the survey at any time using either a computer, phone, or tablet. The average age of the participants was just over 24 years old ($M = 24.01$, $SD = 6.7$) and ranged from 18 to 63 years old. The majority of participants identified as female (42.1%), followed by male (41.6%), and participants were primarily Caucasian/white (76.2%). Most participants indicated having some college education but no degree (29.4%), followed by having obtained a bachelor's degree (25.6%) which aligns with the majority of participants also indicating that they are full time students (36.6%), followed by employed, working 40 or more hours per week (25.4%).

Overall, participants listed 227 different online celebrities they were following, and the majority of participants indicated that they interact with the celebrity's content either daily (29.7%) or 3 to 5 days per week (37%). The majority of participants indicated that

they began following the celebrity in either 2018 (14.9%), 2019 (20.1%), or 2020 (19.3%), with dates ranging from 2005 to 2021. The most common primary platforms they followed the celebrity on were YouTube (74.6%) and Twitch (17.8%), but the overwhelming majority (90.3%) also indicated that they are following the celebrity on more than one social media platform.

Results

Given the ordinal nature of the survey items (i.e., Likert scales), we used a diagonally weighted least squares (DWLS) estimation method as it makes no distributional assumptions, such as multivariate normality, and is well suited for use with ordinal response options. A CFA model measuring the four factors found in the EFA, *Interest In*, *Knowledge Of*, *Identification With*, and *Interaction With*, was examined using the lavaan package (Rosseel, 2012) in R (R Core Team, 2020). Using the guidelines set by Brown (2015) and Gana and Broc (2019), we determined that the model displayed adequate fit[3], CFI = .936, TLI = .927, RMSEA = .073, 90% CI_{RMSEA} (.068, .078), SRMR = .07. While these values do not meet the stricter benchmarks set by Hu and Bentler (1999; CFI and TLI > .95, RMSEA < .06), more recent research has shown that these benchmarks are too stringent, and even Bentler's (1990) original CFI and TLI benchmarks of .9 are overly demanding (Marsh et al., 2004; Marsh et al., 2005). These results support the four-factor solution found

[3] While the fit indices could be improved to meet more stringent guidelines by making modifications to the model, such as allowing identification items 1 and 2 and interest items 1 and 2 to covary, we decided the model fit was adequate and stayed true to the theoretical model we were testing.

in the previously conducted EFA (Boyd et al., 2022), addressing research question 1. Standardized factor loadings ranged from .56 to .81 for the *Interest in* factor, .88 to .35 for the *Knowledge of* factor, .80 to .55 for the *Identification with* factor, and .82 to .58 for the *Interaction with* factor. In addition, communalities, or the proportion of variance in the item explained by the factor, ranged from .29 to .77. Table 5 presents the factor loadings and communalities for each item, as well as the internal consistency reliability alpha for each factor.

In order to address Research Question 2, we first calculated the average variance extracted (AVE) from each factor to assess the convergent validity of the survey. Convergent validity can be established if the AVE and standardized factor loadings for all of the items are not less than .5 (Cheung & Wang, 2017). Both the AVE and standardized factor loadings were above this threshold for all factors and items in the model, suggesting strong convergent validity for the survey, see Table 6 for AVE values. Cheung and Wang (2017) also stated that divergent validity can be established as long as the correlation between any two factors is not greater than .7. Table 7 shows that none of the correlations between the factors in the model were greater than this threshold, suggesting evidence for divergent validity for the four factors.

In addition to calculating the AVE, we calculated the internal consistency reliability for each factor to further support the survey's construct validity. The internal consistency reliability was measured using the ω_t coefficient (McDonald, 1999). The ω_t coefficient has been shown to be a more sensible measure of internal consistency than Cronbach's alpha,

Table 5. Factor Loadings, Coefficient Alphas, and Communalities (h^2) for Items in PRISM Survey.

