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Ben Wasike

University of Texas Rio Grande Valley, ben.wasike@utrgv.edu

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Gender, Parasocial Interaction, and Nonverbal Communication: Testing the Visual Effect of Sports Magazine Cover Models

BEN WASIKE

University of Texas Rio Grande Valley, USA

An experiment examined gender, parasocial interaction, and nonverbal communication regarding sports magazine cover models. Results indicate that a correlation exists among parasocial interaction, nonverbal communication, and gender, with female cover models eliciting larger effects on test subjects. However, gender did not correlate with parasocial interaction or nonverbal communication among the test subjects, contradicting extant literature. Also, the parasocial interaction and nonverbal communication measurement scales positively correlated. In conclusion, static images are reliable experimental stimuli for parasocial interaction studies and nonverbal measurement scales, and sports magazines are better served by featuring more women.

Keywords: parasocial interaction, nonverbal communication, gender, magazines, sports news, visual communication, experiment

“Observations on intimacy at a distance” is how Horton and Wohl (1956, p. 215) introduced the seminal concept of parasocial interaction to mass communication research. Here, they describe the symbolic relationship people develop with characters they encounter on television, radio, or film. Specifically, they defined this phenomenon as a “simulacrum of conversational give and take,” where “the interaction, characteristically, is one-sided, nondialectical, controlled by the performer, and not susceptible of mutual development” (p. 215). Since then, this phenomenon has undergone changes. For instance, Horton and Strauss (1957) emphasized the illusionary aspect of parasocial interaction to differentiate it from personal interaction in which both subjects know each other and actively reciprocate. Newer conceptualizations of the term include an experiential aspect, where the user’s intuition about the nonverbal cues of the performer play a role in the process (Hartmann & Goldhoorn, 2011). As I discuss in later sections, recent critics of the Rubin scale (Rubin, Perse, & Powell, 1985) have advocated for more refined parasocial interaction measurement scales that reflect theoretical changes and avoid conflation with distinct but related concepts (Dibble, Hartmann, & Rosaen, 2016).

The current study examines gender, parasocial interaction, and nonverbal communication regarding sports magazine cover models. Specifically, the study seeks to find (a) whether a model’s gender affects the level of parasocial interaction with test subjects in general, (b) whether male and

Ben Wasike: ben.wasike@utrgv.edu

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female test subjects will report different levels of parasocial interaction with the models, (c) whether female models send different nonverbal cues to test subjects than do male models, and (d) whether male and female test subjects decode these nonverbal cues differently.

This approach uniquely adds to the visual communication literature in several ways. First, the study uses sports magazine covers as experimental stimuli. The use of magazine covers as stimuli by itself is unique because video and television content are the most common stimuli used in experimental parasocial interaction studies. Also, most sports-related parasocial interaction studies have looked at various media, but largely ignored one of the most commonly disseminated: sports magazines. Scholars have examined parasocial interaction regarding television (Earnhardt, 2010; Hartmann, Stuke, & Daschmann, 2008), newspapers (Sanderson, 2010), and, lately, social media (Boehmer, 2016; Hull & Lewis, 2014). Second, the study examines the effect of gender on parasocial interaction in sports news, an area of journalism practice lacking gender diversity in its coverage. The gender-based approach goes beyond mere gap filling within the extant literature. As I discuss shortly, research has found serious problems of omission and addition regarding the portrayal of women in sports media. For instance, women rarely appear on sports magazine covers, and when they do, their portrayal is mostly sexualized, trivialized, and gendered, at the expense of their athletic prowess and achievement. Such a portrayal is impactful to viewers because a sexualized portrayal of women leads to objectification (Hatton & Trautner, 2011). Additionally, images on magazine covers elicit both positive and negative effects. As I discuss in more detail in the next section, some negative effects include body satisfaction among demographics ranging from teenage girls (Veldhuis, Konijn, & Seidell, 2012) and adult women (UNESCO, 2009) to men (Neumann, 2016).

Hegemonic masculinity and gendered sports coverage plays a more impactful, long-term role regarding the socialization of young people and women. Research shows that media coverage plays a role in the sports socialization of young people and women regarding their likelihood to engage in sports (Beamon, 2010; Hardin & Greer, 2009; Howie & Campbell, 2015). Therefore, this area of journalism offers appropriate grounds for gender-based inquiry. Last, the study deploys a nonverbal communication measurement scale alongside the parasocial interaction scale, thus extending current methodology.

Theoretical Framework

Gender in Sports Magazine News Coverage

Research has long established that sports media in general, and sports magazines in particular, disproportionately cover more male than female athletes. When they do cover women, the portrayal is mostly negative. First, women rarely appear on sports magazine covers. Martin and McDonald (2012) found that women appeared in only 8.75% of *Sports Illustrated* and *ESPN The Magazine* covers between 1987 and 1994, a number that dropped to 4.88% by 2009. A more comprehensive study that examined the totality of covers published by *Sports Illustrated* and *ESPN The Magazine*—from 1954 and 1998 to 2016, respectively—found similar trends. Here, Wasike (2017) determined that women appeared in only 21% of the covers. In the absence of the annual special *Sports Illustrated* swimsuit editions and *ESPN The Magazine: The Body* issues, appearance by women drops to 18%. Additionally, women were more likely to

appear on *Sports Illustrated* covers during its inaugural years, in the early 1950s, than in any other period, including the current decade.

Whenever women appear on these covers, it is more likely than not that they are sexualized, objectified, or trivialized. The Wasike (2017) study found that women were more likely than men to be portrayed in sexualized poses, smiling prettily, and in passive rather than active poses. Additionally, the women were less likely than men to be linked to a specific sport, and, overall, the covers emphasized gender over athletic achievement. These results echo earlier findings. Lumpkin (2009) found instances of explicit sexualization of women appearing in *Sports Illustrated*, with phrases such as, "She's known primarily for her pretty face, curvaceous body and frequently revealing clothes" (p. 46), or "Aiming her décolletage lensward . . . oh la la, Steffi!" (p. 46). These statements were made in reference to tennis superstars Anna Kournikova and Steffi Graf. Other instances of gendered coverage have occurred regarding gender-bending athletes such as South Africa's Caster Semenya (Young, 2015), in women's fitness magazines (Bazzini, Pepper, Swofford, & Cochran, 2015), in newspaper sports coverage (Godoy-Pressland, 2014), and in online sports coverage (Chen, Duncan, Street, & Hesterberg, 2016; Kian, Mondello, & Vincent, 2009).

