Social media and online self-presentation: Effects on how we see ourselves and our bodies

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Social media are becoming more and more popular. Many adolescents and adults present themselves online through a social network site or dating profile. Such widespread engagement in self-presentation on social media may have implications for how we see ourselves and our bodies. These self-views, in turn, can have important consequences for our mental health and well-being. This dissertation investigates negative as well as positive effects of social media use and online self-presentation on self-views of adolescents and adults. Regarding negative effects, this dissertation investigates whether, when, and how social media use leads to an increased focus on one’s own physical appearance, increased dissatisfaction with one’s own appearance, and increased desire to alter the own physical appearance using cosmetic surgery. Regarding positive effects, this dissertation investigates whether, when, and how online self-presentation can increase self-esteem. The findings can inform policy making regarding the discouragement of negative effects and the encouragement of positive effects of social media on self-views.
Social media and online self-presentation:
Effects on how we see ourselves and our bodies

Dian A. de Vries
Social media and online self-presentation:
Effects on how we see ourselves and our bodies

ACADEMISCH PROEFSCHRIFT

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aan de Universiteit van Amsterdam
op gezag van de Rector Magnificus
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Faculteit der Maatschappij- en Gedragswetenschappen
Voor mijn ouders
De beste manier om te leren is van een goed voorbeeld
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Chapter 1

Introduction and Dissertation Outline
Describe yourself in three words. Do you like what you see in the mirror? What would you change about yourself if you could change one thing? Your answers to these commonly asked questions give away a great deal of information about how you see yourself and your body. Your responses will tell which characteristics of yourself you focus on most and whether you evaluate these characteristics positively or negatively. These thoughts and feelings about the self are referred to as self-views (Swann, Chang-Sneider, & McLarty, 2007). Research has shown that certain self-views, such as an excessive focus on certain attributes of the self, such as physical appearance, as well as negative evaluations of these attributes adversely impact general well-being and mental health (e.g., Cattarin & Thompson, 1994; Impett, Henson, Breines, Schooler, & Tolman, 2011; Mond, Van den Berg, Boutelle, Hannon, & Neumark-Sztainer, 2011). It is for this reason that academics, but also (mental) health professionals, parents, and teachers, try to understand what shapes self-views.

One potential influence on self-views is the media (Aubrey, 2006; Clay, Vignoles, & Dittmar, 2005; Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murnen, 2002). Research on the effects of media on self-views has typically focused on mass media, such as magazines and TV programs that focus on the importance of looking physically attractive and portray unattainable appearance ideals (e.g., Aubrey, 2006; Grabe et al., 2008; Groesz, et al., 2002). In the past twenty years, however, the media landscape has changed considerably, largely due to the dramatic increase of internet-based communication. A particularly important change is the rise of social media. Social media, such as social network sites (e.g., Facebook, Twitter, Instagram) and dating sites, are internet-based applications that allow the creation and exchange of user-generated content (Kaplan & Haenlein, 2010).

Social media have become increasingly popular (Duggan & Smith, 2013). Dutch adolescents, for example, spend on average 42 minutes per day on a social network site (SPOT, 2012). Of US adults who use the internet, 73% reported using at least one social network site (Duggan & Smith, 2013). Moreover, many social network site users visit the social network site at least once a day or even multiple times a day (Duggan & Smith, 2013). Online dating is also popular and is becoming an increasingly common way to meet a romantic partner among adults (Centraal Bureau voor de Statistiek, 2011; Dutton, Helsper, Whitty, Buckwalter, & Lee, 2008). In the US, for example, 38% of US adults who were single and looking for a romantic partner reported having used an online dating site or app in 2013 (Smith & Duggan, 2013).
The use of social media not only entails receiving and consuming information from others (as is the case with traditional mass media), but also encompasses creating and distributing content to others (Lenhart, Horrigan, & Fallows, 2004). This proliferation of self-generated media content poses an important new challenge to media effects research. As several scholars have emphasized (e.g., Pingree, 2007; Valkenburg & Peter, 2013a), it has become paramount that media effects research no longer exclusively considers the effects of media content on its receivers, but also focuses on the impact of media content on its creators and distributors.

