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The Interrelated Roles of Traditional Media and Social Media in Adolescents’ Development
of an Objectified Self-Concept: A Longitudinal Study

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Abstract

Previous research has shown that mass media stimulate the development of an objectified self-concept. However, we know little about the role social networking sites (SNS) play in these relationships. The current longitudinal study ($N = 1,041$) aimed to fill this gap by studying adolescents' frequency of SNS use in general and their use of SNS to monitor attractive peers in particular. The results showed that the use of sexualizing mass media was associated with considering the appearance ideals promoted in mass media as one's own standards to pursue. This internalization of appearance ideals, in turn, was related to the tendency to monitor attractive peers on SNS. Both the use of SNS to monitor attractive peers and the use of sexualizing mass media stimulated self-objectification and body surveillance over time. The frequency of SNS use played a limited role in the relationship between mass media and an objectified self-concept.

Keywords: adolescence, social networking sites, traditional media, self-objectification, body surveillance

The Interrelated Roles of Traditional Media and Social Media in Adolescents' Development
of an Objectified Self-Concept: A Longitudinal Study

Contemporary Western society prescribes a thin body for girls and a muscular body for boys as principal appearance standards (Aubrey & Frisby, 2011; Ricciardelli, Clow, & White, 2010; Vandebosch, Vervloessem, & Eggermont, 2013). These narrowly defined standards are also proposed as conditions for being considered sexually attractive. On television, for instance, characters who adhere to such standards are more likely to date (Greenberg, Eastin, Hofschire, Lachlan, & Brownell, 2003). Such portrayals suggest a disregard of the potential role of one's personality in attractiveness. The emphasis on and promotion of appearance ideals within the context of sexual attractiveness have been referred to as sexualization (APA, 2007).

Scholars (Moradi & Huang, 2008; Vandebosch & Eggermont, 2012) inspired by Fredrickson and Roberts' (1997) objectification theory have criticized the focus on the body as an instrument of sexual attractiveness. These scholars (e.g., Vandebosch & Eggermont, 2012, 2014) have claimed that exposure to sexualizing media content relates to a process of endorsing the appearance standards promoted by the media as one's own standards, described by Thompson and Stice (2001) as the internalization of appearance ideals. Internalization, in turn, is hypothesized (e.g., Vandebosch & Eggermont, 2012) to trigger the development of an objectified self-concept, operationalized as self-objectification (Noll & Fredrickson, 1998) and body surveillance (McKinley & Hyde, 1996). Such an objectified self-concept is related to various mental and physical health risks, such as depression, eating disorders and sexual dysfunction (Moradi & Huang, 2008).

A large number of studies have linked internalization, self-objectification and body surveillance to the use of mass media. Despite this evidence (e.g., Moradi & Huang, 2008; Morry & Statska, 2001; Tiggemann, 2005), however, we still know relatively little about the

role of social media in these processes. To address this lacuna, the current three-wave panel study aims to investigate how adolescents' use of mass and social media may fit together in an explanatory model on developing an objectified self-concept.

This study contributes to the current literature in at least three ways. First, this study addresses the need to learn more about the relationship between mass media use and social media use (Prieler & Choi, 2014). Based on prior research on objectification (e.g., Vandebosch & Eggermont, 2012) and recent theory on social media (Perloff, 2014a), we examine whether exposure to sexualizing mass media content predicts adolescents' behavior in online social environments over time. Second, this study investigates whether social media use affects the development of an objectified self-concept over time. As such, this study aims to contribute empirical longitudinal evidence related to the theoretical proposition (Perloff, 2014a) that social media negatively affect individuals' body image. Third, this study addresses adolescents' social media behavior in two ways: It examines not only adolescents' use of social networking sites (SNS) in general but also adolescents' use of SNS to monitor attractive "friends" (or peers) in particular. The latter focus answers scholarly calls to investigate the role of SNS in the development of body image using specific appearance-focused measures (Perloff, 2014b; Vandebosch & Eggermont, 2012) and to devote more attention to the importance of focusing extensively on the appearance of others (Zurbriggen, Ramsey, & Jaworski, 2011). We refer to this appearance-focused use of one's online network as the "Monitoring of Attractive Peers on Social Networking Sites" (MAP-SNS).

Mass Media, the Internalization of Appearance Ideals, Self-Objectification and Body Surveillance

Content analyses have consistently demonstrated that mass media tend to apply an unattainable standard of appearance to the youths they portray. For instance, a study of cover models in women's magazines across 12 countries found that nearly all cover models were

conspicuously thin (Yan & Bisell, 2014). Research on popular reality television shows indicated that male characters are more likely than their male counterparts in the U.S. population to be muscular (Dallesasse & Kluck, 2013). Moreover, studies have shown that the media present these unrealistic appearance ideals in such a way that these ideals seem to determine one's level of sexual attractiveness (APA, 2007; Vandebosch et al., 2013). Holding an individual to a standard that equates physical attractiveness (narrowly defined) with being sexy is considered a dimension of "sexualization" (APA, 2007, p.1).

In particular, the literature has suggested that music entertainment television (i.e., music videos and reality television) and magazines are major sources of sexualizing messages. Both female and (to a lesser extent) male characters in music videos, reality shows and magazines have been shown to conform to narrow beauty ideals (Aubrey & Frisby, 2011; Dallesasse & Kluck, 2013; Vandebosch et al., 2013; Yan & Bisell, 2014). Moreover, these types of content appear to establish a link between those individuals' compliance with aesthetic ideals and their being sexually successful (Vandebosch et al., 2013). For instance, a study on Belgian music and reality television (Vandebosch et al., 2013) demonstrated that one out of four scenes made a connection between (mostly female) characters' adherence to narrowly defined body ideals and sexual attractiveness. Women's and men's magazines recurrently convey the message that complying with appearance ideals increases the quality of one's (sexual) life (Parker, 2002; Ricciardelli et al., 2010).

Objectification theory (Fredrickson & Roberts, 1997, p.174) suggests that individuals who experience and/or observe such instances of the body predominantly being valued for its use to others may begin observing their own bodies from the perspective of an observer. Media effects research supports this hypothesis, showing, first, that the extent of watching music entertainment television and reading fashion, gossip, and men's magazines predicts the extent to which users consider the portrayed ideals as their own personal appearance

standards (Morry & Statska, 2001; Tiggemann, 2005; Vandebosch & Eggermont, 2012, 2014). Second, research has shown that this internalization of appearance standards causes adolescents to objectify themselves (e.g., Morry & Statska, 2001; Vandebosch & Eggermont, 2012, 2014), which implies that they consider body attributes that are important for sexual attractiveness (i.e., physical attractiveness, coloring, weight, sex appeal, and measurements and, for males, muscular strength and muscle tone) to be more important than more competence-focused body attributes, such as stamina, health, physical fitness and physical energy levels (i.e., self-objectification). Third, this internalization of appearance standards has been shown to trigger body surveillance (Fitzsimmons-Craft, Harney, Koehler, Danzi, Riddell, & Bardone-Cone, 2012; Vandebosch & Eggermont, 2012, 2014), i.e., a regular monitoring of one's appearance to check for compliance with internalized standards of appearance. Fourth, research has demonstrated that self-objectification also affects the behavioral tendency of body surveillance (Tiggemann & Williams, 2012; Vandebosch & Eggermont, 2012). Attaching a greater importance to observable appearance-based body attributes (self-objectification) may encourage adolescents to monitor these appearance-based body attributes (i.e., body surveillance). Together, studies have thus confirmed the existence of a set of associations among the exposure to mass media, the internalization of appearance standards, self-objectification, and body surveillance. Following this research, we construct the following hypothesis.

Hypothesis 1: Exposure to sexualizing music entertainment television (H1a) and magazine content (H1b) will positively predict the internalization of appearance ideals, which will, in turn, trigger self-objectification (H1c) and body surveillance (H1d) over time. Self-objectification will positively predict body surveillance (H1e).

Use of Social Networking Sites within the Framework of Sexualization

An increasing number of studies have indicated the important role that appearance and attractiveness seem to play in the way people behave on SNS. A study of profile pages (Kapidzic & Herring, 2014) indicated that 20.4% of profiles showed pictures in which the adolescent user wore revealing attire (e.g., showing cleavage), and 16.9% contained pictures in which the user was partly undressed (e.g., wearing a swimsuit or swim trunks; Kapidzic & Herring, 2014). No less than 44% of the analyzed profiles of teenagers in a study on Fotolog (Crescenzi, Araña, & Tortajada, 2013) appeared to showcase a sexy self-presentation of the user. Approximately one out of four participants in Strano's (2008) study indicated that they changed their profile pictures when they found new pictures that portrayed them as more attractive. Qualitative research on girls (Bailey, Steeves, Burkell, & Regan, 2013) added that being attractive on SNS is considered important for being liked by peers.

Referring to these and other findings, media research on self-objectification has called for a more empirical understanding of the relationship between social media use and self-objectification (de Vries & Peter, 2013). Moreover, the lack of knowledge about the interplay between social media and previously reported associations between mass media and an objectified self-concept currently impedes the formation of more advanced theory. To address this lacuna, this study proposes to examine whether exposure to mass media may predict social networking behavior through the internalization of appearance ideals. Moreover, we aim to explore whether this use of SNS may, in turn, stimulate the development of an objectified self-concept.