The Effect of Magazine Covers

The typical magazine cover carries three main elements: the logo (magazine name), cover lines (textual teasers and callouts), and the main image. It is the last element (usually, a cover model) that is the most consequential (Iqani, 2012). Most magazine sales depend on the cover's attractiveness and impression (Johnson & de Lozano, 2002). Covers are meant to catch a potential reader's attention; therefore, magazine editors and art directors pay special attention to this factor when deliberating the cover design (Kitch, 1999; Spiker, 2003). Also, just like images and television content, visuals on magazine covers affect readers in more ways than one, both positively and negatively.

One negative effect of these visuals, such as those depicted on glossy fashion magazine covers, is the promotion of untenable body dimensions. The resulting effect is body image issues among readers, and a symptom of this is body dissatisfaction (Swiatkowski, 2016; Veldhuis et al., 2012). Research has also shown similar results regarding fitness magazines. Covers tend to emphasize appearance and body shape over health, with some covers displaying thin models, like those shown on glossy fashion magazines (Conlin & Bissell, 2014). Sexualization and the objectification of women are also issues with magazine cover visuals. Such dynamics have been found on the covers of prominent magazines such as *Rolling Stone*, which increasingly objectifies women by showing them in a hypersexualized manner (Hatton & Trautner, 2011). Even news magazines can elicit negative effects. An example is the May 2012 *TIME* cover on attachment parenting, which depicted a breast-feeding mother with her breast partially exposed. This visual depiction of a controversial parenting style was both condemned for indecency and praised for audaciousness (Ives, 2012). Another controversial *TIME* cover depicted O. J. Simpson in a darkened mugshot, making him appear sinister compared with an identical but unaltered image appearing on the cover of *Newsweek* (see Figure 1). The photo manipulation in this June 1994 cover was condemned for suggestive racial overtones (Finnegan, 2000).



Figure 1. Notable covers depicting O. J. Simpson, attachment parenting, and the Angelina Effect.

Not all depictions on magazine covers have negative effects. The “Angelina effect” *TIME* cover was one of the many covers that actress Angelina Jolie appeared on after revealing that she had undergone a double mastectomy to preemptively combat a cancer-causing gene she carried (see Figure 1). Research shows that her portrayal in various covers elicited positive reactions from women around the world. Kosenko, Binder, and Hurley (2016) found that women who were familiar with the cover identified with her and were more willing to undergo a similar procedure. Other research found that this coverage elicited more than just intention. Evans et al. (2014) found that screening for the cancer-causing gene almost tripled in the UK because of Jolie’s coverage. A similar effect occurred in Canada. Here, Carlson (2014) found that referrals for the procedure almost doubled, from 487 cases six months before Jolie’s disclosure to 916 cases after the coverage, indicating a 90% increase.

Parasocial Interaction and Gender

As mentioned, Horton and Wohl (1956) describe parasocial interaction as a one-sided, nondialectical relationship that users develop with characters they encounter in the media. This study examines the same issue, but regarding how readers develop such interactions with male and female sports magazine cover models. Research shows the parasocial phenomenon to be impactful. In one of the first empirical studies on the concept, Rubin et al. (1985) found that parasocial interaction positively correlated with television viewing, but only during periods of loneliness. Other studies have linked parasocial interaction to uses and gratifications regarding motivations for television viewing (Conway & Rubin, 1991). Recent scholarship continues to find an impact with parasocial interaction concerning physical attractiveness (Hartmann & Goldhoorn, 2011), moral character (Hu, 2016), and even general popularity (Dibble & Rosaen, 2011).

Research also shows that gender mitigates parasocial interaction. Some studies indicate that women develop more parasocial interaction than men do (Laken, 2009). Other research has shown that women are more likely to report stress over a parasocial breakup, which happens, for instance, when a favorite television host leaves a show (Cohen, 2003; Eyal & Cohen, 2006). Other studies show that male

and female media characters elicit different parasocial interactions among test subjects. Greenwood and Long (2011) found that opposite-gender interactions led to higher imagined intimacy levels than did same-gender interactions. However, the female subjects in their study reported higher same-gender intimacy levels than the male subjects. Some of the same-gender attraction can be explained by preoccupation attachment, or the idealization people develop toward their favorite media characters, usually due to some self-perceived deficiencies and insecurities (Bartholomew & Horowitz, 1991). This much Greenwood, Pietromonaco, and Long (2008) found in a study of female-only subjects. Here, those with preoccupation attachment styles were more likely to form parasocial closeness to media characters they deemed ideal in terms of physical appearance. Similar trends have also manifested among girls as young as 14 years, where preoccupation attachment styles predicted not only involvement in parasocial interactions but also the emotional intensity in such interactions (Theran, Newberg, & Gleason, 2010).

Other reasons are responsible for parasocial interaction patterns among males. Wang, Fink, and Cai (2008) found that men were more likely to report parasocial interaction when experiencing chronic loneliness, a pattern not manifest among women. Wang et al. define chronic loneliness as "loneliness that comes from the failure to establish satisfactory social relationships over years" (p. 90). Gender-based parasocial interaction patterns can also be explained by the way men and women view relationships. For instance, women, more than men, view relationships as a goal-oriented phenomenon (Fox, Gibbs, & Auerbach, 1983). Men, on the other hand, are more likely to experience and report relationship anxiety because of the inadequacy they perceive from societal norms that portray women as relationship experts (Acitelli & Young, 1996).

Gender diversity in the media, or lack thereof, can also affect how men and women form parasocial interaction. Because of the abundance of male characters on television and film, for instance, men can choose to symbolically interact with those from a larger and more diverse pool. This makes it more likely for men to pick male actors and view them as role models. Women, on the other hand, are more likely to pick a more gender-diverse set of characters to interact with, some of whom they view as pseudofriends rather than role models (Hoffner, 1996). Because women are still underrepresented in most areas of television and film (Women's Media Center, 2015), Hoffner's conclusions are applicable in the present day.

Given the discussion above, the following hypotheses predict that gender correlates with parasocial interaction, and it also mitigates parasocial interaction regarding sports magazine cover models in two ways. First, viewing covers featuring female models will lead test subjects to report more parasocial interaction than will viewing covers featuring male models. Second, among the test subjects, women will show a higher level of parasocial interaction than will men. Research Question 1 explores whether or not subjects in each gender group are more likely to interact with same-gender magazine cover models.

H1: Female cover models will create more parasocial interaction with subjects than will male cover models.

H2: Female test subjects will report more parasocial interaction with the cover models than will male subjects.

RQ1: Are there any same-gender interactions between test subjects and sports magazine cover models?