In this context, it is crucial to consider that much of the media content that is created and distributed on popular social media is self-presentational in nature (boyd & Ellison, 2008; Ellison, Heino, & Gibbs, 2006). On many social media platforms, such as social network sites (e.g., Facebook) and dating sites, users share content through a personal online profile (boyd & Ellison, 2008; Ellison et al., 2006). All materials shared through such profiles represent the profile owner explicitly, through self-descriptions and self-depictions or, more implicitly, through shared movie and music preferences, articles and images (Krämer & Haferkamp, 2011; Zhao, Grasmuck, & Martin, 2008). Given the public or semi-public nature of online profiles, viewers of the profile are likely to form impressions of an individual based on the content on the individual's online profile (Ellison et al., 2006). As individuals may be motivated to control the impression their profiles make on this audience (Krämer & Haferkamp, 2011), they engage in impression management, or self-presentation (these two terms are used interchangeably; Leary & Kowalski, 1990). As a result, popular social media, such as social network sites and dating sites, are potent platforms for online self-presentation, that is, all decisions made and behaviors aimed at making certain impressions on other people through social media (Ellison et al., 2006; Krämer & Haferkamp, 2011; Pempek, Yermolayeva, & Calvert, 2009).

An important motivation to engage in self-presentation is not only to influence how others see the self but also to shape one's own view of the self (Baumeister, 1982). Scholars of self-presentation in its offline, face-to-face form have accordingly posited that presenting the self to others influences how one sees the self (Baumeister, 1982; Leary & Kowalski, 1990), which has been supported by empirical research (e.g., Schlenker, Dlugolecki, & Doherty, 1994; Tice, 1992). The notion that self-presentation can impact self-views seems particularly relevant for self-presentation on social media. On social media, people usually
have time to craft a self-presentation. Moreover, they can easily choose how and with which cues they present themselves (Walther, 2007). The controllability of self-presentation in social media gives people flexibility to adjust and change self-presentation, which, as related research suggests (Yee & Bailenson, 2007), impacts how people see themselves.

The centrality of online self-presentation on social media, the evidence that self-presentation in its face-to-face form can influence self-views, and the particularities of online self-presentation together thus point to the possibility that social media use may affect self-views. Research has initially shown that certain forms of social media use, notably on social network sites, indeed are associated with self-views, such as focus on one’s own physical appearance (Vandenbosch, & Eggermont, 2012), body satisfaction (Tiggeman & Miller, 2010; Tiggeman & Slater, 2013), and self-esteem (Gonzales & Hancock, 2011; Kim & Lee, 2011; Valkenburg, Peter, & Schouten, 2006). Overall, however, research in this area is still relatively scarce, which is surprising given the massive use of social media (Duggan & Smith, 2013; SPOT, 2012), and the importance of self-views for well-being (Cattarin & Thompson, 1994; Impett et al., 2011; Valkenburg et al., 2006). Specifically, there are at least three important knowledge gaps, which this dissertation tries to fill.

First, media effects scholars have repeatedly emphasized that to comprehend the effects of media better, we need to understand how and why these effects may come about (Holbert & Stephenson, 2003; Valkenburg & Peter, 2013a). Some studies have started to investigate the processes underlying some effects of different social media platforms on certain self-views (e.g., Tiggeman & Miller, 2010; Valkenburg et al., 2006; Vandenbosch & Eggermont, 2012). However, our knowledge is still basic. Many relations between social media use and self-views remain not well-understood. The first aim of this dissertation is therefore to identify underlying processes that can explain effects of social media use on self-views.

A second gap in the literature about the effects of social media use on self-views is that we do not know for which groups and in which situations these effects hold. This gap is important because there has been growing attention to the possibility that media effects are conditional rather than universal (e.g., Holbert & Stephenson, 2003; Kingston, Malamuth, Fedoroff, & Marshall, 2009; Valkenburg & Peter, 2013a). Media often have different effects depending on individuals’ characteristics and the situations in which individuals use media (e.g., Henderson-King & Henderson-King, 1997; Stice, Spangler, & Agras, 2001; Valkenburg & Peter,
Chapter 1

2013b). However, in the research on the effects of social media on self-views, individual difference characteristics and situational factors have rarely been taken into account. For example, there is some evidence that the use of social network sites is positively correlated with self-esteem (e.g., Gonzales & Hancock, 2011; Valkenburg et al., 2006). However, based on more advanced theorizing about media effects (e.g., Valkenburg & Peter, 2013b) it seems unlikely that these effects are uniform and apply to all users of social network sites equally. Research is thus needed to identify which situational and individual difference factors determine the direction and strength of social media effects on self-views. Therefore, the second aim of this dissertation is to examine how social media use impacts self-views of different individuals in diverse situations.