Mass Media, Internalization and Social Networking Sites

As argued above, growing evidence indicates that exposure to popular mass media, such as sexualizing magazines and music entertainment television, stimulates the internalization of appearance ideals (Morry & Statska, 2001; Tiggemann, 2005; Vandebosch & Eggermont, 2012, 2014). Perloff's recently introduced transactional model of social media

and body image concerns (2014a, 2014b) added that this internalization, in turn, may stimulate the use of social media. Perloff (2014a) predicted that individuals who have internalized appearance ideals from mass media will seek to meet their appearance needs by consuming SNS. This hypothesis is not farfetched given the importance of appearance and attractiveness on SNS and given the many different ways in which internalized beauty ideals may be addressed in SNS behavior (Perloff, 2014a); SNS allow users, for instance, to use others' profiles to examine common internalized appearance standards (Perloff, 2014a) and/or to post images of themselves and thus to experience how friends react to their looks. Nevertheless, this hypothesis has only been tentatively confirmed by one cross-sectional study of adolescent girls (Tiggemann & Slater, 2013), which showed that the internalization of appearance ideals was higher among Facebook users than among non-users. To further examine this assumption, we form the following hypothesis.

Hypothesis 2: The internalization of appearance ideals after the exposure to sexualizing music entertainment television and magazine content will positively predict the overall amount of SNS use over time.

In addition, the current study investigates one of the more specific ways in which individuals who have internalized appearance ideals may use SNS to validate their self-concept (Perloff, 2014a): The extent to which one uses SNS to monitor attractive peers on SNS. We selected this particular focus because images of attractive peers may be particularly important for individuals who have internalized appearance ideals in validating that "they themselves measure up to idealized others" (Perloff, 2014a, p.7).

Studies have shown that attractive peers are more popular on SNS on average. One study revealed that college students would rather "friend" someone from the opposite sex who rated higher in facial attractiveness (Wang, Moon, Kwon, Evans, & Stefanone 2010), whereas Pena and Brody (2014) suggested that users are more interested in monitoring the SNS

activities of sexually attractive individuals, even when these “friends” tend to send unpleasant messages. In Perloff’s (2014) view, the online popularity of attractive peers can be explained by users’ prior internalization of appearance standards from mass media. Accordingly, Meier and Gray (2014) showed that the internalization of mass media ideals is related to adolescents’ use of SNS to browse or post photos and, thus, to focus on appearance. However, Meier’s and Gray’s study (2014) did not focus on monitoring the online profiles of attractive peers in particular. Moreover, no study has examined whether MAP-SNS may be related to exposure to sexualizing mass media through the internalization of appearance standards. Because Perloff’s (2014) transactional model suggests MAP-SNS may serve as a particular type of appearance-gratifying SNS behavior, we aim to test the following hypothesis.

Hypothesis 3: The internalization of appearance ideals after exposure to sexualizing music entertainment television and magazine content will positively predict the monitoring of attractive peers on SNS over time.

Social Networking Sites, Self-Objectification and Body Surveillance

In the next step, the transactional model of social media and body image concerns (Perloff, 2014a, 2014b) predicts that appearance-gratifying SNS behavior (interpreted in the current study as SNS behavior motivated by the internalization of appearance ideals) will negatively affect body image. Based on prior research, it can be argued that these negative effects may include the development of an objectified self-concept. As explained above, objectification theory (Fredrickson & Roberts, 1997) expects that individuals who experience and/or observe instances of the body predominantly being valued for its use to others are more likely to develop an objectified self-concept. From this perspective, findings on SNS as an important source of images in which the body is presented to be appreciated by others are relevant (e.g., Kapidzic & Herring, 2014; Willem, Araña, Crescenzi, & Tortajada, 2012). The occurrence of such content on SNS is likely to support the development of self-

objectification and body surveillance among users who have internalized traditional appearance standards from mass media.

Part of this reasoning has been supported in cross-sectional studies across various countries. The cross-sectional research of Vandebosch and Eggermont (2012) showed that using SNS was related to self-objectification and body surveillance in Belgian adolescent girls. Similarly, Tiggemann and Slater (2013) found that Australian girls scored higher than non-users on body surveillance when using SNS. Manago, Ward, Lemm, Reed, and Seabrook (2014) added that male and female American college students' increased involvement in Facebook activities predicted an objectified body consciousness, including the component of body surveillance.

Longitudinal evidence of this relationship is lacking, however, which may currently impede conclusions on the direction of the relationship between SNS use and an objectified self-concept. Moreover, no research has related the association between SNS use and an objectified self-concept to the internalization of appearance ideals from mass media.

Therefore, the current study aims to test the following hypothesis in addition to hypotheses 1 and 2.

Hypothesis 4: The frequency of SNS use will positively predict self-objectification (H4a) and body surveillance (H4b) over time.

In addition, it can be argued that the development of an objectified self-concept will be triggered by the specific appearance-gratifying SNS behavior on which this study focuses, i.e., monitoring attractive peers on SNS. Individuals who engage in this behavior more often can be expected to focus particularly on the appearance (rather than on the personality) of others. Objectification theory (Fredrickson & Roberts, 1997) argues that focusing almost exclusively on the appearance of others is likely to make an individual more conscious about his or her own body and to eventually lead to an objectified self-concept. Studies have

substantiated this proposition. Strelan and Hargreaves (2005) found that valuing appearance over competence in others tends to be related to more self-objectification; furthermore, valuing appearance-related attributes in a romantic partner rather than his/her competence-related body attributes has been associated with self-objectification (Zurbriggen et al., 2011). In addition to hypotheses 1 and 3, we formulate the following hypothesis.

Hypothesis 5: Monitoring the appearance of attractive peers on SNS will positively predict self-objectification (H5a) and body surveillance (H5b).

Figure 1 presents the model predicted in Hypotheses 1 to 5. Together, the hypothesized relationships suggest the existence of additional pathways through which mass media may influence adolescents' objectified self-concept. The model is tested using data from a three-wave panel study. Because the major aim of the study is to reveal a temporal order in the relationships over time between (1) mass media, (2) SNS, and (3) the development of self-objectification and body surveillance, we model the longitudinal relationships focusing on these links.

Gender Differences

The literature has highlighted that girls are more frequently the subject of sexualizing messages in mass media than are boys (e.g., Vandenberg et al., 2013). Moreover, objectification theory (Fredrickson & Roberts, 1997) was originally developed to explain self-objectification among women and girls because they are particularly subjected to the practice of treating individuals as bodies. On the contrary, although the practice of sexualizing male characters is less prevalent in media content, scholars have also successfully applied the principles of the objectification framework to male media users. This research showed that young men's body images also tend to be affected by exposure to sexualizing mass media (Knauss, Paxton, & Alasker, 2008; Morry & Statska, 2001) and activities on social media (Manago et al., 2014).

Research that focuses on gender differences has further noted that many associations between media use and an objectified self-concept occur to a similar extent among male and female media users (Manago et al., 2014; Morry & Statska, 2001); however, differences have been found regarding the consequences of developing an objectified self-concept (Knauss et al., 2008; Manago et al., 2014; Slater & Tiggemann, 2010). For instance, Slater and Tiggemann (2010) explored gender differences in the consequences of body surveillance among adolescent boys and girls and concluded that the relationships between body surveillance and harmful consequences, such as appearance anxiety and disordered eating, were stronger in girls than in boys.

The objectification literature thus suggests that gender may play a role in the development of an objectified self-concept; however, limited evidence on the differences between boys' and girls' associations between media use and objectification outcomes has emerged. Against this background, we propose the following research question:

Research question 1: Does the hypothesized model work differently for boys and for girls?

Alternative Models

Although this study hypothesizes that SNS use and MAP-SNS use precede self-objectification and body surveillance, the literature also suggests reverse relationships. Perloff's model (2014a, 2014b), for instance, expects that the influence of social media on users' body image is transactional, implying that self-objectification and body surveillance, in turn, may predict SNS use and MAP-SNS use. Selective exposure theory (Zillmann & Bryant, 1985) also suggests that individuals' self-concept affects the way they consume media. According to this theory, adolescents with an objectified self-concept are more likely to use a medium that offers opportunities to value appearance above competence (self-objectification) and to monitor appearance (body surveillance). SNS in general and MAP-SNS in particular

encompass these practices and may thus be predicted by self-objectification and body surveillance. Initial support for the existence of such reverse relationships was found in a cross-sectional study of men (Fox & Rooney, 2014). The study reported that self-objectification predicted higher levels of SNS use. However, the cross-sectional design of that study hinders the drawing of conclusions regarding the direction of this relationship.

Therefore, the following research question is examined:

Research question 2: Is there support for an alternative model in which self-objectification and body surveillance predict the use of SNS and/or attractiveness-focused social network expansion?

Control Variables

In line with prior longitudinal research (e.g., Baumgartner, Valkenburg, & Peter, 2011), the model controls for the baseline values of each dependent variable. In addition, research has suggested that a higher Body Mass Index (BMI) (Knauss et al., 2008; Thompson et al., 2003), being female (Moradi & Huang, 2008), being from a Western country (e.g., Aubrey, 2006; Moradi & Huang, 2008), and being older (e.g., Harrison & Fredrickson, 2003) affect the development of an objectified self-concept. These variables are therefore used as control variables.