Item	Factor Loading	h^2
Interest In (α = .87)		
I look forward to seeing [NAME]'s content.	.81	.657
I like to see content that [NAME] has made.	.81	.656
I hope [NAME] achieves their goals.	.77	.587
I care about what happens to [NAME].	.75	.560
I am interested in [NAME].	.72	.520
I would follow [NAME] on another account if they create one on the same social media site that I already follow them on.	.66	.435
I like to see content that [NAME] is in that they did not make themselves.	.56	.311
Knowledge Of (α = .86)		
I seek out information to learn more about [NAME].	.88	.774
Learning about [NAME] is important to me.	.86	.731
When I come across information about [NAME] I will search to learn more about them.	.85	.728
If I saw a story about [NAME], I would read it.	.71	.497
I am aware of the personal details of [NAME]'s life.	.53	.285
Identification With (α = .85)		
I have many of the same beliefs as [NAME].	.80	.639
I have many of the same opinions as [NAME].	.79	.620
I usually agree with [NAME].	.76	.570
I can relate to [NAME]'s attitudes.	.74	.553
I usually make the same choices as [NAME].	.67	.443
I like the way [NAME] handles problems.	.55	.301
Interaction With (α = .79)		
[NAME] makes me feel as if I am with a friend.	.82	.666
I can imagine myself as [NAME]'s friend.	.75	.556
[NAME] keeps me company when viewing their content.	.70	.490
[NAME] understands the kinds of content I want to see.	.58	.335

Table 6. Average variance extracted; composite reliability; and McDonald's ω_t internal consistency estimates, standard errors, and confidence intervals for model factors.

				ω_t CI 95%	
Factor	AVE	ω_t	S.E.	Lower	Upper
Interest In	.532	.789	.021	.748	.828
Knowledge Of	.603	.853	.011	.829	.872
Identification With	.521	.827	.016	.795	.857
Interaction With	.512	.783	.015	.750	.810

Note: Bias-corrected and accelerated bootstrap confidence interval used with 1000 bootstrap iterations

Table 7. Standardized factor correlations.

	Interest In	Knowledge Of	Identification With	Interaction With
Interest In	1.000***			
Knowledge Of	.607***	1.000***		
Identification With	.654***	.425***	1.000***	
Interaction With	.520***	.640***	.655***	1.000***

***$p < .001$

since it does not assume Tau equivalency (i.e., equal factor loadings) among the items as Cronbach's alpha does, and using it along with confidence intervals allows researchers to report a range of values for the internal consistency with some degree of confidence (Dunn et al., 2013). All of the factors had ω_t values of .78 or greater, indicating strong internal consistency, see Table 6 for values and confidence intervals.

Finally, in order to further validate the PRISM Survey, we utilized a CFA measurement invariance approach to address Research Question 3 and determine whether the factor structure remained invariant across different social media platforms. We estimated the multi-group CFA with WLSMV estimation and theta parameterization using the lavaan package in R. For this analysis, we compared YouTube and Twitch as exemplars of recorded and live format social media platforms. We first specified a configural invariance model to examine the same factor structure held separately for the YouTube and Twitch social media platforms. This model included our four correlated factors (*Interest In*, *Knowledge Of*, *Identification With*, and *Interaction With*) across the two social media platforms (Twitch and YouTube), such that the eight factors were allowed to correlate freely. These factors were estimated simultaneously with factor means and variances set to 0 and 1, respectively. The factor loadings and threshold parameters were all allowed to freely estimate. Theta parameterization, in which the residual variance of each item is fixed to 1, was used for identification purposes. The configural model displayed adequate fit, CFI = .943, TLI = .936, RMSEA = .071, 90% CI_{RMSEA} (.067, .075), SRMR = .066. This supports our decision that the model displayed good fit and indicates that the same factor structure holds across both platforms.