Images and Nonverbal Communication

Images, especially those depicting people as seen on magazine covers, elicit effects via the nonverbal cues they send. *Nonverbal communication* is the meaning of "facial expressions, hand and arm gestures, postures, positions, and various movements of the body or the legs and feet" (Mehrabian, 1972, p. 1). It involves the "non-linguistic behaviors (or attributes) that are consciously or unconsciously encoded via multiple communication channels" (Ting-Toomey, 1999, p. 115). These channels include the face, body, and gestures from which people decode and interpret nonverbal cues (Ambady & Rosenthal, 1998). Few can dispute the power of images. As Paivio's dual-coding theory indicates, images lead to greater recall than do words alone, and, at the very least, images improve recall when used in conjunction with words (Paivio, 1983, 2013; Paivio & Csapo, 1973). In fact, images spur readers to explore accompanying stories (Garcia & Stark, 1991), and the larger the image, the more readers deem the accompanying issue to be important (Wanta, 1988).

Examining the nonverbal effect of images such as those on sports magazine covers is important in more ways than one. First, the nonverbal communication these images send is vital in the absence of verbal language during human interaction (Subramani, 2010). Image-heavy magazine covers aptly fit this context. Second, nonverbal cues denote identity in terms of race, physical features, gender, mode of attire, body, attractiveness, and more (Ting-Toomey, 1999). All these are issues pertinent to magazine covers. Third, nonverbal communication is inescapable in human communication, pervading most interactions because of its omnipresence (Burgoon, Guerrero, & Floyd, 2010). Fourth, and most pertinent to this study, nonverbal communication has a discernible effect, even regarding static images such as those on magazine covers.

For instance, images of smiling individuals have been shown to elicit feelings of sociability and altruism among viewers because this nonverbal cue denotes attractiveness, agreeableness, and generosity (Mehu, Little, & Dunbar, 2007). Other research ties smiling to honesty and trustworthiness (Centorrino, Djemai, Hopfensitz, Milinski, & Seabright, 2015; Krys et al., 2016). These findings are important because smiling is an important nonverbal cue in Western culture. Smiling is generally associated with geniality, happiness, approachability, and persuasiveness (Gunnery & Hall, 2014; Miles, 2009). Posture in static images has also been shown to be impactful. Studies indicate that people perceive anger when viewing an image depicting someone with a backward-bending head, and sadness when viewing an image showing someone with a forward-bending head (Coulson, 2004). Head posture in images denotes more than emotion, as it can also elicit feelings of dominance and submission among viewers. Mignault and Chaudhuri's (2003) study of head tilting found that a raised head led viewers to decode dominance, specifically, pride, disdain, self-assuredness, and smugness. A bowed head led to the decoding of submission, including shame, humiliation, guilt, and respect.

These findings have practical consequences. Adults with neotenous (or baby) faces elicit more sympathy from others, with female neotenic faces eliciting more effects (Keating, Randall, Kendrick, &

Gutshall, 2003). Because the Keating et al. (2003) study used images accompanying job résumés, such nonverbal cues as neoteny do more than just elicit emotion—they can have real-life consequences regarding one's career prospects. Additionally, other research has tied such nonverbal cues as smiling to success during job interviews (Gunnery & Hall, 2014) and financial earnings over time (Centorrino et al., 2015). Also, Baberini, Coleman, Slovic, and Västfjäll (2015) found a correlation between viewing sad photos and feeling sympathetic. Furthermore, Baberini et al. found a correlation between induced sympathy and the likelihood to donate money toward subjects portrayed in the sad photos.

Nonverbal Communication and Gender

Research has established that gender plays a role in nonverbal communication, and this is manifest in both early and contemporary nonverbal communication scholarship. For instance, women have been shown to be better than men at maintaining eye contact, both with each other and with everyone else in general (Baird, 1976; Exline, Gray, & Schuette, 1965). Generally, women better communicate emotion nonverbally than men do. Specifically, studies indicate that women communicate fear and sadness more via facial expressions, whereas men fare better at communicating anger (Wallbott, 1988). Differences in smiling, a powerful nonverbal cue, also exist, with women smiling more often than men (Halberstadt, Hayes, & Pike, 1988). Additionally, research indicates that women are better at decoding facial expressions than men are (Rotter & Rotter, 1988; Taylor, 1986).

Contemporary research continues to find gender-based differences in nonverbal communication. For instance, newer studies on nonverbal decoding show that women do this better than men do. These findings refer to specific nonverbal decoding tests, such as the Test of Nonverbal Cue Knowledge (TONCK), the Diagnostic Analysis of Nonverbal Accuracy (DANVA 2-AF), and the Profile of Nonverbal Sensitivity (PONS). TONCK is an 81-question true-false scale that measures one's ability to discern nonverbal cues from general statements, such as "shy people gaze more; anger is not easily identified from a person's voice; gaze can express emotions." DANVA 2-AF uses a set of 24 color slides of facial emotion to test for the accuracy of decoding facial expressions, and PONS uses audio to test nonverbal decoding related to specific situations (Rosip & Hall, 2004, pp. 280–284).

Even though literature suggests a masculinity/femininity nonverbal communication duality regarding gender, some studies have found results contrary to this dynamic. In a study of gender, culture, and dominance in negotiations, Semnani-Azad and Adair (2011) found that female negotiators displayed as many dominant nonverbal cues as men did. These cues included the use of space, relaxed postures, and the display of negative emotion such as anger, sadness, and shame. Hall and Xing (2015) found differences regarding nonverbal cues during an observational study on flirting. Women were more likely to nod and gesticulate as their partners spoke. Men were more likely to lean toward their partners, cross their legs, and shake their heads. Similarly, Hall, LeBeau, Reinoso, and Thayer (2001) found that women used different postures when engaged in a discussion on work-related life with colleagues. Here, women more than men were more likely to sit in an erect posture, lean forward, and smile. These findings are important because research shows that posture, like smiling, is a powerful nonverbal cue. For instance, an expansive posture, where subjects take up more space, has been shown to cause viewers to avert their

gaze more than a submissive, contractive posture (Holland, Wolf, Looser, & Cuddy, 2017; Vacharkulksemsuk et al., 2016).

The following hypotheses predict gender-based differences regarding nonverbal cues sent by the cover models and how female and male subjects decoded these nonverbal cues. Research Question 2 seeks to find out whether or not subjects in each gender group are more likely to decode nonverbal cues from same-gender magazine cover models. Research Question 3 explores the methodological relationship between the parasocial interaction and nonverbal communication measurement scales.

H3: Female cover models will send more nonverbal cues than will male cover models.

H4: Female test subjects will decode more nonverbal cues from the sports magazine cover models than will male subjects.

RQ2: Are there any same-gender patterns regarding nonverbal decoding with sports magazine cover models?

RQ3: Is there a relationship between parasocial interaction and nonverbal communication?

Method

Sampling and Data Collection

Experimental design. This study used a 2 × 2 experimental design. The first factor was cover-model gender (male vs. female), and the second factor was subject gender (male vs. female). Both factors are between-group designs.

Participants. Students were recruited from various classes at a midsize university in South Texas, and participants were awarded extra credit for the exercise. The study was approved by the institutional review board.