Method

Sample and Participant Selection

A three-wave panel study with an interval of six months was conducted among 12- to 18-year-olds. Due to the relatively rapid sequence of developmental changes that occur during puberty (Mul, 2004), a six-month interval was established with the expectation that it would allow for a more comprehensive understanding of developmental trajectories. The institutional review board of the host university approved the study. Informed consent was obtained in accordance with the customary guidelines of Flanders (Belgium). In March 2010,

the first wave was conducted in 12 schools that were selected from a group of schools that agreed to participate from different regions of Flanders (Belgium). Different schooling levels and ages were selected. All students ($N = 1,504$) who were present in the 12 schools during the researchers' school visits completed paper surveys. Students were informed that the study investigated their leisure habits. To increase confidentiality, the researchers ensured that no one would be able to discuss or view the students' answers and asked students to write their identification information on separate forms. After data collection, each respondent was assigned a code, and identifying data were deleted before the survey answers were processed. In September 2010, a second survey ($N = 1,426$) was conducted in the 12 schools that participated in March 2010. In March 2011, a third survey ($N = 1,433$) was administered in the 12 schools. Based on the identification forms at Times 1, 2 and 3, the respondents were tracked over time; 1,041 respondents were tracked over three waves (69.21% of total). The mean age was 15.35 years ($SD = 1.47$). The majority of the sample (95%) was born in Belgium, and 56.6% were boys.

Differences were explored between the adolescents who participated only in the first wave ($N = 463$) and those who participated in all waves ($N = 1,041$) with regard to all relevant variables (all Time 1). An χ^2 -test revealed that the subjects who participated only in the first wave (69.5% and 8.1%, respectively) were significantly more likely than those who completed all of the questionnaires (56.6% and 5%, respectively) to be boys and have originated from another country, $\chi^2_{gender}(1) = 22.56, p < .001$; $\chi^2_{country}(1) = 5.3, p < .05$. Other differences were revealed by a MANOVA analysis using Pillai's Trace, $V = .03, F(9, 1116) = 3.48, p < .001, \eta^2 = .03$. Separate univariate ANOVAs on the outcome variables showed that adolescents who participated only in the first wave scored higher on BMI ($M = 20.37, SD = 3.26$ vs. $M = 19.86, SD = 3.06$), $F(1, 1124) = 5.79, p < .05, \eta^2 = .01$, lower on exposure to sexualizing magazines ($M = 1.00, SD = .41$ vs. $M = 1.06, SD = .40$), $F(1, 1124) = 4.63, p <$

.05, $\eta^2 = .00$, lower on the internalization of appearance ideals ($M = 2.31$, $SD = .87$ vs. $M = 2.53$, $SD = .87$), $F(1, 1124) = 13.81$, $p < .05$, $\eta^2 = .01$, and lower on body surveillance ($M = 2.87$, $SD = .90$ vs. $M = 3.11$, $SD = .84$), $F(1, 1124) = 17.60$, $p < .001$, $\eta^2 = .02$ than did adolescents who participated in all waves.

Assessments and Measures

Demographic variables. Participants reported their height and weight, which were used to calculate BMI (kg/m^2). Additionally, they indicated their country of origin (0 = “Belgium”, 1 = “other country”), age and gender (1 = “boy”, 2 = “girl”).

Use of social networking sites. Participants indicated on an 8-point scale ((almost) never (= 1) through *all day long* (= 8)) how often they visited SNS such as Facebook.

Monitoring of attractive peers on social networking sites (MAP-SNS). A pilot study on the attractiveness-related uses of SNS among 47 adolescents using same-gender and same-age focus group discussions ($n = 10$) was conducted. Based on the results of this pilot study, a 4-item scale on MAP-SNS was developed. The participants were asked to use a 5-point scale ranging from “*I totally disagree*” (= 1) to “*I totally agree*” (= 5) to evaluate the following statements: “When I think a boy or a girl is good looking after a first meeting, I search for his or her profile on Facebook/Netlog”, “When I think a boy or a girl is fun and attractive, I add the person as a friend on Facebook/Netlog”, “Sometimes I search through the photo albums of an attractive boy or girl on Facebook/Netlog”, and “When an attractive but unfamiliar boy or girl asks to add me to his or her network on Facebook/Netlog, I accept the request.” A principal component analysis at Time 1 revealed that these items loaded on one factor (eigenvalue: 2.65; explained variance: 66.21%) with no factor loading below .75. Internal reliability was also demonstrated ($\alpha = .83$).

Exposure to sexualizing music entertainment television and magazines. Using a 5-point scale that presented the options “(almost) never” (= 1), “once or multiple times per

year” (= 2), “*once or multiple times per month*” (= 3), “*once or multiple times per week*” (= 4), and “*(almost) daily*” (= 5), the participants indicated how often they read general “gossip” magazines, such as Dag Allemaal (a local version of People), fashion magazines such as Elle, and men’s magazines such as P-magazine (a local version of Maxim). In addition, a 7-point scale presented the options “*never*” (= 1), “*almost never*” (= 2), “*once or multiple times per year*” (= 3), “*once or two times per month*” (= 4), “*once or two times per week*” (= 5), “*three or four times per week*” (= 6), and “*(almost) daily*” (= 7) to ask how often participants watched three music entertainment channels: TMF, JIMtv, and MTV.

To attribute more weight to the magazines and music entertainment channels that were perceived as more sexualizing, we applied a procedure that was similar to that reported by Zurbriggen, Ramsey and Jaworski (2011). Initially, college students (9 men and 20 women) were trained to address the level of sexualization, which was described as a visual and thematic focus on the body and on appearance in a sexualized manner (APA, 2007). Following the training, the college students were asked to answer three questions on a 5-point scale for each type of media content that was included in the adolescent survey (Zurbriggen et al., 2011). The questions focused on the frequency and intensity of sexualization and on the familiarity of the college students with each type of media content (for a further description, see Zurbriggen et al., 2011). The familiarity with each type of media content was addressed to ensure that particularly the ratings of college students who were familiar with this type of content determined the sexualization weight.

Based on the frequency, intensity and familiarity ratings, a four-step procedure was followed to calculate a sexualization score for each type of media content. First, the frequency, intensity and familiarity scores were multiplied for each type of media content. Second, the total sum of the familiarity ratings of all of the college students was calculated for each type of media content. Third, the weighted sexualization scores were calculated by

dividing the product of frequency, intensity and familiarity (step 1) by the total sum of the familiarity ratings of that particular type of media content (step 2). Fourth, the sum of the weighted sexualization scores was calculated for each type of media content. The result of this procedure, i.e., a sexualization score for each type of media content (.50 = gossip magazines, .60 = fashion magazines, and .72 = men's magazines; .57 = TMF, .53 = JIMtv, and .57 = MTV) was used to weigh the adolescents' ratings of the frequency of reading magazines and watching music entertainment television. To estimate the degree to which the respondents were exposed to sexualizing magazines/music entertainment channels, we calculated their mean scores for the three selected types of sexualizing magazines/music entertainment channels.

The internalization of appearance ideals. In the internalization subscale of the sociocultural attitudes toward appearance scale (Thompson, Van den Berg, Roehrig, Guarda, & Heinberg, 2003), the respondents used a 5-point scale ranging from "*I totally disagree*" (= 1) to "*I totally agree*" (= 5) to evaluate nine items, such as "I wish I looked like the models in music videos" and "I try to look like the people on TV". The internalization subscale has demonstrated validity and test-retest reliability among female college students (Thompson et al., 2003), but research among adolescents has suggested that the scale must be adapted to be reliable for younger respondents (Knauss, Paxton, & Alasker, 2008). Consistent with the findings of Vandenbosch and Eggermont (2012), the reliability tests in this study indicated that two items ("I compare my body to the bodies of TV and movie stars" and "I compare my appearance to the appearance of TV and movie stars") reduced the alpha. Subsequently, we omitted these items, and a reliable seven-item scale remained ($\alpha = .92$).

Self-objectification. Self-objectification was measured using an adapted version of Noll and Fredrickson's original self-objectification questionnaire (1998), the validity and reliability of which have been demonstrated by prior research on adolescents (Vandenbosch &

Eggermont, 2012, 2013). The respondents were asked to evaluate the importance of 12 body attributes on a 10-point scale ranging from “*not at all important*” (= 1) to “*very important*” (= 10). Following Vandebosch and Eggermont (2012, 2013), we performed principal component analyses using direct oblimin separately for boys and girls to extract one appearance-based factor and one competence-based factor.

For girls, the appearance-based body attributes studied were physical attractiveness (factor loading = .81), coloring (.56), weight (.73), sex appeal (.78) and measurements (.66) (eigenvalue 1.88; explained variance 15.68%; $\alpha = .77$), and the competence-based body attributes were physical coordination (.57), stamina (.80), health (.56), physical fitness (.81), physical energy level (.78), muscular strength (.57) and muscle tone (.49; eigenvalue 4.10; explained variance 34.20%; $\alpha = .81$). For boys, the appearance-based factors (eigenvalue: 5.00; explained variance: 41.67%; $\alpha = .85$) included physical attractiveness (.85), coloring (.73), weight (.63), sex appeal (.83), measurements (.60), muscular strength (.66) and muscle tone (.68), and the competence-based factors (eigenvalue: 1.64; explained variance: 13.67%; $\alpha = .83$) included stamina (.83), health (.74), physical fitness (.83) and physical energy level (.78). Physical coordination was removed because its factor loading was less than .40. The difference between the mean scores of the newly created appearance-based factor and competence-based factor addressed the estimated level of self-objectification (ranging from -9 to 9). Higher scores on this measure indicate higher levels of self-objectification.

Body surveillance. The questionnaire included the body surveillance subscale from the objectified body consciousness scale for adolescents (Lindberg, Hyde, & McKinley, 2006), the validity and reliability of which has been demonstrated by prior research (e.g., Grabe & Hyde, 2009; Lindberg et al., 2006). On a 5-point scale ranging from “*(almost) never*” (= 1) to “*(almost) always*” (= 5), the respondents evaluated four statements ($\alpha = .80$),

such as “I often compare how I look with how other people look” and “I often worry about how I look to other people”.