A third shortcoming in the literature refers to the internal validity of the findings. Although some studies have shown that the use of social media is associated with self-views, most of this evidence, in particular regarding body-related self-views, is correlational (e.g., Tiggeman & Slater, 2013; Valkenburg et al., 2006; Vandenbosch & Eggermont, 2013). These studies suggest that people who see themselves in a certain way are concurrently more frequent social media users. However, these correlational studies cannot tell us unequivocally whether the use of this self-presentational medium predicts changes in self-views. The third aim of this dissertation is therefore to test, with more internally valid designs, if social media use can cause changes in self-views. The causality issue is addressed with a multi-methodological approach that combines experiments and longitudinal (panel) surveys. The combination of experiments and longitudinal (panel) surveys ensures an optimal balance between internal validity (high in experiments, lower in longitudinal surveys) and external validity (high in longitudinal surveys, low in experiments).

In sum, this dissertation aims to investigate whether and through which processes social media use impacts self-views and for whom and under which circumstances these effects hold in particular. The knowledge about the effects of social media use on self-views that this dissertation will provide is needed to predict how negative effects of social media use on self-views can be discouraged, while positive effects can be encouraged. This knowledge seems particularly relevant given the strong relation of self-views to mental health and well-being (Cattarin & Thompson, 1994; Impett et al., 2011; Valkenburg et al., 2006).
Self-Views and Social Media

Self-views constitute all thoughts and feelings about the self and is thus an umbrella for concepts such as self-esteem, self-concept, and self-efficacy (Swann et al., 2007). Although more general self-views can be identified (e.g., general self-esteem), specific self-views are often more informative when looking at the relationship between self-views and other variables (Swann et al., 2007). For example, it seems more useful to study the effects of reading a fashion magazine on self-views related to physical attractiveness than on general self-esteem.

The use of different social media may impact different self-views. This dissertation therefore looks at specific examples of common, popular forms of social media and their influence on specific relevant self-views. In particular, this dissertation deals with social network sites and dating sites. These platforms were selected based on their popularity (Duggan & Smith, 2013; Smith & Duggan, 2013; SPOT, 2012), and more importantly, for the centrality of self-presentation on these sites (Ellison et al., 2006; Krämer & Haferkamp, 2011). On social network sites, adolescents and adults present themselves to friends, relatives, acquaintances and sometimes strangers in order to keep or get in touch with them (Pempek et al., 2009). Dating sites, on the other hand, allow (single) adults to present themselves to potential romantic partners online (Ellison et al., 2006). The self-presentation motives and audience characteristics thus differ between these platforms. Consequently, the use of these different platforms may impact different types of self-views.

On social network sites, an important characteristic on which users evaluate each other is physical attractiveness (Ringrose, 2011; Siibak, 2009). This central focus on physical attractiveness raises questions regarding how such platforms affect the degree to which users focus on their own physical appearance, that is, their level of self-objectification. In addition, being evaluated based on physical attractiveness, as well as seeing others being evaluated in this way, may impact the degree to which individuals want to improve their own physical appearance, possibly with cosmetic surgery (Calogero, Pina, Park, & Rahemtulla, 2010). Furthermore, the strong focus on physical appearance and the comments and feedback received about appearance on social network sites may pressure users to conform to sociocultural body ideals. As the vast majority of individuals do generally not meet these ideals, body dissatisfaction may result (Thompson, Heinberg, & Tantleff-Dunn, 1999). In the context of social network sites, this dissertation therefore studies three self-views: self-objectification (Chapter 2),
desire to change the physical appearance through cosmetic surgery (Chapter 3), and body dissatisfaction (Chapter 4).

Dating sites may impact different self-views than social network sites because people usually visit dating sites for different reasons and encounter different audiences than on social network sites. When online, daters look at each other’s profiles and likely evaluate whether they would like to date each other. As a result, when constructing a profile on a dating site, people will probably try to present the self first and foremost as an attractive potential romantic partner and consider whether they will be seen as an attractive romantic partner by potential dates. This type of self-presentation and the (imagined) responses to this self-presentation in which romantic attractiveness or “dateability” plays a central role may particularly impact the degree to which one sees the self as an attractive potential romantic date or partner, that is, people’s romantic self-esteem. In the context of dating sites, this dissertation thus focuses on people’s romantic self-esteem (Chapter 5).

Underlying Processes

Given the novelty of social media, it is not surprising that we know little about the processes that may underlie effects of social media on self-views. However, existing theories on body-related self-views, such as objectification theory (Frederickson & Roberts, 1997) and the tripartite model of influence on body image (Thompson et al., 1999), as well as theories of impression management, such as the two-component model of impression management (Leary & Kowalski, 1990), have suggested several mechanisms that may explain such effects. Broadly speaking, these mechanisms fall in two groups of variables. The first group encompasses self-related variables, such as individuals’ feelings, cognitions, and behaviors. The second group encompasses other-related variables, such as the reactions from others that individuals receive. This dissertation investigates whether both self- and other-related variables can explain the effects of social media use on self-views.