Stimuli. The stimuli encompassed 10 magazine covers selected from *Sports Illustrated* and *ESPN The Magazine*. These two publications were suitable because they are the two most prominent sports magazines. For instance, as of May 2017, the Association of Magazine Media ranked both publications in the top 10 regarding average monthly readership for all U.S. magazines ("Magazine Media 360°," 2017). Even though subjects viewed one cover at a time and in no particular order, I selected the covers in pairs, with each pair featuring a male and female cover model. For uniformity purposes, cover models in each pair resembled each other as closely as possible regarding body language, facial expressions, and camera angle. Additionally, only covers that prominently featured one model were selected. Because female athletes rarely appear on sports magazine covers (Martin & McDonald, 2012; Wasike, 2017), I selected covers from a sample of all published covers featuring a woman, ranging from the inaugural edition to the data collection period: 1954–2016 for *Sports Illustrated* ($n = 258$), and 1998–2016 for *ESPN The Magazine* ($n = 52$). All models are well-known athletes associated with major sports—for example, Women's Tennis Association (Serena Williams), NASCAR (Danica Patrick), Major League Baseball (Kirby Puckett), Summer Olympics (Usain Bolt), Winter Olympics (Michelle Kwan), and the National Football League (Johnny Unitas)—see images in Figure 2 for details on cover-model pairing.

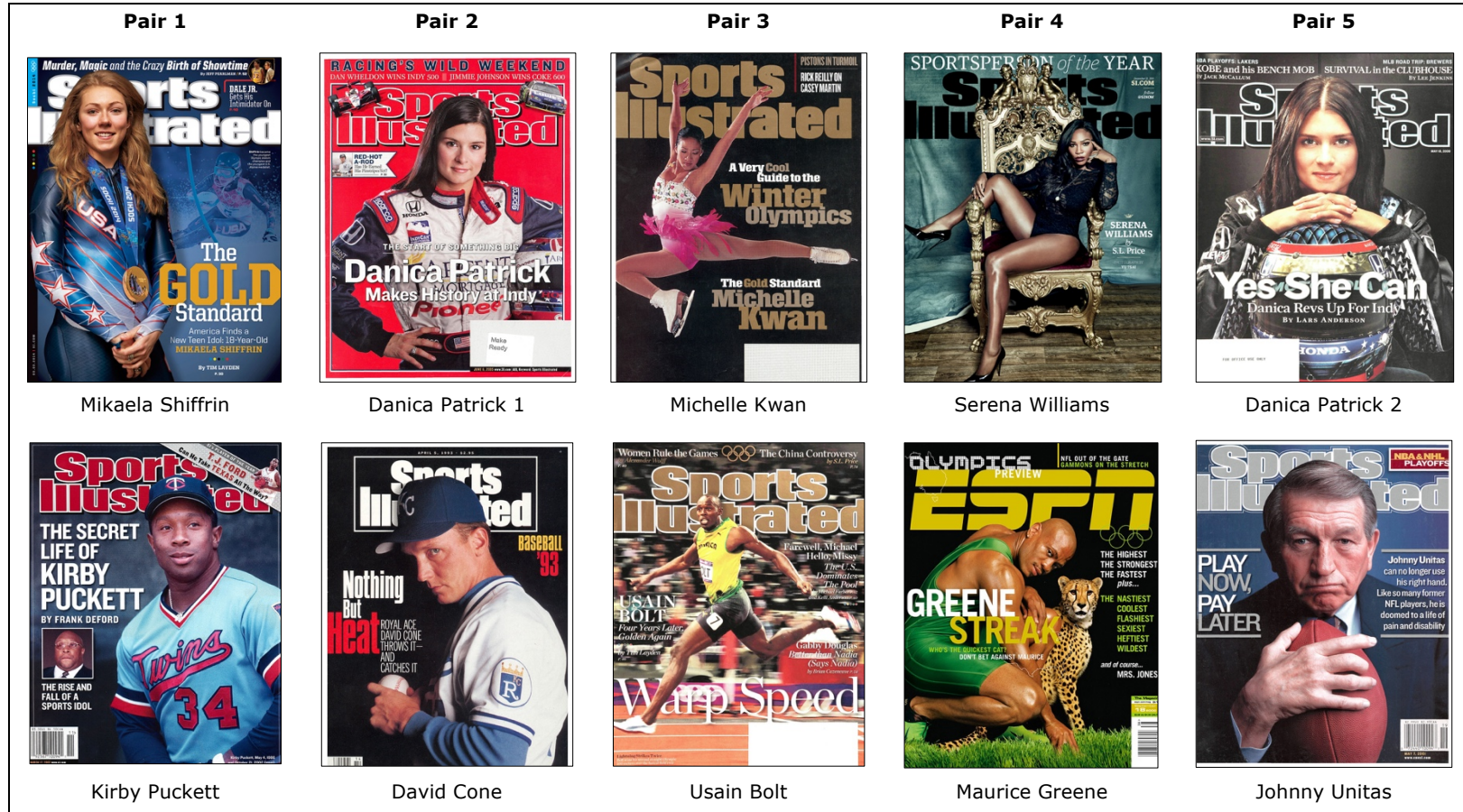


Figure 2. Paired magazine covers for survey instrument (note that cover models are paired vertically).

Measurement and Variables

I sent subjects a link to an online questionnaire via e-mail that asked subjects about the nonverbal and parasocial parameters (see next section for sample of stimuli). Subjects first viewed a full-size magazine cover in color and, as done in prior studies, then responded to questions based on a 1 to 7 Likert-type scale (1 = *strongly disagree*; 7 = *strongly agree*). The lone independent variable was gender.

Dependent Variables

Parasocial interaction. Parasocial interaction measurement scales have changed over time in response to conceptual developments and to suit the specific circumstances of a study. The same was necessary for this study. As mentioned, most experimental parasocial studies use video as stimuli. Because this study uses magazine covers, which are static stimuli, I transformed a recent adaptation of Rubin and Perse's (1987) popularly used parasocial interaction scale, as reformulated by Dibble and Rosaen (2011). The reformulated Dibble and Rosaen scale was suitable for this study for the following reasons. First, and as mentioned, scholars have bemoaned the misapplication of Rubin's parasocial interaction scale regarding conflation with other scales, such as experience of parasocial interaction (EPSI) and parasocial relationships (PSR). Also, scholars have pointed out the lack of congruence between the Rubin scale and later theoretical and conceptual developments. The Dibble and Rosaen scale used here adequately addresses these shortcomings.