Results

Descriptive Statistics and Preliminary Analyses

The descriptive statistics for all relevant variables are presented in Table 1. At the baseline, adolescents reported that they regularly used SNS ($M = 5.03$, $SD = 2.03$). They also moderately agreed with the statement that they focused on attractive peers' appearance when using SNS ($M = 3.06$, $SD = 1.00$). Furthermore, the adolescents reported that they occasionally read sexualizing magazines (unweighted $M = 1.74$, $SD = .68$) and regularly watched music entertainment television (unweighted $M = 4.38$, $SD = 1.83$). The mean level of self-objectification ($M = -.81$, $SD = 1.63$) indicated that the adolescents valued competence-based attributes more highly than they valued appearance-based attributes. The mean levels of internalization ($M = 2.51$, $SD = .87$) and body surveillance ($M = 3.09$, $SD = .84$) were comparable to the results obtained in other studies on adolescents (Grabe & Hyde, 2009; Knauss et al., 2008).

Zero-order correlations are presented in Table 2. These correlations particularly demonstrate that MAP-SNS use and SNS use at each time point are related to the use of sexualizing magazines, the use of sexualizing music entertainment television, the internalization of appearance ideals, self-objectification, and body surveillance.

Testing the Predicted Models

The hypothesized relationships (Figure 1) were tested using structural equation modeling (AMOS) and the maximum likelihood method. The model was considered to have an adequate fit to the data because the chi-squared to degrees-of-freedom ratio (χ^2/df) was below five, the comparative fit index (CFI) was equal to or higher than .9, the adjusted goodness-of-fit index (AGFI) was equal to or higher than .85, and the root mean square error

of approximation (RMSEA) was below .08 (Byrne, 2010). Consistent with prior research that used structural equation modeling (Baumgartner et al. 2011), we controlled for the baseline values of country of origin, age, gender (except in the model that tested the moderating influence of gender) and BMI by utilizing them as predictors of the endogenous variables. Moreover, the previous level of each criterion variable predicted the criterion variable. For instance, the internalization of appearance ideals at Time 1 predicted the internalization of appearance ideals at Time 2.

Hypothesis 1, Hypothesis 2, and Hypothesis 4. The first model, presented in Figure 2, tested the role of using SNS in the relationships between exposure to traditional media, internalization, self-objectification and body surveillance. For clarity, the measurement details and control variables were omitted. This model showed an acceptable fit of the data, $\chi^2(480) = 2179.60, p < .001$, RMSEA = .06, AGFI = .88, CFI = .91, $\chi^2/df = 5.6$. The model confirmed the hypothesized relationships (H1) between the use of sexualizing magazines, $\beta = .10, B = .27, SE = .10, p < .01$, and sexualizing music entertainment television, $\beta = .06, B = .06, SE = .03, p < .05$ on the one hand and the internalization of appearance ideals on the other hand (all Time 1). The model also indicated (H1) that internalization at Time 1 was related to self-objectification at Time 3, $\beta = .08, B = .15, SE = .03, p < .005$, and body surveillance at Time 3, $\beta = .12, B = .12, SE = .02, p < .005$. Self-objectification was also significantly associated with body surveillance, $\beta = .05, B = .03, SE = .01, p < .05$ (all Time 3). Most importantly, the model demonstrated (H2) that internalization at Time 1 did not predict the use of SNS at Time 2 ($p > .10$). In addition, the use of SNS at Time 2 was not related to self-objectification or to body surveillance at Time 3 ($p > .10$; H4). The model thus supported Hypothesis 1 but provided no support for Hypothesis 2 or Hypothesis 4 regarding the role of SNS.

To address research question 1, analyses were conducted that tested whether gender moderated the predicted relationships. Three multiple-group analyses explored the role of

gender by investigating whether the fit of the model, which assumes that the relationships predicted in respectively Hypothesis 1, Hypothesis 2 and Hypothesis 4 do not vary across gender and are thus constrained to be equal between males and females, differed significantly from the fit of the model that allows the hypothesized relationships to vary between males and females. If the fits of the models appeared to differ significantly, Akaike's Information Criterion (= AIK or AIC) was used to compare alternative linkages between the same concepts. AIK denotes superior linkages with lower values (Byrne, 2010).

The fit of the unconstrained model was good, $\chi^2(910) = 2114.37, p < .001$, RMSEA = .03, AGFI = .88, CFI = .93, $\chi^2/df = 2.32$. Regarding Hypothesis 1, the model comparison test showed that the relationships between boys and girls did not significantly differ, $\chi^2(5) = 10.67, p > .05$. Similarly, no gender differences occurred in the relationships predicted in Hypothesis 2, $\chi^2(3) = 3.77, p > .05$. However, a gender difference occurred in the relationships predicted in Hypothesis 4, $\chi^2(2) = 7.36, p < .05$. The unconstrained model had a significantly better fit than the model that constrained the relationships between boys and girls in terms of the use of SNS at Time 2 and self-objectification and body surveillance at Time 3, $\chi^2(912) = 2121.73, p < .001$, RMSEA = .03, AGFI = .88, CFI = .93, $\chi^2/df = 2.33$. Moreover, the AIK of the unconstrained model, AIK = 2538.37, was lower than the AIK of the constrained model, AIK = 2541.73. The results showed that the use of SNS at Time 2 did not affect boys' level of self-objectification at Time 3, $p > .05$. Girls were found to have higher levels of self-objectification at Time 3 when visiting SNS at Time 2 more frequently, $\beta = .07, B = .07, SE = .03, p < .05$. No significant relationships were found between boys' and girls' use of SNS at Time 2 and body surveillance at Time 3.

Hypothesis 1, Hypothesis 3, and Hypothesis 5. Next, a model tested the particular role of MAP-SNS in the relationships between the exposure to traditional media, internalization, self-objectification and body surveillance. The primary results for MAP-SNS

are summarized in Figure 3. For clarity, the measurement details and control variables were omitted. This model adequately fitted the data and yielded a chi-square value of 3469.56 with 687 degrees of freedom, $p < .001$, RMSEA = .05, AGFI = .87, CFI = .90, $\chi^2/df = 5.05$. First, the model again supported Hypothesis 1 and showed that reading sexualizing magazines, $\beta = .10$, $B = .27$, $SE = .10$, $p < .01$, and viewing sexualizing music entertainment television, $\beta = .06$, $B = .06$, $SE = .03$, $p < .05$, significantly related to the internalization of appearance ideals (all Time 1). Furthermore, the internalization of appearance ideals at Time 1 was associated with self-objectification at Time 3, $\beta = .07$, $B = .13$, $SE = .03$, $p < .005$, and body surveillance at Time 3, $\beta = .12$, $B = .11$, $SE = .02$, $p < .005$. Self-objectification significantly related to body surveillance, $\beta = .05$, $B = .03$, $SE = .01$, $p < .05$ (all Time 3).

Second, the model supported Hypothesis 3, demonstrating that the internalization of appearance ideals at Time 1, $\beta = .09$, $B = .08$, $SE = .02$, $p < .001$, related to MAP-SNS at Time 2. In line with Hypothesis 5, MAP-SNS at Time 2, in turn, predicted self-objectification at Time 3, $\beta = .04$, $B = .07$, $SE = .04$, $p < .005$, and body surveillance at Time 3, $\beta = .07$, $B = .06$, $SE = .02$, $p < .005$.

Third, indirect effects were calculated by multiplying the indirect standardized path coefficients (Cohen & Cohen, 1983). To examine whether the indirect effects were different from zero, we applied a bootstrapping method and used multiple imputations to account for missing values (Honaker & King, 2010). A total of 1,000 bootstrap samples were generated from the dataset, and a 95% confidence interval (CI) was calculated. The additional pathway of MAP-SNS through which the sexualized ideals promoted in mass media may affect self-objectification and body surveillance in adolescents was supported.

More specifically, mediation tests revealed that exposure to sexualizing magazines ($.01 = .10 \times .09$; CI = .002 - .084) was related to MAP-SNS through the internalization of appearance ideals. The indirect influence of watching music entertainment television on

MAP-SNS turned out to be non-significant ($.01 = .06 \times .09$; $CI = -.008 - .017$). Furthermore, the internalization of appearance ideals was significantly associated with body surveillance ($.01 = .09 \times .12$; $CI = .003 - .022$) and self-objectification ($.001 = .09 \times .07$; $CI = .029 - .092$) through MAP-SNS.

To further address research question 1, three multiple-group analyses were conducted to test whether gender (Moradi & Huang, 2008) moderated the relationships hypothesized in Hypothesis 1, Hypothesis 3 and Hypothesis 5. The fit of the unconstrained model was good, $\chi^2(1312) = 2820.10$, $p < .001$, $RMSEA = .03$, $AGFI = .86$, $CFI = .92$, $\chi^2/df = 2.15$. The multiple-group test for Hypothesis 1, $\chi^2(5) = 10.46$, $p > .05$, Hypothesis 3, $\chi^2(3) = 2.38$, $p > .05$, and Hypothesis 5, $\chi^2(2) = 3.56$, $p > .05$, showed that the hypothesized relationships between boys and girls did not significantly differ.