In terms of self-related variables, the dissertation focuses on individuals’ appearance investment as well as their self-presentational efficacy along with idealized self-presentation as mechanisms that may underlie the effects of social media use on self-views. Several scholars have emphasized that, due to the centrality of appearance, social network sites are likely to impact the appearance-related cognitions and behaviors of those who present themselves on social network sites (Tiggeman & Miller, 2010; Vandenbosch & Eggermont, 2012). One concept that
encompasses such appearance-related cognitions and behaviors is appearance investment. Appearance investment refers to the extent to which individuals’ behavior and thoughts revolve around physical appearance (Thompson, 2004). Importantly, appearance investment has been shown to be associated with desire for cosmetic surgery (Frederick, Lever, & Peplau, 2007; Sarwer et al., 2005; von Soest, Kvalem, Skolleborg, & Roald, 2006). If appearance investment is related to both the use of social network sites and the desire for cosmetic surgery, then social network site use may lead to desire for cosmetic surgery indirectly through appearance investment. Chapter 3 brings these ideas together by investigating whether appearance investment mediates a potential influence of social network site use on desire for cosmetic surgery.

With respect to online dating sites, various scholars have outlined that, compared to offline dating, such platforms facilitate the ways in which users can present themselves to prospective dates (for a review see Toma & Hancock, 2011). This enhanced possibility to present themselves may tempt users of online dating sites to engage in forms of self-presentation in which they strongly idealize themselves (Toma & Hancock, 2011). Given initial evidence that how individuals present themselves online may impact their self-views (Gonzales & Hancock, 2008; Walther et al., 2011), idealized self-presentation may be expected to affect self-views. At the same time, it has been well-documented, that one of the strongest predictors of whether people engage in a particular behavior is their perceived self-efficacy, that is, people’s sense of whether they can execute the given behavior successfully (Bandura, 1977). More specifically, research has shown that people’s sense of whether they are able to make desired impressions on others – self-presentational efficacy, that is – predicts online self-presentational behavior (Krämer & Winter, 2008), which may include idealized self-presentation. Self-efficacy may fluctuate (Bandura, 1977) and, due to the relative controllability of online self-presentation (Walther, 1996; Walther, 2007), may also be impacted by social media use. Self-presentational efficacy may thus explain why online dating sites tempt daters to engage in idealized self-presentation, which in turn may affect self-views. Chapter 5 will deal with this possibility.

In terms of other-related variables that may explain the effect of social media on self-views, the dissertation focuses on appearance training. Given the interactive nature of social media, their use may also impact individuals’ self-views through the reactions of others to the presenters’ online self-presentations. The audience of self-presentations in social media may comment on these self-
presentations directly on the platform (e.g., friends’ comments or likes under a photograph on Facebook) or indirectly in other internet applications (i.e., e-mail, chat) or face-to-face. The nature and frequency of these reactions may determine the presenter’s self-views to some extent.

The type of reactions that self-presenters receive likely depends on the social medium in which the self-presentation occurs. On social network sites, physical attractiveness plays a central role and users typically try to present themselves favorably in terms of their physical appearance (Ringrose, 2011; Siibak, 2009). As a result, the use of social network sites may stimulate comments and feedback on a presenter’s physical appearance. Specifically, presenters may receive feedback from others on the extent to which they match appearance ideals and how they could improve their appearance (Ringrose, 2011), that is, they receive appearance training (Jones, 2004). Appearance training, in turn, is associated with body dissatisfaction (Jones, 2004). Given that the use of social network sites is related to greater body dissatisfaction (Tiggeman & Miller, 2010; Tiggeman & Slater, 2013), it is investigated in Chapter 4 whether appearance training mediates the impact of social network site use on body dissatisfaction.

**Individual and Situational Differences**

To date, we know little about whether individual and situational differences impact the effects of social media use on self-views. Although this gap in the literature is understandable in a new research field, it is at odds with scholars’ recent emphasis on the importance of individual and situational differences in media effects (Holbert & Stephenson, 2003; Kingston et al., 2009; Valkenburg & Peter, 2013a). The current dissertation therefore takes a number of individual and situational factors into account which may moderate the effect of social media use on self-views, namely gender, exposure to mass media content and the anticipated mode of future interaction.