As Dibble et al. (2016) mention in their critic of the Rubin scale (Rubin et al., 1985), this traditional parasocial interaction scale is suitable for short-term effects rather than for lasting effects that beget parasocial relationships, which are better measured by the EPSI scale. Because the current study takes a cross-sectional rather than a longitudinal approach—as it examines parasocial effects at a single point of interaction—it suitably measures a short-term effect. The cross-sectional approach also aligns well with Klimmt, Hartmann, and Schramm's (2006) conceptualization of the suitability of the parasocial interaction scale when measuring single-episode interactions rather than multiepisode and lasting interactions, such as those measured by PSR. Klimmt et al. discuss the first impressions formed by viewers upon their first contact with media personae. Here, such nonverbal cues as skin color, clothing, and expressions have an immediate effect on viewers, distinct from effects resulting from multiple contacts or exposure. Additionally, in their study, Dibble and Rosaen (2011) mention that their scale departs from Rubin's because it does not assume that the resultant parasocial interaction leads to friendship or that test subjects will view the media personae as a friend by default. This is an example of a conceptual development of the traditional parasocial interaction scale. Therefore, from their 10-item television-oriented scale, I picked those that were suitable for static images and transformed them accordingly, as shown in italics in Table 1.

Table 1. Parasocial Interaction Scale Adaptation from Dibble and Rosaen (2011).

This character makes me feel comfortable, as if I am with a friend.

This person seems friendly.

If this character appeared on another TV program, I would watch that program.

I would purchase a magazine featuring this person on the cover.

If I saw a story about this character in a newspaper, magazine, or online, I would read it.

If I saw a story about this person on TV, in a newspaper, or online, I would watch or read it.

I would like to meet this character in person.

I would like to meet this person.

I find this character to be attractive.

Using today's standards, most people would find this person to be attractive.

Note. Unitalicized phrases are from Dibble and Rosaen (2011). Italicized phrases are from the current study.

Nonverbal communication. Research indicates that people react to images as they do to video stimuli. The nonverbal literature discussed earlier indicates that images elicit feelings of trust, kindness, and approachability, among others. Therefore, the nonverbal scale below was adopted from pertinent studies (e.g., Centorrino et al., 2015; Kryszewski et al., 2016; Mehu et al., 2007). Similar to the parasocial scale, subjects were asked to indicate their agreement with the following statements based on a 1 to 7 Likert-type scale (1 = *strongly disagree*; 7 = *strongly agree*).

1. This person seems approachable.
2. This person seems kind.
3. This person seems intelligent.
4. This person seems confident.
5. This person seems trustworthy.

Demographic variables. Demographic variables included (a) gender, (b) how frequently the subjects read magazines, and (c) how enthusiastic they were about sports in general. Magazine readership and sports enthusiasm were measured using a Likert-type scale (1 = *strongly disagree*; 7 = *strongly agree*). Even though the instrument offered a nonbinary gender-response option, all subjects selected either male or female (and therefore gender was analyzed as male = 0, female = 1).

Validity and Reliability of the Measurement Scales

Even though this study did not require that subjects be placed in random tests groups, validity and reliability checks were necessary for two reasons. First, the measures used here were adopted from nonverbal communication studies and parasocial interaction studies. A verification of the validity and reliability of this hybridization of measures is necessary. Second, most pertinent studies use video stimuli, and this study uses still images. It is important to consider the lack of body movement within the stimuli.

First, the Cronbach's alphas for reliability for the two scales were satisfactory (parasocial interaction, $\alpha = .86$; nonverbal communication, $\alpha = .89$). These reliability scores allowed for the creation of composite parasocial interaction and nonverbal communication scores, respectively. The composite scores were calculated by collapsing the five items in each scale and calculating their average score. The composite scores allowed for overall comparisons, alongside detailed comparisons using individual items within each scale. Second, the two composite scores significantly correlated with each other ($r = .95, p < .001$). Furthermore, OLS regression indicated a significant relationship between the two when predicting the parasocial scale using the nonverbal scale ($\beta = .95, t = 122.72, p < .001, R^2 = .90, R^2_{adj} = .90$). Third, data from the pilot study ($n = 39$) returned significant gender differences regarding the two scales. Overall, female cover models elicited a larger effect on subjects regarding parasocial interaction (women = 4.86, $SD = 1.44$; men = 3.84, $SD = 1.59$), $t(37) = -6.47, p < .001$; and nonverbal communication (women = 5.60, $SD = 1.24$; men = 4.83, $SD = 1.39$), $t(37) = -5.65, p < .001$. Last, gender correlated with all individual parasocial interaction and nonverbal communication parameters, as shown in Table 2.

Table 2. Correlations Among Gender and Individual Parameters Within Pilot Study Sample (N = 39).

	Mean	SD	1	2	3	4	5	6	7	8	9	10
Gender	-	-										
Friendly	5.01	1.791	.25									
Approachable	4.98	1.754	.23	.87								
Kind	5.10	1.668	.20	.86	.87							
Intelligent	5.27	1.552	.25	.53	.48	.55						
Confident	5.85	1.489	.27	.51	.48	.49	.58					
Trustworthy	4.85	1.734	.24	.72	.75	.77	.60	.54				
Meet	4.59	2.078	.26	.62	.60	.59	.51	.49	.62			
Purchase	3.60	2.122	.17	.42	.46	.42	.39	.38	.43	.60		
Read	3.86	2.174	.20	.43	.47	.46	.44	.43	.52	.63	.77	
Attractive	4.77	2.034	.36	.42	.44	.46	.40	.44	.43	.47	.37	.43

Note. $p < .001$ for all correlations.

Results

A total of 146 subjects participated in the experiment, and a majority were women (60%). Men significantly indicated more enthusiasm in sports (men = 4.72, $SD = 2.01$; women = 3.82, $SD = 1.98$), $t(144) = 8.89, p < .001$. However, women read magazines more frequently than did men (women = 3.62, $SD = 1.95$; men = 3.30, $SD = 1.95$), $t(144) = -3.22, p < .001$. Both magazine readership and sports enthusiasm positively correlated with each other ($r = .30, p < .01$). Additionally, magazine readership correlated with both nonverbal communication ($r = .11, p < .01$) and parasocial interaction ($r = .24, p < .01$). Likewise, sports enthusiasm correlated with both nonverbal communication ($r = .14, p < .01$) and parasocial interaction ($r = .27, p < .01$). The parasocial and nonverbal correlation results mentioned above refer to the composite scores for each measure.

Hypothesis 1 predicted that female cover models would create more parasocial interaction with test subjects, and data support this prediction. Overall, female cover models elicited higher interaction levels than did male cover models (female = 5.02, $SD = 1.35$; male = 4.34, $SD = 1.52$, $t(144) = -9.63$, $p < .001$). Table 3 shows slight differences regarding specific parameters (also see Figure 3 for parasocial interaction means for specific models). Female cover models elicited attractiveness the most, and male cover models elicited friendliness the most. Further tests indicate that gender and parasocial interaction positively correlate ($r = .23$, $p < .001$). As Table 4 shows, gender also positively correlated with each individual parasocial interaction parameter. Because gender was coded (0 = male and 1 = female), the positive correlations mean that the appearance of a woman on a sports magazine cover increased parasocial interaction with subjects.