Alternative Models

To address research question 2, two alternative models were tested. First, an inverse model that assessed the potential influence of self-objectification and body surveillance on the use of SNS was tested. The model showed an acceptable fit of the data, $\chi^2(372) = 2302.00$, $p < .001$, $RMSEA = .06$, $AGFI = .89$, $CFI = .90$, $\chi^2/df = 6.19$, and revealed that reading sexualizing magazines, $\beta = .10$, $B = .28$, $SE = .10$, $p < .01$, and viewing sexualizing music entertainment television, $\beta = .06$, $B = .06$, $SE = .02$, $p < .05$, significantly related to the internalization of appearance ideals (all Time 1). Internalization at Time 1, in turn, was associated with self-objectification at Time 2 significantly, $\beta = .08$, $B = .16$, $SE = .04$, $p < .001$, and body surveillance at Time 2 marginally significantly, $\beta = .05$, $B = .05$, $SE = .03$, $p = .07$. Self-objectification also significantly related to body surveillance, $\beta = .07$, $B = .04$, $SE = .01$, $p < .05$ (all Time 2). In contrast to the findings of the model tested above, internalization at Time 1 was found to be associated with the use of SNS at Time 3, $\beta = .08$, $B = .15$, $SE = .05$, $p < .005$. However, neither self-objectification at Time 2 nor body surveillance at Time 2

was found to predict the use of SNS at Time 3 ($p > .10$). No support was thus found for the media selection theory (RQ2).

Second, an alternative model was tested to explore whether self-objectification and body surveillance predict MAP-SNS. The model showed an acceptable fit to the data, $\chi^2(654) = 3330.71, p < .001, RMSEA = .05, AGFI = .87, CFI = .90, \chi^2/df = 5.09$. An examination of the path coefficients revealed that reading sexualizing magazines, $\beta = .10, B = .27, SE = .10, p < .01$, and viewing sexualizing music entertainment television, $\beta = .06, B = .06, SE = .03, p < .05$, were significantly related to the internalization of appearance ideals (all Time 1).

Internalization at Time 1, in turn, was significantly associated with self-objectification at Time 2, $\beta = .08, B = .16, SE = .04, p < .001$ and MAP-SNS at Time 3, $\beta = .09, B = .09, SE = .03, p < .005$. Internalization at Time 1 also was marginally significantly related to body surveillance at Time 2, $\beta = .05, B = .05, SE = .03, p = .07$. Furthermore, self-objectification significantly related to body surveillance, $\beta = .07, B = .04, SE = .01, p < .05$ (all Time 2). However, neither self-objectification at Time 2 nor body surveillance at Time 2 was found to predict MAP-SNS at Time 3 ($p > .10$). Therefore, no support was found for the inverse relationships (RQ2).

Discussion

This longitudinal study aimed to integrate research on the importance of appearance standards in mass media (e.g., Morry & Statska, 2001), the emphasis on appearance in social media (e.g., Perloff, 2014), and an objectified self-concept among adolescents (e.g., Grabe & Hyde, 2009). The current study is the first to empirically support a relationship between the use of sexualizing mass media and the use of social media over time. The findings suggest that individuals who have internalized appearance standards from traditional mass media are more susceptible to developing an objectified self-concept when using social media for appearance-gratifying reasons. In addition, our study results tentatively propose that more

theoretically consistent results can be derived when using a specific appearance-focused measure (i.e., the monitoring of attractive peers on SNS) to study the role of social media. Moreover, the small effect sizes and null findings with respect to the overall use of SNS highlight that the role of social media in body image is complex and needs to be further unraveled. This study was a first step in contributing to our understanding of the role of social media in adolescents' objectified self-concept.

Mass Media, Social Media and Internalization

The first contribution of this study is its findings on the influence of mass media on adolescents' behavior when using SNS. Mass media appear not only to teach adolescents to set unattainable standards of appearance but also to encourage them to apply such standards when using online media. In accordance with assumptions of the objectification literature (e.g., Moradi & Huang, 2008), the results demonstrated that the consumption of sexualizing music entertainment television and magazines influenced adolescents' internalization of appearance ideals. This internalization then informed how adolescents used SNS. Thus, this study extends the literature on media-driven sexualization by demonstrating that adolescents not only consume mass media that tend to treat individuals as bodies rather than as personalities but also consume "new" media (i.e., SNS) in a way that treats other individuals as objectified bodies.

This appearance-based treatment of friends on SNS has also been explained indirectly in this study. According to Perloff's (2014a) transactional model, adolescents seek to monitor attractive friends online because of the standards of attractiveness they have internalized from mass media. Internalization is expected to trigger in media users appearance-gratifying needs that may be gratified when using SNS (Perloff, 2014a). Monitoring attractive peers on SNS may be functional in this respect because it allows users to check the extent to which their peers comply with appearance standards. Future research is, however, needed to further

unravel the reported set of associations between the exposure to mass media, internalization, and MAP-SNS. Additionally, future research may consider studying other appearance-gratifying behaviors, such as the posting of sexy images online (Perloff, 2014a).

It is important to add that the internalization of appearance ideals from mass media appeared to not predict the overall use of SNS when considering a six-month time interval, but it did predict overall SNS use when using a one-year interval. This finding is difficult to explain, given that we conducted the first longitudinal study of this pattern of relationships. One tentative explanation may be that internalization does not increase the amount of time users spend on SNS after six months because adolescents who have internalized appearance ideals may focus on appearance during the time that they already spend using SNS. However, over time, the tendency to gratify appearance needs may become stronger among adolescents who have internalized appearance ideals, causing them to spend more time on SNS after a longer period (e.g., one year). Future research is needed to test this suggestion.

Furthermore, our conclusions contribute to scholars' conceptualizations of the role of SNS in "communication." The rise of SNS has inspired various researchers (e.g., O'Reilly, 2007) to describe how communication opportunities have been extended by Web 2.0 technologies. Unlike traditional media, which disseminate messages to a mass audience, online media enable interpersonal, mediated interactions and mass self-communication in which one user communicates with many other users (Castells, 2007; Morris & Ogan, 2006). Therefore, Web 2.0 communication is not tied to media companies or to other traditional institutions but allows individuals to distribute messages to (mass) audiences. Optimistic viewpoints (Castells, 2007; Livingstone, 2008) have stressed that new media create opportunities for users to produce content that challenges the dominant institutionalized power relations that are typically communicated through mass media. In terms of the objectification literature, users of SNS could use these platforms to challenge the

contemporary sexualizing culture by emphasizing more personal, authentic and “true” values in their online media content.

However, the current study raises questions about these optimistic perspectives in the objectification research. The findings suggest that congruence may exist between mass media content and social networking content because the “mass audience” of traditional media is likely to sexualize others in online media. This finding is consistent with the results of a recent study by Stefanone, Lackaff, and Rosen (2010) that reported that individuals tend to imitate the behaviors learned from reality television when producing their own online media content. These results and those of the current study do not support the notion of a potential “gap” between content consumed through mass media and new media. Rather, the results suggest a convergence between offline content and online content.

The Role of Media in the Development of an Objectified Self-Concept

The second contribution of this study is its identification of an additional pathway through which mass media may affect self-objectification and body surveillance. This study supports de Vries and Peter’s (2013) criticism of the almost exclusive emphasis on traditional media in studies of the potential relationships between media and self-objectification and body surveillance. The results showed that the consumption of sexualizing music videos and magazines related to adolescents’ internalization of appearance ideals, which, in turn, was associated with their tendency to self-objectify and to monitor their own bodies. In addition, the findings suggested that adolescents who internalized the attractiveness ideals promoted by the mass media were more focused on the physical appearance of members of their online social networks. This appearance-focused way of using SNS subsequently appeared to affect self-objectification and body surveillance. Moreover, for girls, the overall use of SNS also was shown to predict self-objectification.

In line with communication literature describing that the effect sizes of media effects are generally small (Valkenburg & Peter, 2012), the effect sizes reported in the current study ranged from .04 to .12. Although the possibility of a Type II error remains warranted and needs to be excluded in future longitudinal research, the popularity of social media use among adolescents (Van Oosten, Peter, & Vandenberg, 2015) suggests that even small effects of social media are worthy of scholarly attention. Moreover, the results warrant future attention because theory and empirical analyses show that both self-objectification and body surveillance contribute to maladaptive outcomes, such as depression, eating disorders, and sexual dysfunction (Fredrickson & Roberts, 1997; Moradi & Huang, 2008). Also, the objectification literature has emphasized the importance of interpreting findings on self-objectification from a developmental perspective (Fredrickson & Roberts, 1997). As adolescents are in the process of developing an identity, relatively small changes in their levels of self-objectification and body surveillance triggered by media use may, over time, lead them toward developing a more objectified identity. This identity will affect how they feel, what they consider important, and, as shown in the current study, with whom they connect. Such “choices” may result in maladaptive developmental trajectories over time. Moreover, because our correlations demonstrated that age is positively correlated with internalization, self-objectification and body surveillance, it may be particularly important to study these factors in more detail for late adolescents and emerging adults.

It is also important to examine two results not found in this study. First, the study considered the possibility of alternative relationships in which self-objectification and body surveillance predicted SNS use or MAP-SNS, but no support was found for such relationships. However, future research on alternative hypotheses remains important because the null results of the current study could be explained by how we approached (attractiveness-focused) SNS use. Self-objectification or body surveillance may not increase the overall use

of SNS or MAP-SNS but may potentially stimulate other appearance-gratifying behaviors on SNS. For instance, adolescents who score high on body surveillance may upload pictures of themselves more frequently to monitor how their network responds to their daily look.

Second, our findings showed no differences between boys and girls in the way MAP-SNS triggered the development of an objectified self-concept. Media research on objectification has started to examine male subjects (e.g., Morry & Staska, 2001). Our findings highlight the importance of continued research attention to young men and boys. Our study suggests that when media use focuses on meeting appearance-gratifying needs, this media use is likely to affect both girls and boys. Male samples thus seem to deserve future attention. However, the findings also showed that the overall use of SNS resulted in increased self-objectification only among girls. This finding corresponds to research that shows that girls post sexy images of themselves on SNS more frequently than boys do (Kapidzic & Herring, 2014). Qualitative research adds that presenting oneself online as attractive is more important for girls than it is for boys (Bailey et al., 2013). Potentially, girls' tendency to self-objectify may therefore be more likely to be affected when using SNS.