In terms of individual differences in the effects of social media use, this dissertation deals with gender, a variable that is crucial in research on self-views (Bussey & Bandura, 1999; Cross & Madson, 1997; Fredrickson & Roberts, 1997). Gender differences have been documented for various self-views, ranging from focus on and evaluation of the body to general self-esteem (e.g., Kling, Hyde, Showers, & Buswell, 1999; Muth & Cash, 1997). Furthermore, the effect of mass media on body-related self-views has been shown to differ between males and females (Hargreaves & Tiggemann, 2004). Consequently, scholars have argued
that the impact of social network site use on one’s views of the own body may also depend on gender (Tiggeman & Miller, 2010).

Compared to males, females are generally evaluated more strongly based on their physical attractiveness and, as a result, are socialized to focus more on being physically attractive (Fredrickson & Roberts, 1997). These gender differences also manifest themselves online (Manago, Graham, Greenfield, & Salimkhan, 2008; Siibak, 2009). For example, adolescents have reported that for girls it is the norm to promote their physical attractiveness in their profile on a social network site, whereas boys should not be overly concerned with their physique (Manago et al., 2008). Furthermore, girls are more inclined to try to display themselves as physically attractive on their social network site profiles than boys (Siibak, 2009). If there are gender differences in self-presentation on social media and male’s self-presentations are evaluated in a different manner than female’s self-presentations, then it seems conceivable that there are also gender differences in the effects of social media use on self-views. Chapters 3 and 4 will test this assumption.

In terms of situational differences in the effects of social media on self-views, this dissertation deals with exposure to mass media content and the anticipated mode of future interaction. Media use today often means media multitasking, notably for young people (Moreno et al., 2012). When media-multitasking, people use at least two media simultaneously, for example a social medium, such as a social network site, and a traditional medium, such as television. In the context of this dissertation, this raises the general question whether the effects of social media use may be affected by exposure to content from another medium. Given the potential effect of social media on body-related self-views, the more specific question arises whether exposure to content that focuses on physical appearance may boost such an impact. This question will be studied in Chapter 2.

A second situational factor that may determine how self-views are impacted by social media use concerns anticipations about the mode of future interaction. Many computer-mediated interactions, such as those on social media, offer increased control over self-presentations relative to face-to-face communication. Even if only anticipated, these differences in controllability may impact the effects of social media on self-views. For instance, presenting the self on a dating profile may have differential effects on self-views depending on whether the presenter expects future interaction face-to-face or through computer-mediated text-based chat. Assuming that people aim at conveying an idealized impression on their dating site profiles (Toma & Hancock, 2011), anticipated future interaction in the form
of computer-mediated communication offers several chances to maintain this idealized self-presentation, for instance through the careful selection of pictures and crafting of self-descriptions (Walther, 1996; Walther, 2007). By contrast, expecting to meet someone face-to-face has been shown to limit idealization in an online dating profile as this idealized self-presentation may be hard to maintain face-to-face (Gibbs, Ellison, & Heino, 2006). Differences in the mode of anticipated future interaction may thus affect how online daters present themselves, which in turn may impact their self-views. This possibility is studied in Chapter 5.

**Methodological Approach**

In line with the dissertation’s multi-methodological approach, the data used in the four empirical studies come from two experiments (Chapters 2 and 5) and a two-wave panel survey (Chapters 3 and 4). The experiment in Chapter 2 was an online experiment among 221 women aged 18-25 conducted in the beginning of 2012. The second experiment (Chapter 5) was a lab-based experiment conducted in spring 2013. The sample consisted of 92 heterosexual, single women aged 18-41.

The survey data (Chapter 3 and 4) were collected by the Netherlands Youth Institute (Nederlands Jeugdinstuut) and Rutgers WPF (Dutch Expert Centre on Sexuality). The data used in these chapters were part of a larger data set, which included measures of adolescents’ (sexual) media use, sexual attitudes and behaviors, and body image. The sample consisted of 604 adolescents aged 11-18. Participants were recruited through their parents who were members of Intomart GfK, an online access panel that consists of 25,000 members across the Netherlands. In comparison with convenience samples, such recruitment across the Netherlands improves generalizability. The first wave took place in July through September 2008 and the second wave was completed in December 2009.

The empirical studies of this dissertation focus on adolescents, young adults and adults, depending on the social medium studied. In the Netherlands, the majority of adolescents and young adults use social network sites and these are two groups that are the most likely to use social network sites (Van den Bighelaar & Akkermans, 2013). Furthermore, 38% of single adults are on dating sites (Smith & Duggan, 2013). Accordingly, the studies on social network site use focused on adolescents (11-18) and young adults (18-25) and the study on dating sites centered on single adults. Adolescents and young adults were also chosen because the self-views studied are particularly salient and important in these groups (Robins & Trzesniewski, 2005). For example, the studies investigating influences on body-related self-views (Chapters
3 and 4) were conducted among adolescents as their body image is developing and plays an important role for well-being (Cattarin & Thompson, 1994; Impett et al., 2011; Mond et al., 2011; Smolak, 2004). The two experiments included women because they are more likely to focus on their physical appearance (Fredrickson & Roberts, 1997; Muth & Cash, 1997) and tend to have lower self-esteem (Kling et al., 1999) than men.