Table 3. Gender-Based Comparisons of Parasocial Parameters.

	Female models		Male models		Overall			
	Mean	SD	Mean	SD	Mean	SD		
Attractive	5.75	1.47	Friendly	4.79	1.65	Attractive	5.17	1.71
Friendly	5.4	1.57	Attractive	4.59	1.74	Friendly	5.1	1.64
Meet	5.14	1.77	Meet	4.43	1.93	Meet	4.78	1.88
Read	4.57	1.92	Read	4.1	2.00	Read	4.34	1.98
Purchase	4.28	1.98	Purchase	3.86	2.00	Purchase	4.07	2.00

Hypothesis 2 predicted gender-based differences among subjects, but data did not support this prediction. Female subjects (mean = 4.71) did not significantly report more parasocial interaction than did male subjects (mean = 4.66), $t(144) = -.59$, ns . Also, subject gender did not correlate with parasocial interaction ($r = .02$, ns). Further analysis indicated similarities between female and male subjects regarding correlations among certain parasocial parameters when both groups were examined separately. The most notable similarities in correlation were likelihood to read about a specific model and purchase a magazine featuring him or her on the cover (female, $r = .81$, $p < .001$; male, $r = .82$, $p < .001$); desire to meet the person and read a magazine with him or her on the cover (female, $r = .67$, $p < .001$; male, $r = .67$, $p < .001$); and desire to meet the person and purchase a magazine featuring him or her on the cover (female, $r = .66$, $p < .001$; male, $r = .66$, $p < .001$). Research Question 1 queried whether same-gender interactions would occur between models and subjects. Overall, no gender-based patterns were apparent, because the top five model choices for female and male subjects were identical. Both genders reported the most interaction in the following order of choice: first = female, second = male, third = female, fourth = female, fifth = female.

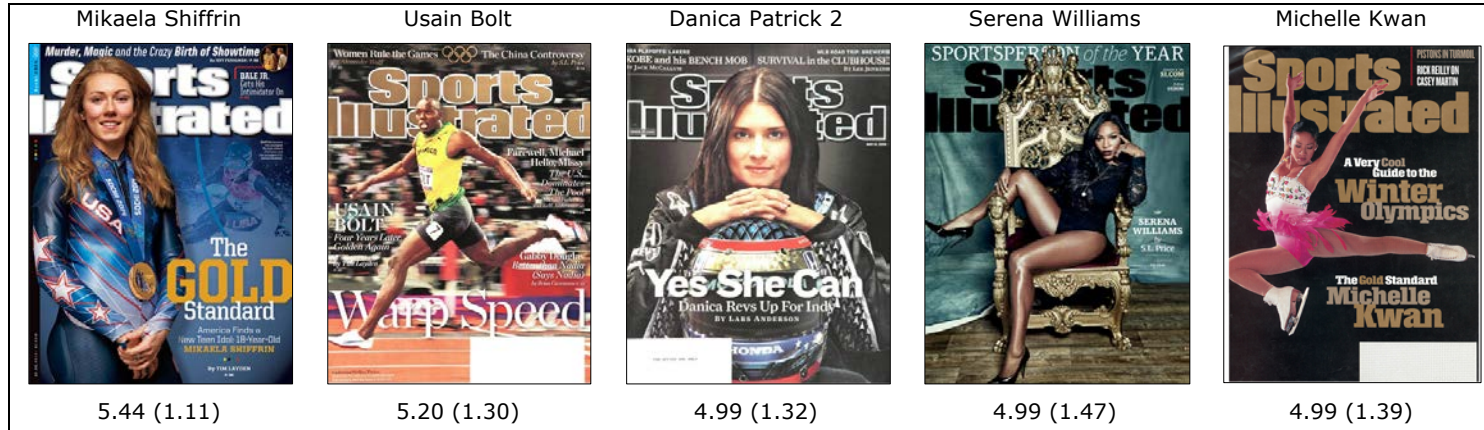


Figure 3. Means of covers with the highest parasocial interaction scores (standard deviations in parentheses).

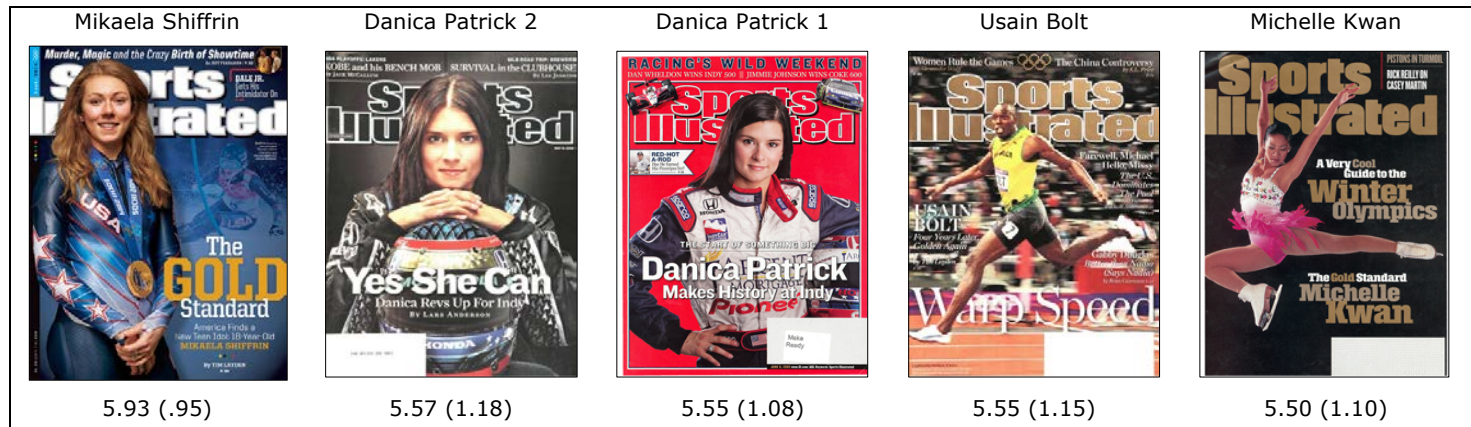


Figure 4. Means of covers with the highest nonverbal scores (standard deviations in parentheses).

Table 4. Correlations Among Gender, Parasocial Parameters, and Nonverbal Communication Cues.