Limitations

The findings of this study are limited in some respects. On the whole, this study was restricted by its longitudinal design in terms of the attrition rate, its conclusions about causality, survey measures, which reflected reports of behaviors but not actual behavior, and its application of a three-wave design. Regarding the latter, future research may consider a five-wave design to test the full longitudinal model, i.e., the use of sexualizing mass media (T1), the internalization of appearance ideals (T2), MAP-SNS/SNS (T3), self-objectification (T4), and body surveillance (T5). Future research needs to pay additional attention to dropouts because the attrition rate of the current study was considerable, therefore limiting our conclusions. Moreover, future research may also consider other types of sexualizing mass

media, such as primetime television. Additionally, our measure of MAP-SNS did not differentiate among the genders of the subjects monitored. Future research may examine whether internalization stimulates boys to particularly monitor attractive male peers on SNS and whether girls prefer that female peers validate their self-concept.

Conclusion

In sum, the current study demonstrated that adolescents may learn sexualized appearance ideals from mass media and may apply this knowledge when using SNS by actively searching for attractive peers. Both mass media and appearance-focused social media use were found to enhance self-objectification and body surveillance among adolescents, though in different ways. Moreover, mass media were found to indirectly affect adolescents' development of an objectified self-concept through their appearance-focused use of SNS, which raises additional critical questions about the role of mass media as a socialization agent for youth.

References

- American Psychological Association, Task Force on the Sexualization of Girls (2007). *Report of the APA Task Force on the Sexualization of girls*. Retrieved from <http://www.psych.yorku.ca/leeat/3480/documents/SexualizationofWomentaskforce.pdf>
- Aubrey, J. S. (2006). Exposure to sexually objectifying media and body self-perceptions among college women: An examination of the selective exposure hypothesis and the role of moderating variables. *Sex Roles, 55*, 159-172. doi:10.1007/s11199-006-9070-7
- Aubrey, J. S., & Frisby, C. M. (2011). Sexual objectification in music videos: A content analysis comparing gender and genre. *Mass Communication and Society, 14*, 475-501. doi:10.1080/15205436.2010.513468
- Baumgartner, S. E., Valkenburg, P. M., & Peter, J. (2011). The influence of descriptive and injunctive peer norms on adolescents' risky sexual online behavior. *Cyberpsychology, Behavior, and Social Networking, 14*, 753-758. doi: 10.1089/cyber.2010.0510.
- Bailey, J., Steeves, V., Burkell, J., & Regan, P. (2013). Negotiating with gender stereotypes on social networking sites: From "bicycle face" to Facebook. *Journal of Communication Inquiry, 37*, 91-112. doi:10.1177/0196859912473777
- Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications and programming*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Byrne, D. (1971). *The attraction paradigm*. New York: Academic Press.
- Castells, M. (2007). Communication, power and counter-power in the network society. *International Journal of Communication, 1*, 238-266. doi: 1932-8036/20070238
- Crescenzi, L., Arauna, N., & Tortajada, I. (2013). Privacy, self-disclosure and self-image of Spanish teenagers on social networking sites. The case of Fotolog. *Communication & Society, 26*, 65-78.

- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Dallesasse, S. L., & Kluck, A. S. (2013). Reality television and the muscular male ideal. *Body Image, 10*, 309-315. doi: 10.1016/j.bodyim.2013.02.004
- de Vries, D., & Peter, J. (2013). Women on display: The effect of portraying the self online on women's self-objectification. *Computers in Human Behavior, 29*, 1483–1489. doi: 10.1016/j.chb.2013.01.015
- Fox, J., & Rooney, M. C. (2015). The Dark Triad and trait self-objectification as predictors of men's use and self-presentation behaviors on social networking sites. *Personality and Individual Differences, 76*, 161-165. doi:10.1016/j.paid.2014.12.017
- Fredrickson, B. L., & Roberts, T. (1997). Objectification theory: Towards understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly, 21*, 173-206. doi:10.1111/j.1471-6402.1997.tb00108.x
- Fitzsimmons-Craft, E. E., Harney, M. B., Koehler, L. G., Danzi, L. E., Riddell, M. K., & Bardone-Cone, A. M. (2012). Explaining the relation between thin ideal internalization and body dissatisfaction among college women: The roles of social comparison and body surveillance. *Body Image, 9*, 43-49. doi: doi:10.1016/j.bodyim.2011.09.002
- Grabe, S., & Hyde, J. S. (2009). Body objectification, MTV, and psychological outcomes among female adolescents. *Journal of Applied Social Psychology, 39*, 2840-2858. doi: 10.1111/j.1559-1816.2009.00552.x
- Harrison, K., & Fredrickson, B. L. (2003). Women's sports media, self-objectification, and mental health in black and white adolescent females. *Journal of Communication, 53*, 216-232. doi: 10.1111/j.1460-2466.2003.tb02587.x
- Honaker J., & King G. (2010). What to do about missing values in time series cross-section

- data. *American Journal of Political Science*, *54*, 561–81. doi: 10.1111/j.1540-5907.2010.00447.x
- Kapidzic, S., & Herring, S. C. (2014). Race, gender, and self-presentation in teen profile photographs. *New Media & Society*, 1-14. doi: 10.1177/1461444813520301
- Kandel, D. B. (1978). Similarity in real-life adolescent friendship pairs. *Journal of Personality and Social Psychology*, *36*, 306–312. doi: 10.1037/0022-3514.36.3.306
- Knauss, C., Paxton, S. J., & Alasker, F. D. (2008). Body dissatisfaction in adolescent boys and girls. *Sex Roles*, *59*, 633-643. doi:10.1007/s11199-008-9474-7
- Lindberg, S. M., Hyde, J. S., & McKinley, N. M. (2006). A measure of objectified body consciousness for pre-adolescent and adolescent youth. *Psychology of Women Quarterly*, *30*, 65–76. doi:10.1111/j.1471-6402.2006.00263.x
- Livingstone, S. (2008). Taking risky opportunities in youthful content creation: teenagers' use of social networking sites for intimacy, privacy and self-expression. *New Media & Society*, *10*, 393-411. doi: 10.1177/1461444808089415
- Manago, A. M., Ward, L. M., Lemm, K. M., Reed, L., & Seabrook, R. (2014). Facebook involvement, objectified body consciousness, body shame, and sexual assertiveness in college women and men. *Sex Roles*, *72*, 1-14. doi:10.1007/s11199-014-0441-1
- Meier, E. P., & Gray, J. (2014). Facebook photo activity associated with body image disturbance in adolescent girls. *Cyberpsychology, Behavior, and Social Networking*, *17*, 199-206. doi:10.1089/cyber.2013.0305.
- McKinley, N. M., & Hyde, J. S. (1996). The Objectified Body Consciousness Scale: Development and validation. *Psychology of Women Quarterly*, *20*, 181–215. doi:10.1111/j.1471-6402.1996.tb00467.x

- Moradi, B., & Huang, Y. (2008). Objectification theory and psychology of women: A decade of advances and future directions. *Psychology of Women Quarterly, 32*, 377-398. doi:10.1111/j.1471-6402.2008.00452.x
- Morry, M. M., & Staska, S. L. (2001). Magazine exposure: Internalization, self-objectification, eating attitudes, and body satisfaction in male and female university students. *Canadian Journal of Behavioural Science, 33*, 269-279. doi: 10.1037/h0087148
- Morris, M., & Ogan, C. (1996). The Internet as mass medium. *Journal of Computer-Mediated Communication, 1*, 0-0. doi: 10.1111/j.1083-6101.1996.tb00174.x
- Mul, D. (2004). Puberteitsontwikkeling van Nederlandse kinderen. [Pubertal development of Dutch children]. *Tijdschrift voor Seksuologie, 28*, 82-86.
- Noll, S. M., & Fredrickson, B. L. (1998). A mediational model linking self-objectification, body shame, and disordered eating. *Psychology of Women Quarterly, 22*, 623-636. doi:10.1111/j.1471-6402.1998.tb00181.x
- O'Reilly, T. (2007). What is Web 2.0: Design patterns and business models for the next generation of software. *Communications & Strategies, 1*, 17.
- Parker, E. (2002). *Ladies Home Journal: A content analysis of the marriage advice given in Ladies Home Journal from the 1950s and 1990s*. Paper presented at the AEJMC Conference, Florida.
- Peña, J., & Brody, N. (2014). Intentions to hide and unfriend Facebook connections based on perceptions of sender attractiveness and status updates. *Computers in Human Behavior, 31*, 143-150. doi:10.1016/j.chb.2013.10.004
- Perloff, R. M. (2014a). Social media effects on young women's body image concerns: Theoretical perspectives and an agenda for research. *Sex Roles, 71*, 363-377. doi:10.1007/s11199-014-0384-6