**Overview of the Chapters**

The aforementioned aims and questions of this dissertation are addressed in four chapters. An overview of the characteristics of each chapter is provided in Table 1.

Chapter 2 tests whether public online self-portrayal as it happens on social network sites leads to self-objectification among women, compared to private self-portrayal. In addition, Chapter 2 explores whether a situational factor, namely being exposed to objectifying media content, impacts the effect of public self-presentation on self-objectification.

Chapter 3 tests the degree to which adolescents’ frequency of social network site use predicts changes in desire for cosmetic surgery and whether this effect is mediated by appearance investment. Furthermore, Chapter 3 investigates whether this effect differs for boys and girls.

Chapter 4 investigates whether adolescents’ frequency of social network site use leads to changes in body dissatisfaction and whether this effect is mediated by appearance training. Furthermore, Chapter 4 tests whether these effects depend on adolescents’ gender.

In Chapter 5 heterosexual single adult women construct an online dating profile. It is explored whether the anticipated mode of future interaction (computer-mediated chat vs. face-to-face) affects romantic self-esteem indirectly through self-presentational efficacy and idealized self-presentation.

The implications of these chapters are discussed in Chapter 6 where more general conclusions are drawn and new gaps in our knowledge are identified. Chapter 6 also offers some practical advice concerning the well-being of adolescents and adults as well as suggestions to guide future research about social media and effects on how we see ourselves and our bodies.
# Chapter 1

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Introduction

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Chapter 1


Introduction


Chapter 1


Chapter 2

Women on Display: The Effect of Portraying the Self Online on Women’s Self-Objectification

Abstract

Objectification research has largely ignored the potential impact of Internet activities, such as online self-portrayal, on women’s self-objectification and whether this may interact with traditional sexually objectifying stimuli. In response to these research gaps, the present study had two goals: first, to investigate if portraying the self to others online leads to self-objectification in women; second, to test whether priming with sexually objectifying content from traditional media moderates the effect of online self-portrayal on self-objectification. We conducted an online experiment with a two (priming stimuli: objectifying vs. neutral) by two (audience: online audience vs. no audience) between subjects design among 221 women aged 18–25. All participants created an online profile, which consisted of choosing an avatar and writing a self-description. As expected, participants in the online audience condition self-objectified more strongly than did participants in the no audience condition. However, this effect only held among those who had been primed with sexually objectifying stimuli. Our results suggest that women’s online self-portrayal, if combined with sexually objectifying stimuli, may lead to self-objectification.
Girls and women frequently experience objectification, meaning that they are valued predominantly in terms of their physical and sexual attractiveness (Calogero, Tantleff-Dunn, & Thompson, 2011; Fredrickson & Roberts, 1997). In daily life, such objectifying treatment is experienced by women during objectifying social interactions, which on average, female students in the United States (US) encounter more than once a week, three times more frequently than male students (Swim, Hyers, Cohen, & Ferguson, 2001). At the same time, objectifying content is pervasive in popular Western media. Women, and to a lesser extent men also, are depicted with a strong focus on their physical attractiveness in magazines, television, music videos, and other media (American Psychological Association, 2007; Calogero et al., 2011).

Evidence has accumulated that being objectified or viewing objectification of women in the media may lead individuals to “self-objectify” (for a review, see Moradi & Huang, 2008). Self-objectification entails that individuals start to view themselves “as a body” and focus on their physical appearance rather than on what they can do or how they feel (Fredrickson & Roberts, 1997). Viewing the self in such a way can have serious negative consequences for a person’s well-being, as research has linked self-objectification with increased body shame, anxiety, and various mental and physical health problems, at least among women (as reviewed in Moradi & Huang, 2008; Tiggemann, 2011).

The link between objectifying social interactions and media content on the one hand and self-objectification on the other has been supported by a large body of research (Moradi & Huang, 2008). However, existing research has been limited almost exclusively to face-to-face interactions and traditional media, notably magazines and television (Aubrey, 2006a; Morry & Staska, 2001). This is surprising because, over the past years, the Internet has become a popular venue for social interaction and a medium in its own right (DiMaggio, Hargittai, Neuman, & Robinson, 2001). Internet users’ possibilities to interact online and to generate content have multiplied (Castells, 2007). Moreover, scholars have observed a “rise of a new form of socialized communication: mass self-communication” (Castells, 2007, p. 248), which is characterized by users generating and distributing media content themselves. This digital turn in how people interact and how media content is generated also forces us to extend our notion on the antecedents of self-objectification.