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
Gender	-	-	1										
Friendly	5.1	1.64	.20	1									
Purchase	4.07	2.00	.10	.45	1								
Read	4.34	1.98	.12	.45	.81	1							
Attractive	5.17	1.71	.34	.46	.42	.46	1						
Meet	4.78	1.88	.20	.59	.60	.67	.52	1					
Approachable	5.05	1.65	.18	.86	.50	.48	.46	.60	1				
Kind	5.1	1.56	.17	.84	.48	.48	.42	.60	.85	1			
Intelligent	5.3	1.45	.16	.58	.44	.45	.42	.51	.58	.63	1		
Confident	5.84	1.36	.20	.46	.33	.34	.41	.44	.43	.46	.55	1	
Trustworthy	4.98	1.54	.20	.69	.51	.51	.51	.64	.71	.73	.65	.52	1

Note. $p < .001$ for all correlations.

Regarding nonverbal communication, Hypothesis 3 was also supported, meaning that, overall, female cover models sent more nonverbal cues than did male cover models (female cover models' mean = 5.52, $SD = 1.17$; male cover models' mean = 4.99, $SD = 1.28$, $t(144) = -8.77$, $p < .001$). Also, see Figure 4 for nonverbal means for specific models. Additionally, results show positive correlation between nonverbal communication and gender ($r = .21$, $p < .001$). As Table 4 shows, gender also positively correlated with all individual nonverbal parameters. As Table 5 indicates, both female and male cover models elicited similar nonverbal patterns regarding specific parameters. The difference is that female cover models had a bigger effect for each parameter.

Much like the parasocial effect results, there were no significant differences between female and male subjects regarding nonverbal decoding (female = 5.27; male = 5.22, $t(144) = -.86$, ns). Therefore, Hypothesis 4 was not supported. However, there were slight differences regarding how respondents decoded total nonverbal cues signaled by specific models by gender—Research Question 2—unlike the case with parasocial interaction. Female subjects decoded in the following pattern among their top five choices: first = female, second = female, third = male, fourth = female, fifth = male. Male subjects decoded in the following order of choice pattern: first = female, second = male, third = female, fourth = female, fifth = male. This suggests that female subjects were slightly more likely to decode same-gender nonverbal cues, whereas male subjects were more likely to decode mixed-gender nonverbal cues.

Table 5. Gender-Based Comparisons of Nonverbal Parameters.

Female models			Male models			Overall		
	Mean	<i>SD</i>		Mean	<i>SD</i>		Mean	<i>SD</i>
Confident	6.11	1.18	Confident	5.57	1.47	Confident	5.84	1.36
Intelligent	5.53	1.36	Intelligent	5.07	1.50	Intelligent	5.3	1.45
Approachable	5.35	1.56	Kind	4.84	1.59	Kind	5.1	1.56
Kind	5.35	1.48	Approachable	4.76	1.68	Approachable	5.05	1.64
Trustworthy	5.27	1.43	Trustworthy	4.68	1.58	Trustworthy	4.98	1.54

Research Question 3 queried if there was a relationship between the parasocial interaction and nonverbal communication measurement scales. The data indicate that there is a strong relationship between the two. First, the two measures correlated regarding their respective composite scores (parasocial = 4.70, nonverbal = 5.26, $r = .77$, $p < .001$). Even when examined separately by the gender of the cover models, the correlation remains healthy (female model sample, $r = .75$, $p < .001$; male model sample, $r = .77$, $p < .001$). A detailed examination of the correlations among specific items for the two measures is shown in Table 4. Here, all combinations of individual parasocial interaction and nonverbal parameters significantly correlated positively at the $p < .001$ level. The most notable are approachability and friendliness ($r = .86$, $p < .001$); friendliness and kindness ($r = .84$, $p < .001$); trustworthiness and friendliness ($r = .69$, $p < .001$); intelligence and friendliness ($r = .58$, $p < .001$); and trustworthiness and likelihood to purchase a magazine ($r = .51$, $p < .001$). Additionally, OLS regression confirmed a strong relationship between the two measures when predicting parasocial interaction with nonverbal communication ($\beta = .77$, $t(144) = 48.80$, $p < .001$, $R^2 = .60$, $R^2_{adj} = .60$).

When examining subject-only decoding based on gender, correlation was also high between the two measures (female subject sample, $r = .77, p < .001$; male subject sample $r = .80, p < .001$). When examined together regardless of gender, all parameter combinations in the subject sample were significant at the $p < .001$ level. This means that the more the subjects decoded nonverbal cues, the likelier they were to report parasocial interaction and thus congruency between the two measures. Regarding correlations among specific parameters in the subject sample, the following were noteworthy: approachability and friendliness ($r = .86, p < .001$); kindness and friendliness ($r = .84, p < .001$); trustworthiness and friendliness ($r = .69, p < .001$); trustworthiness and desire to meet ($r = .64, p < .001$); and approachability and desire to meet ($r = .59, p < .001$). I discuss the implications of these correlations in the discussion section.

Discussion

This study examined the interplay among gender, parasocial interaction, and nonverbal communication regarding sports magazine covers. The findings provide unique contributions regarding gender and parasocial interaction, gender and nonverbal communication, gender and sports, and the relationship between parasocial interaction and nonverbal communication measurement scales.

Gender, Parasocial Interaction, and Nonverbal Communication

Research shows the existence of gender-based differences in how people interact with media personae, in both how they report parasocial interaction and how they decode nonverbal communication cues. For instance, some studies have found that women report more parasocial interaction than men do (Cohen, 2003; Eyal & Cohen, 2006; Laken, 2009). The current study found results contrary to these findings. First, there were no significant gender-based differences in how subjects reported parasocial interaction. Second, parasocial interaction did not correlate with subject gender. Third, both female and male subjects showed congruency regarding how they reported combinations of individual parasocial parameters. For both gender groups, for instance, there was high correlation between likelihood to read stories about a cover model and the intent to purchase a magazine with him or her on the cover. Also, both female and male subjects displayed nearly identical correlations between the desire to meet a model and the likelihood to purchase a magazine featuring the model on the cover. Fourth, there were no opposite-gender interactions between subjects and models, because female and male subjects reported identical patterns regarding the gender of the cover models they interacted with the most (first = female, second = male, third = female, fourth = female, fifth = female). Likewise, there were no gender-based differences among subjects when decoding nonverbal cues. Female and male subjects reported equal nonverbal effects from viewing the magazine covers. These findings also contradict the extant literature, which has shown gender-based patterns regarding how people decode nonverbal cues. This includes longstanding studies that show that women are better at decoding nonverbal cues from facial expressions and those that show that women score higher in nonverbal accuracy tests (Rosip & Hall, 2004; Rotter & Rotter, 1988).