- Perloff, R. M. (2014). Act 2: Extending theory on social media and body image concerns. *Sex Roles, 71*, 414-418. doi: 10.1007/s11199-014-0433-1
- Prieler, M., & Choi, J. (2014). Broadening the scope of social media effect research on body image concerns. *Sex Roles, 71*, 378-388. doi:10.1007/s11199-014-0406-4
- Ricciardelli, R., Clow, K. A., & White, P. (2010). Investigating hegemonic masculinity: Portrayals of masculinity in men's lifestyle magazines. *Sex Roles, 63*, 64-78. doi: 10.1007/s11199-010-9764-8
- Slater, A., & Tiggemann, M. (2010). Body image and disordered eating in adolescent girls and boys: A test of objectification theory. *Sex Roles, 63*, 42-49. doi: 10.1007/s11199-010-9794-2
- Strano, M. M. (2008). User descriptions and interpretations of self-presentation through Facebook profile images. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 2*, 5.
- Stefanone, M. A., Lackaff, D., & Rosen, D. (2010). The relationship between traditional mass media and "social media": reality television as a model for social network site behavior. *Journal of Broadcasting & Electronic Media, 54*, 508-525. doi: 10.1080/08838151.2010.498851
- Thompson, J. K., & Stice, E. (2001). Thin-ideal internalization: Mounting evidence for a new risk factor for body image disturbance and eating pathology. *Current Directions in Psychological Science, 10*, 181-183. doi:10.1111/1467-8721.00144
- Tiggemann, M., & Slater, A. (2013). NetGirls: The Internet, Facebook, and body image concern in adolescent girls. *International Journal of Eating Disorders, 46*, 630-633. doi:10.1002/eat.22141
- Tiggemann, M., & Williams, E. (2012). The role of self-objectification in disordered eating, depressive mood and sexual functioning among women: A comprehensive test of

- objectification theory. *Psychology of Women Quarterly*, 36, 66-75. doi:
10.1177/036168431142050
- Thompson, J. K., Van den Berg, P., Roehrig, M., Guarda, A. S., & Heinberg, L. (2003). The Sociocultural Attitudes towards Appearance Scale- 3: Development and validation. *The International Journal of Eating Disorders*, 35, 293-304. doi:10.1002/eat.10257
- Thompson, J. K., Heinberg, L. J., Altabe, M., & Tantleff-Dunn, S. (1999). *Exacting beauty: Theory, assessment, and treatment of body image disturbance* (pp. 271-310). Washington, DC, US: American Psychological Association.
- Tiggemann, M. (2005). Television and adolescent body image: The role of program content and viewing motivation. *Journal of Social and Clinical Psychology*, 24, 361-381. doi:10.1521/jscp.24.3.361.65623
- Tiggemann, M. (2002). Media influences on body image development. In T. F. Cash & T. Pruzinsky (Eds.), *Body Image: A handbook of theory, research and clinical practice* (pp.91-98). New York: Guilford Press.
- Valkenburg, P. M., & Peter, J. (2013). Five challenges for the future of media-effects research. *International Journal of Communication*, 7, 197-215. doi:1932-8036/20070238.
- Vandenbosch, L., & Eggermont, S. (2012). Understanding sexual objectification: A comprehensive approach toward media exposure and girl's internalization of beauty ideals, self-objectification and body surveillance. *Journal of Communication*, 62, 869-887. doi:10.1111/j.1460-2466.2012.01667.x
- Vandenbosch, L., Vervloessem, D., & Eggermont, S. (2013). "I might get your heart racing in my skin-tight jeans": Sexualization on music entertainment television. *Communication Studies*, 64, 178-194. doi: 10.1080/10510974.2012.755640

- Vandenbosch, L., & Eggermont, S. (2014). The role of television in adolescents' sexual attitudes: Exploring the explanatory value of the three-step self-objectification process. *Poetics, 45*, 19-35. doi: :10.1016/j.poetic.2014.06.002
- Van Oosten, J. M. F., Peter, J., & Vandenbosch, L. (2015). *Adolescents' sexual media use and casual sex: An investigation of the prototype-willingness model*. Paper presented at the International Communication Association. San Juan, May 2015.
- Wang, S. S., Moon, S., Kwon, K. H., Evans, C. A., & Stefanone, M. A. (2010). Face off: Implications of visual cues on initiating friendship on Facebook. *Computers in Human Behavior, 26*, 226-234. doi:10.1016/j.chb.2009.10.001
- Willem, C., Araña, N., Crescenzi, L., & Tortajada, I. (2012). Girls on Fotolog: Reproduction of gender stereotypes or identity play?. *Interactions: Studies in Communication & Culture, 2*, 225-242. doi:10.1386/iscc.2.3.225_1
- Yan, Y., & Bissell, K. (2014). The globalization of beauty: How is ideal beauty influenced by globally published fashion and beauty magazines?. *Journal of Intercultural Communication Research, 43*, 941-214. doi:10.1080/17475759.2014.917432
- Zurbriggen, E. L., Ramsey, L. R., & Jaworski, B. K. (2011). Self- and partner-objectification in romantic relationships: Associations with media consumption and relationship satisfaction. *Sex Roles, 64*, 449-462. doi: 10.1007/S11199-011-9933-4
- Zillman, D., & Bryant, J. (1985). *Selective exposure to communication*. Mahwah, NJ: Lawrence Erlbaum Associates.

Table 1

Descriptive statistics for main variables

	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>
BMI T1	12.82	38.53	19.80	3.06
Age T1	12.00	20.00	15.35	1.47
MAP-SNS T1	1.00	5.00	3.06	1.00
MAP-SNS T2	1.00	5.00	3.19	0.92
MAP-SNS T3	1.00	5.00	3.10	0.93
Social networking sites T1	1.00	8.00	5.03	2.03
Social networking sites T2	1.00	8.00	5.46	1.81
Social networking sites T3	1.00	8.00	5.60	1.74
Sexualizing music entertainment television T1	0.55	3.88	2.43	1.02
Sexualizing music entertainment television T2	0.55	3.88	2.46	0.97
Sexualizing music entertainment television T3	0.55	3.88	2.37	1.01
Sexualizing magazines T1	0.61	2.70	1.03	0.40
Sexualizing magazines T2	0.61	3.03	1.06	0.40
Sexualizing magazines T3	0.61	2.62	1.04	0.39
Internalization of appearance ideals T1	1.00	5.00	2.51	0.87
Internalization of appearance ideals T2	1.00	5.00	2.56	0.81
Internalization of appearance ideals T3	1.00	5.00	2.61	0.86
Self-objectification T1	-6.00	5.31	-0.81	1.63
Self-objectification T2	-7.43	5.40	-0.58	1.66
Self-objectification T3	-6.57	4.71	-0.48	1.62
Body surveillance T1	1.00	5.00	3.09	0.84
Body surveillance T2	1.00	5.00	3.13	0.84
Body surveillance T3	1.00	5.00	3.09	0.84

Note. T1 = Time 1, T2 = Time 2, and T3 = Time 3

Table 2
Inter-correlations between main variables

	Age ₁	Gen ₁	Orig ₁	A ₁	A ₂	A ₃	SNS ₁	SNS ₂	SNS ₃	MT ₁	MT ₂	MT ₃	MG ₁	MG ₂	MG ₃	IT ₁	IT ₂	IT ₃	SO ₁	SO ₂	SO ₃	BS ₁	BS ₂	BS ₃
BMI ₁	.36**	-.03	.02	.08*	.04	.00	.07*	.08*	.05	.03	.00	.00	.07*	.09**	.05	.10**	.07*	.03	.06	.05	.05	.01	.03	.01
Age ₁	1	.13**	-.04	.17**	.07*	-.05	.11**	.06	.08*	.08*	-.03	-.09**	.12**	.10**	.11**	.12**	.09**	.04	.21**	.13**	.12**	.10**	.03	.02
Gender ₁		1	-.07*	.13**	.07*	.03	.16**	.14**	.10**	-.02	-.05	-.08**	.29**	.32**	.31**	.27**	.24**	.25**	.46**	.50**	.53**	.40**	.39**	.43**
Origin ₁			1	-.05	.00	.00	-.02	-.02	.00	.02	.04	.04	-.05	-.06	-.07*	-.03	.01	-.01	-.06	-.07*	-.07*	-.07*	-.04	-.05
A ₁				1	.68**	.57**	.53**	.46**	.43**	.29**	.22**	.19**	.26**	.21**	.21**	.32**	.24**	.23**	.21**	.18**	.18**	.30**	.27**	.28**
A ₂					1	.64**	.42**	.50**	.43**	.24**	.26**	.20**	.22**	.24**	.18**	.26**	.31**	.25**	.17**	.14**	.16**	.24**	.31**	.29**
A ₃						1	.32**	.39**	.47**	.17**	.21**	.21**	.12**	.17**	.18**	.26**	.25**	.30**	.12**	.10**	.14**	.20**	.23**	.29**
SNS ₁							1	.63**	.51**	.29**	.23**	.19**	.18**	.17**	.18**	.16**	.14**	.08*	.19**	.18**	.14**	.24**	.24**	.23**
SNS ₂								1	.67**	.27**	.28**	.22**	.20**	.22**	.18**	.13**	.13**	.09*	.14**	.16**	.15**	.22**	.22**	.21**
SNS ₃									1	.26**	.25**	.25**	.15**	.18**	.17**	.18**	.18**	.14**	.13**	.16**	.13**	.22**	.23**	.25**
MT ₁										1	.75**	.66**	.17**	.12**	.14**	.08*	.08*	.03	.07*	.09**	.03	.05	.07*	.04
MT ₂											1	.75**	.13**	.13**	.12**	.08*	.06*	.05	.04	.07*	.03	.04	.06	.04
MT ₃												1	.10**	.14**	.14**	.03	.04	-.01	-.01	.01	.00	-.01	.02	.01
MG ₁													1	.64**	.62**	.21**	.17**	.18**	.24**	.23**	.25**	.27**	.24**	.24**
MG ₂														1	.70**	.19**	.21**	.23**	.24**	.27**	.26**	.25**	.25**	.26**
MG ₃															1	.23**	.20**	.23**	.23**	.26**	.25**	.24**	.23**	.25**
IT ₁																1	.61**	.54**	.39**	.33**	.33**	.56**	.49**	.47**
IT ₂																	1	.64**	.32**	.32**	.33**	.45**	.53**	.50**
IT ₃																		1	.34**	.34**	.39**	.42**	.47**	.54**
SO ₁																			1	.71**	.69**	.50**	.41**	.41**
SO ₂																				1	.76**	.46**	.44**	.41**
SO ₃																					1	.45**	.45**	.47**
BS ₁																						1	.71**	.66**
BS ₂																							1	.73**
BS ₃																								1