Next, we assessed the metric invariance model by adding additional parameter constraints to the configural model. In the metric invariance model, the unstandardized factor loadings were constrained to be equal across both platforms. If the fit of this model is similar to the configural model it indicates that the factors have the same meaning across platforms. Threshold parameters were allowed to freely estimate as was the case in the configural model. The metric invariance model displayed good overall fit, CFI = .950, TLI = .946, RMSEA = .065, 90% CI_{RMSEA} (.061, .069), SRMR = .068, and did not display significantly worse fit when compared to the configural model, $\Delta\chi^2 = 61.8$, $p = .202$, ΔCFI = .007, ΔRMSEA = .006, see Table 7 for the model comparisons. These results show that metric invariance held, indicating that the factors have the same meaning across both platforms.

Building off the metric invariance model, we further constrained the threshold parameters to be equal across both platforms in order to test for scalar invariance. Negligible worsening of fit compare with the metric invariance model indicates that the factors have the same meaning for both platforms and participants use the response scale in a similar fashion (e.g., individuals in each group with the same level of the latent factor would have the same score on the indicator variable). The scalar invariance model displayed good overall fit, CFI = .947, TLI = .949, RMSEA = .063, 90% CI_{RMSEA} (.060, .067),

Table 8. Model Comparisons for Validation of Measurement Invariance.

Model	χ^2	*df*	CFI	TLI	RMSEA	$\Delta\chi^2$	Δdf	*p*-value	ΔCFI	ΔRMSEA
Configural	1355.1	406	.943	.936	.071					
Metric	1416.9	424	.950	.946	.065	61.8	18	.202	.007	.006
Scalar	1475.2	483	.947	.949	.063	58.3	59	.087	.003	.002

Note: χ^2, scaled chi-squared difference test; CFI, comparative fit index; TLI, Tucker-Lewis index; RMSEA, root mean square error of approximation.

SRMR = .066, and did not display significantly worse fit when compared to the metric invariance model, $\Delta\chi^2 = 58.3$, $p = .087$, ΔCFI = .003, ΔRMSEA = .002, see Table 7 for the model comparisons. These results show that scalar invariance held, meaning that both the factor loadings and the thresholds were the same across the two platforms.

Discussion

In response to the lack of appropriate surveys to measure parasocial relationships developed through social media, we created the Parasocial Relationships in Social Media Survey. In the present study, we build upon the validity evidence found in the initial study (Boyd et al., 2022) by further assessing its construct validity and measurement invariance across different social media platforms. Our findings provide excellent support demonstrating the PRISM survey's ability to measure the four factors related to parasocial relationships (*Interest In*, *Knowledge Of*, *Identification With*, and *Interaction With*) when developed with a celebrity through social media and that the relationship is invariant across different social media platforms (i.e., equality of factor structure, factor loadings, and thresholds). The results indicate that the survey has good psychometric properties when it comes to measuring parasocial relationships and that meaningful comparisons can be made when assessing parasocial relationships across social media platforms.

Using the criteria offered by Cheung and Wang (2017), that measures of AVE and standardized factor loadings be greater than 0.50, we were able to support the claim that the PRISM Survey has convergent validity. This means that the items within each factor are indeed related to one another. Further support for the survey's overall reliability was found

using the internal consistency coefficient (ω_t). All ω_t values were .78 or greater, and support that the items have strong internal consistency reliability. Cheung and Wang (2017) also state that a survey has divergent validity when the correlation between any two factors is not greater than 0.70. Using this criterion, we were also able to support the claim that the PRISM Survey possess divergent validity. This means that the factors, while related, measure distinct aspects of parasocial relationships. Together, these results further support the findings of the original study, indicating that the PRISM survey can be used to obtain reliable and valid data on the parasocial relationships that people develop with celebrities through social media.

The analysis showed that the survey had full scalar invariance between the two social media platforms (YouTube and Twitch), meaning the survey was measuring the same constructs across both platforms. These findings have significant implications for research on parasocial relationships. YouTube and Twitch use very different formats in the media they produce. YouTube is primarily used for uploading prerecorded videos while Twitch uses a live stream format that viewers watch in real time. By successfully finding scalar measurement invariance between these two platforms, we can extrapolate that the PRISM survey might behave similarly when used with other social media platforms that use the prerecorded and live formats as well. This allows researchers to make meaningful comparisons of the parasocial relationships developed through different platforms when measuring them with the PRISM survey. This includes research on the effectiveness of different platforms in fostering these relationships terms of strength, speed, and longevity.