The null findings regarding gender, parasocial interaction, and nonverbal communication among the test subjects might not be unique but may be a symptom of larger scholarly issues. Most experimental studies cited here and published elsewhere suggest a consensus regarding how differently men and

women decode pertinent cues. The current study largely failed to confirm these prior findings. It is possible that this disjunction could be a result not of seminality but of publication bias, where journals overwhelmingly accept and publish studies that report statistically significant differences (Carpenter, 2012; Franco, Malhotra, & Simonovits, 2014). Publication bias is endemic in various fields, and communication research is not immune to this methodological dogma. Research shows that publication bias negatively affects scholarship in instances where published and unpublished manuscripts differ in findings (Fujian, Hooper, & Yoon, 2013; Martinko, Campbell, & Douglas, 2000; Renkewitz, Fuchs, & Fiedler, 2011). Additionally, scholars who do not find statistical significance in their studies are less likely to seek publication (Cooper, DeNeve, & Charlton, 1997). Although significant findings provide for stronger predictions and more solid theoretical models, ironically, they weaken scholarship if they reflect and reinforce only certain types of findings. One solution for this problem is for journal editors to accept well-grounded studies that report null results. Prominent journals in other fields are now accepting manuscripts that report null results, including *The Leadership Quarterly*, *PLOS ONE*, *Journal of Personnel Psychology*, and *Organizational Research Methods*, among others. Some newly established journals, such as *Journal of Negative Results* and *Science Journal of Articles in Support of the Null Hypothesis* exclusively publish null results. This means that the true role of gender in parasocial interaction and nonverbal communication can only be determined once a healthy body of null results accompanies extant literature. The next section discusses the importance and implications of those findings that contradicted extant literature.

Gender Diversity in Sports Coverage

It is well established that sports news coverage has a gender-diversity problem, and sports magazines visuals are not immune to this. For one, women rarely appear on sports magazine covers. As mentioned, a recent study found that of all the 1,500 *Sports Illustrated* covers published between 1954 and 2016, women appeared on only 321 of these, representing 21% of all covers. In the absence of the highly sexualized swimsuit editions, appearance on regular covers falls to 18% (Wasike, 2017). The study also found that entire years went by with no woman appearing on a cover for both *ESPN The Magazine* and *Sports Illustrated*. In an examination of *ESPN The Magazine*, between 1998 and 2007, Engleman, Pedersen, and Wharton (2009) found that, overall, only 5% of photographs depicted women's sports. These two findings are noteworthy, given that the current study used these magazines' covers as stimuli. It is true that sports magazines such as *Sports Illustrated* and *ESPN The Magazine* mainly target a male demographic (Bredholt, 2012), but research also shows that magazine sales are dependent on visual impressions regarding cover designs and cover images, meaning that a visually attractive cover sells better (Iqani, 2012; Kitch, 1999; Spiker, 2003). The findings here show that although men were more enthusiastic about sports, women were more likely to read magazines, and these two variables positively correlated. Also, female cover models had a higher parasocial and nonverbal effect, meaning that covers featuring women made a better first visual impression and therefore had a better potential to attract readers, and maybe buyers. The combination of the abovementioned factors suggests missed opportunities regarding improved sports magazine sales and the lack of women on the covers, at least as far as the visual communication of covers is concerned.

Parasocial Interaction and Nonverbal Measurements Scales

Another important finding is that both the parasocial interaction and nonverbal measurement scales used here have a strong relationship. This finding has important methodological implications for visual communication research. For one, most experimental studies on parasocial interaction use video as stimuli. However, the Rubin et al. (1987) and Dibble and Rosaen (2011) scales used here were appropriate for static stimuli, just as the nonverbal scale was. The 5-item parasocial scale registered high reliability ($\alpha = .86$), just like the nonverbal scale ($\alpha = .89$). Furthermore, both scales showed significant correlation with each other ($r = .95, p < .001$). Even when examined separately for female and male subsamples, the correlation remained high (female, $r = .83, p < .001$; male, $r = .87, p < .001$). Also, all combinations of specific parasocial and nonverbal parameters significantly correlated with each other. Additionally, the nonverbal communication scale predicted a large portion of the parasocial interaction scale as shown by the OLS regression results ($\beta = .95, p < .001$).

These reliability and correlation scores match or even exceed those found in other studies. Eyal and Cohen (2006) found less correlation between their parasocial breakup scale and parasocial relationship scale ($r = .68, p < .001$). Cohen (2003) found reliability scores between Cronbach's alphas ($\alpha = .77$ and $\alpha = .85$) regarding pretest, teen, and adult samples in a study of parasocial breakups. Therefore, the findings in the current study demonstrate that the parasocial measurement scale can be used reliably in experiments using static stimuli within visual communication research. It also shows that reliability improves when a nonverbal scale is incorporated. This suggests an additive rather than subtractive effect, thus extending both parasocial interaction and nonverbal communication methodology.

Limitations

Despite the important findings discussed, this study inevitably comes with certain shortcomings. First, unlike most parasocial and nonverbal studies using experimental designs, this study did not alter the stimuli. Even though I matched similar pairs of covers featuring female and male models, no two covers are identical, and this discrepancy might have elicited effects that were not captured in the results. Second, no two magazine covers carry the same cover lines (textual teasers and thematic briefs accompanying the main image). Even though subjects were instructed to concentrate on the cover model, the effect of these textual briefs was not measured, and that, too, might have affected responses in a way the measurement scales did not capture. Regardless, an unaltered magazine cover represents an authentic stimulus, given that subjects familiar with *Sports Illustrated* could have easily noticed missing cover lines and altered images, a negative outcome mitigated by using authentic covers. Third, because the stimuli were not randomized, all subjects viewed them in the same order, and there is a chance of random order effects. However, given that the brevity of the exercise (11 minutes on average for subjects to complete responses), this concern is mitigated. Fourth, the cover models represent both active and retired athletes as well those of different racial and ethnic backgrounds. The results reported here do not account for these factors. It is possible that active athletes, such as Serena Williams and Danica Patrick, benefited from familiarity, as opposed to retired athletes, such as David Cone or Johnny Unitas. Indeed, data indicated that active athletes collectively scored significantly higher in both parasocial interaction and nonverbal communication. However, this concern is mitigated in several ways. For one, three of the four

active athletes were female. Also, the lone retired female athlete, Michelle Kwan, significantly outscored her four male counterparts in both the parasocial and nonverbal effect, even though no gender differences existed among contemporary athletes. It seems that the gender effect surpasses contemporaneity. Notable also is that the correlations among the individual and composite parasocial and nonverbal parameters remained largely unchanged even when the athlete's active status was accounted for. All the above-mentioned indicate that gender did have a significant effect on the test subjects' perception of parasocial interaction and nonverbal communication. Last, any generalization of the results should be done within the scope of this study using a student sample and not the general public.

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