Note. * $p < .05$; ** $p < .01$, A = monitoring attractive peers on SNS, SNS = social networking sites usage, MT = sexualizing music television, MG = sexualizing magazines, IT= internalization of appearance ideals, SO = self-objectification, BS = body surveillance

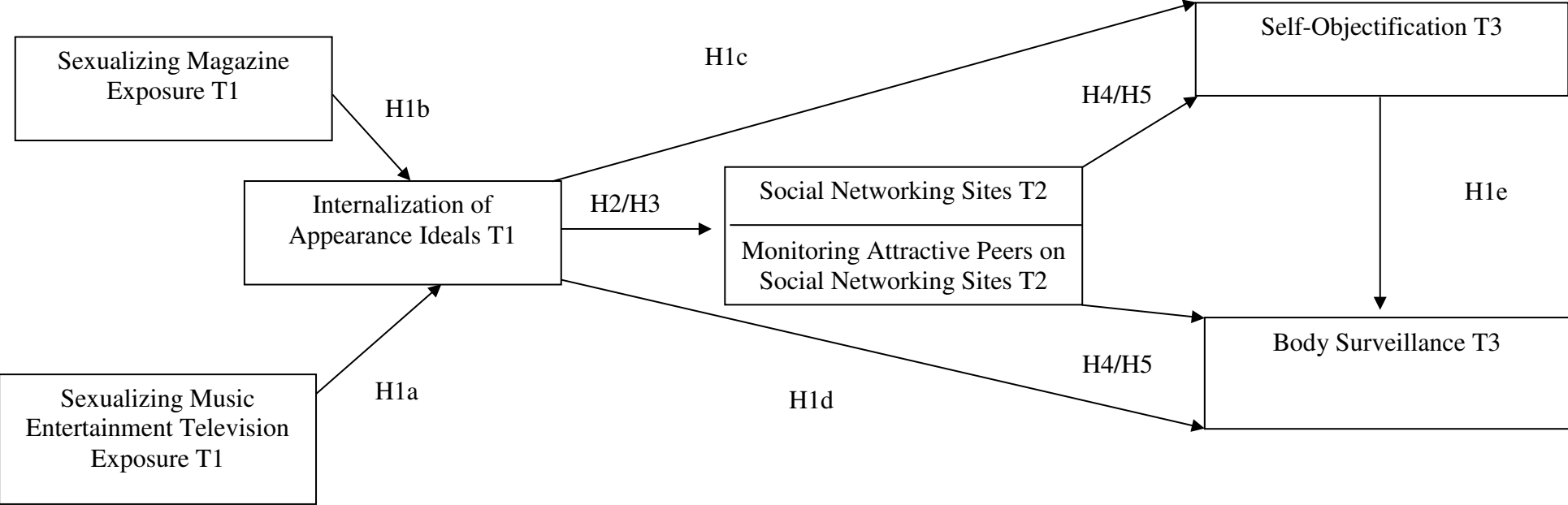


Figure 1. The hypothesized model for the relationships between the use of sexualizing magazines, the use of sexualizing music entertainment television, the internalization of appearance ideals, social networking sites usage/ monitoring attractive peers on social networking sites, self-objectification, and body surveillance.

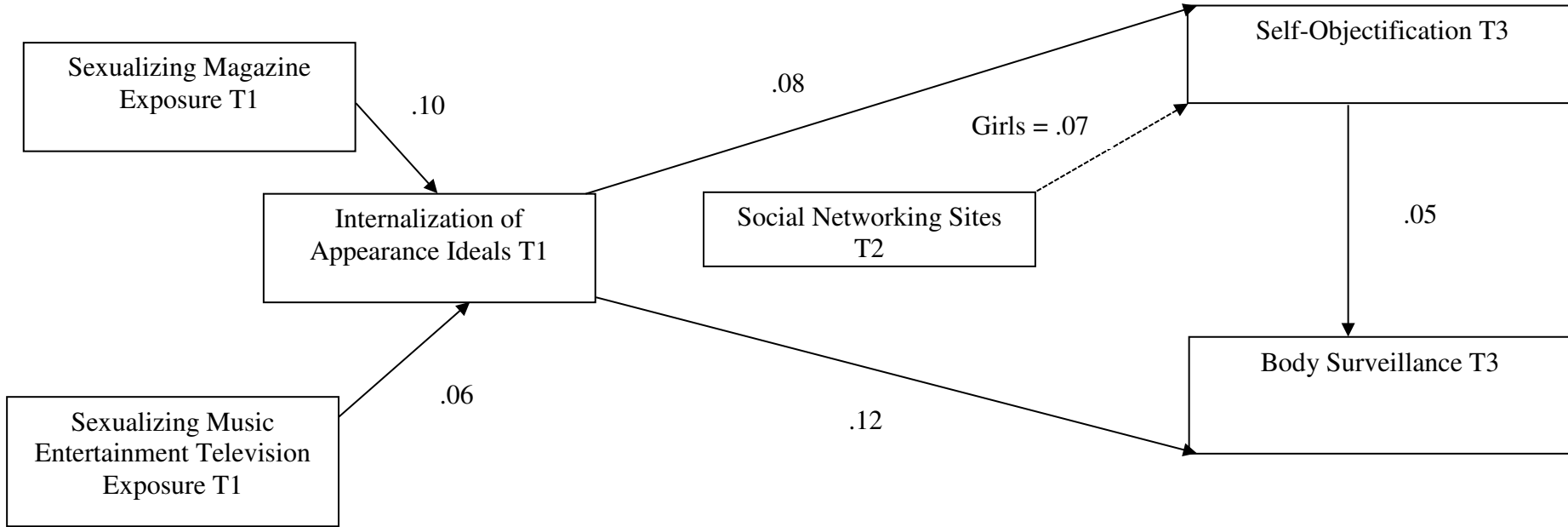


Figure 2. The structural equation models for the hypothesized relationships between of the use of sexualizing magazines, the use of sexualizing music entertainment television, the internalization of appearance ideals, social networking sites, self-objectification, and body surveillance. *Note:* All of the paths are significant at $p < .05$. Dotted paths are only significant in girls. For clarity, the error terms, control variables and measurements are not given. Only standardized values are shown.

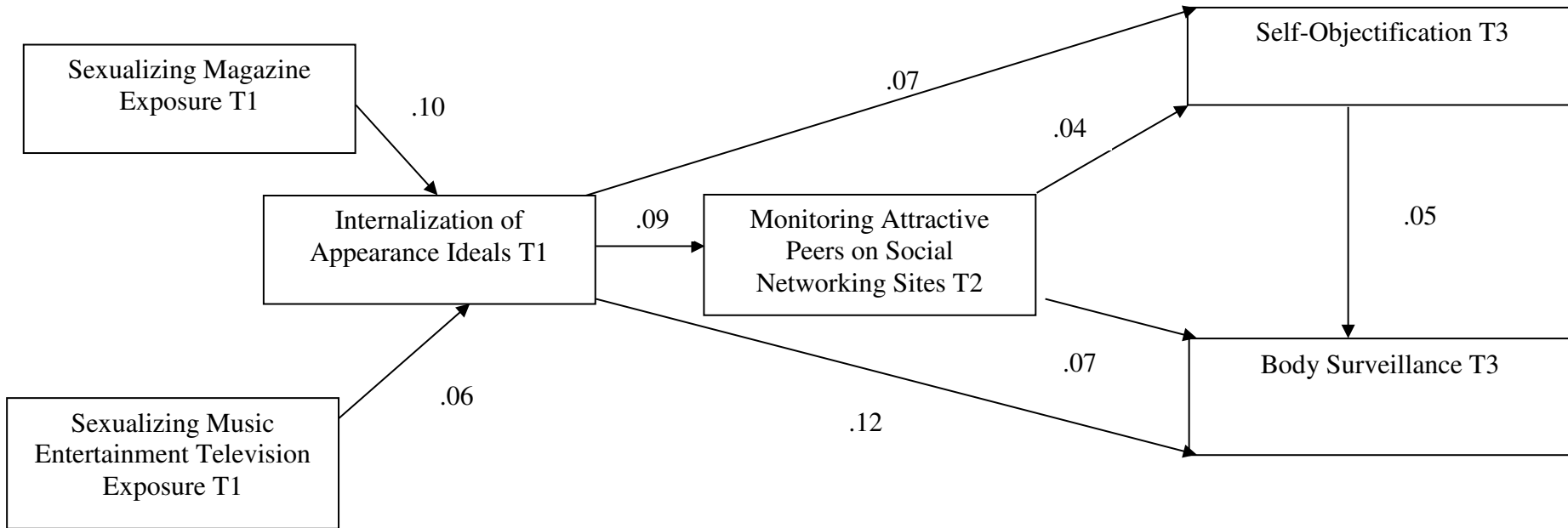


Figure 3. The structural equation model for the hypothesized relationships between the use of sexualizing magazines, the use of sexualizing music entertainment television, the internalization of appearance ideals, monitoring attractive peers on social networking sites, self-objectification, and body surveillance. Note: All of the paths are significant at $p < .05$. For clarity, the error terms, control variables and measurements are not given. Only standardized values are shown.