Of crucial importance in this context is the popular activity of creating and sharing self-related content online, such as keeping a personal profile on a social network site (SNS). To our knowledge, the only published study investigating the
potential role of mass self-communication in self-objectification has shown that adolescent girls who spend more time using SNS report higher levels of self-objectification (Vandenbosch & Eggermont, 2012). However, it is unclear whether SNS use causes self-objectification, and if so, which features of SNS use may evoke this effect. One aspect of SNS use that may at least partly account for the correlation found between SNS use and self-objectification is that people typically portray themselves to a relatively large number of people when they portray themselves online (Krämer & Winter, 2008). Research on offline self-portrayal suggests that when individuals portray themselves to others, they can become preoccupied with how other people will judge them and their looks (Leary & Kowalski, 1990). In this way, portraying the self to others online may lead to self-objectification. It is the first aim of this study to test this.

A focus on whether self-generated Internet content in general and online self-portrayal in particular leads to self-objectification also raises important questions about the conceptualization of traditional media in the etiology of self-objectification. At least implicitly, existing objectification research is based on the assumption that objectifying content, such as scantily dressed models in advertisements or on magazine covers, affects self-objectification and related constructs in a cumulative, but largely independent way (e.g., Aubrey, 2006a, 2006b, 2010; Aubrey, Henson, Hopper, & Smith, 2009; Grabe, Ward, & Hyde, 2008; Harper & Tiggemann, 2008; Morry & Staska, 2001). However, when presenting the self online, traditional objectifying content may very well present a condition that boosts the potential effect of online self-portrayal on self-objectification, for example by making objectifying ideas more cognitively accessible. In that case, exposure to traditional objectifying content interacts with online self-portrayal in its effect on self-objectification. Consequently, traditional objectifying content would have to be conceptualized as a moderator in the etiology of self-objectification. It is, therefore, the second goal of this study to test initially whether traditional objectifying content moderates the effect of online self-portrayal on self-objectification.

The current study initially tests the effect of online self-portrayal and the possible moderating role of objectifying media content on self-objectification among women. Although men are also subjected to objectifying experiences, women experience objectification more frequently than men, both in the media (American Psychological Association, 2007) and in interpersonal situations (Swim et al., 2001). These gender differences also surface on SNS, where girls are evaluated more strongly on the basis of their physical appearance than boys (Manago, Graham,
Greenfield, & Salimkhan, 2008). Possibly as a result of being objectified more frequently on SNS, girls have been found to generally pay more attention than boys to a favorable outer appearance on SNS (Pempek, Yermolayeva, & Calvert, 2009; Siibak, 2009). An effect of online self-portrayal on self-objectification is thus likely to occur among women. As a first approach to the issue, we therefore decided to explore this relation only among women.

**Objectification Online**

In its focus on media coverage as an antecedent of self-objectification and related constructs, objectification research has typically operated in a traditional media effects paradigm (for a review, see Grabe et al., 2008). Consequently, objectification research has largely dealt with the question of whether the reception of objectifying content that was created by others causes self-objectification in women (e.g., Aubrey, 2006a; 2006b; Aubrey et al., 2009; Harper & Tiggemann, 2008; Morry & Staska, 2001). The Internet has increasingly been questioning this reception-oriented perspective as Internet users not only receive information, but also distribute or even create information themselves (Castells, 2007; Dominick, 1999). As a consequence, it is striking that the reception-oriented perspective in objectification research has not yet been supplemented by a creation-oriented perspective. More specifically, it is surprising that it has rarely been asked whether the creation of content by women themselves causes self-objectification in these same women.

In the context of the online creation of content and its implications for the self-objectification process, online self-portrayal may play a particularly important role. Firstly, how one portrays the self to others influences how people view themselves (Schlenker, Dlugolecki, & Doherty, 1994). Secondly, self-portrayal is one of the most popular online activities, especially among adolescents and young adults (Lenhart, Purcell, Smith, & Zickuhr, 2010). The Internet offers many opportunities for self-portrayal. For instance, users can upload and share personal photos on photo archive sites, such as Flickr, upload videos to video archive sites, such as YouTube (e.g., youtube.com), and write texts about their lives on blogs. However, the most popular form of online self-portrayal currently occurs on social network sites (SNSs) (Lenhart et al., 2010). On SNS, users portray themselves through online profiles. These profiles usually include textual information about the user, as well as self–related visual content, for example photos and videos (boyd, 2008). In addition, users view and comment on each other’s self-portrayals on SNS (boyd,
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2008). In this way, SNS enable users to create self-related content, convey it to an online audience, and receive feedback.