The PRISM survey is intended to be used to measure the parasocial relationships that people develop with online celebrities through social media, such as YouTube, Twitch, Twitter, and Facebook. By developing valid measures of this phenomenon, we can more effectively analyze its effects on other fields, and more importantly people themselves. Using this survey, researchers can easily expand parasocial relationship research into the realm of social media and continue researching its impacts on marketing and brand perceptions (Chung & Cho, 2017; Lee and Watkins, 2016; Sokolova & Kefi, 2019), political support (Cohen & Holbert, 2021), attachment styles (Cole & Leets, 1999; Greenwood et al., 2008), loneliness (Rubin et al., 1985), and more. The survey also allows researchers to address questions about the impacts of these relationships with social media personalities and how they impact our behaviors and opinions. Do these relationships create unhealthy attachments with celebrities, or do they allow us other avenues for interaction and intimacy when face to face relationships might otherwise be unavailable? This is especially pertinent with the effects of the COVID-19 pandemic still impacting day to day life and interactions.

The survey results can be examined by the individual items or factors and may be compared across different social media platforms. We encourage researchers to continue validating the survey with additional social media platforms, such as Twitter, TikTok, and Facebook, as well as across diverse samples of participants. This includes underrepresented populations such as ethnic minorities and members of the LGBTQ+ community. Future research should also be dedicated to translating and validating the PRISM survey in other languages, as the current study was only conducted in English.

Translation into other languages would allow the survey to be further assessed for measurement invariance to determine if different cultures, which have already been shown to experience parasocial relationships (Brown & de Matviuk, 2010; Chung & Cho, 2017; Gleich, 1996; Rihl & Wegener, 2019; Schmid & Klimmt, 2011; Sokolova & Kefi, 2019), experience them in the same way.

The PRISM Survey provides a new method for researchers to measure parasocial relationships that have been developed through social media. The survey not only shows great construct validity, but also measurement invariance across different platforms. With this survey, researchers can continue to explore parasocial phenomena, and push the field further into the social media domain.

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CONCLUSION

In this multi-paper dissertation, we developed and demonstrated the validity and strong psychometric properties of the Parasocial Relationships in Social Media (PRISM) Survey. Each paper built on the findings of the previous, forming a complete and coherent dissertation. In Paper 1, we explored the literature to find measures of parasocial relationships, discussed their intended purpose, the methods used to create them, and their overall strengths and weaknesses. Using these findings, we were able to put forward reasons why new measures for measuring parasocial relationships are needed and what one might look like. In Paper 2, we took the suggestions from the first paper and used them to develop a new measure of parasocial relationships. This new survey was designed to measure parasocial relationships developed with celebrities through social media. In this paper we also began assessing the validity of the survey using an expert review panel and exploratory factor analysis to assess its content and construct validity, respectively. Finally, in Paper 3, we continued assessing the validity and psychometric properties of the PRISM Survey to further strengthen its overall integrity. We replicated the four-factor structure found in Paper 2 using a confirmatory factor analysis, and also found strong support for the convergent and discriminant validity of the survey. Lastly, we tested the invariance of the survey and found full scalar invariance across different social media platforms. Together, papers 2 and 3 show that the PRISM Survey has strong psychometric properties and overall validity and provide great support for its use in future parasocial relationship research.

VITA

Originally from Pennsylvania, Austin Boyd grew up in Woodbridge, Virginia. After high school, he attended the University of Virginia and received a Bachelor of Arts degree in Psychology with a minor in Biology in 2018. He chose to attend the University of Tennessee, Knoxville to pursue a Doctor of Philosophy degree in Educational Psychology and Research with a concentration in Evaluation, Statistics, and Methodology and a minor in Statistics. His research interests are in applied statistics and methodology, which has him on projects ranging from social network analysis to measuring parasocial relationships to testing the underlying assumptions of Rasch models.