Portraying the self to others is not a new phenomenon in itself and has, in its face-to-face, offline version, been researched extensively (for overviews see Leary & Kowalski, 1990; Schlenker & Pontari, 2000). However, online self-portrayal differs from offline, face-to-face self-portrayal in at least three ways. Firstly, in stark contrast to offline, face-to-face self-portrayals, online self-portrayals are persistent and visible to others relatively long after they have been created or modified (boyd, 2008). Secondly, online self-portrayals are characterized by reduced audio-visual cues compared to face-to-face interactions (Valkenburg & Peter, 2011; Walther, 1996), which gives the creator of an online self-portrayal more control over the self-portrayal. Thirdly, and most importantly in the context of the present study, most online self-portrayals are characterized by their easy accessibility to others (Valkenburg & Peter, 2011). On SNS for example, some profiles are publicly accessible to everyone, while other profiles are visible only to identified contacts (boyd, 2008). However, users of SNS have on average between 151 and 200 identified contacts who can access their self-portrayals (Jacobsen & Forste, 2011). In addition, online self-portrayals can be easily distributed to others who were not given access (boyd, 2008). As a result, even online self-portrayals with limited access can be seen by unknown others and, in contrast to offline self-portrayals, the creator of an online self-portrayal will never know exactly who will see the self-portrayal, thus presenting the self to an unspecific audience (boyd, 2008).

The accessibility of online self-portrayals to others, and notably the unspecific character of the audience of online self-portrayals, has consequences for how women portray themselves online and, eventually, for the extent to which they self-objectify. Of pivotal importance in this respect are people’s assumptions regarding the values and preferences of their audience (Leary & Kowalski, 1990). According to objectification theory, girls learn in their socialization that their physical appearance is a key dimension in which they are evaluated by others (Fredrickson & Roberts, 1997). The dominant role of physical appearance for girls’ and women’s evaluation also surfaces in online settings. Studies have shown that when girls and women portray themselves online, such as on SNS, they are strongly evaluated based on their physical appearance. For example, comments on SNS in response to online self-portrayals of girls frequently include remarks about the physical attractiveness of the girl portrayed (Ringrose, 2011). Furthermore, Internet users are more likely to accept a woman into their online social network if she is...
physically attractive (Wang, Moon, Kwon, Evans, & Stefanone, 2010). As a result, when girls and women portray themselves online, such as on SNS, they expect that their body and looks will be assessed and commented upon, and that they will be judged at least partly based on their physical appearance (Siibak, 2009).

Women’s anticipation of others evaluating them based on their physical appearance plays an important role in self-objectification. In line with objectification theory, research has shown that when women expect to be evaluated based on their physical appearance, they focus on their appearance (Calogero, 2004) and try to improve their bodies and looks (Fredrickson & Roberts, 1997). These two manifestations of self-objectification – an increased focus on one’s physical appearance and the attempt to improve how one’s body looks to others – may also occur when women portray themselves online. As described before, women and girls expect to be evaluated based on their appearance when they portray themselves to an online audience (Ringrose, 2011; Siibak, 2009). Women and girls may thus also increasingly focus on their appearance and try to enhance the presentation of their bodies and looks online. According to objectification theory, it is consequently likely that portraying the self to an online audience increases self-objectification among women. Our first hypothesis reads:

H1: If women portray themselves to an online audience, they will self-objectify to a greater extent relative to women who do not portray themselves to an online audience.

The Moderating Role of Objectifying Media

Living in media-saturated environments, women in rich Western countries are often confronted with objectifying content, which occurs in all types of media, including print advertisements, music videos and prime time television (American Psychological Association, 2007; Calogero et al., 2011). Traditionally, objectification research has conceptualized objectifying content as a direct influence on women’s self-objectification (e.g., Aubrey, 2006a; 2006b; 2010; Aubrey et al., 2009; Grabe et al., 2008; Harper & Tiggemann, 2008; Morry & Staska, 2001). In the context of the present study, with its focus on the impact of women’s self-portrayal to an online audience on self-objectification, objectifying media content may also be conceptualized as a moderator of this effect. One possible rationale for this conceptualization comes from media priming theory (Roskos-Ewoldsen, Roskos-Ewoldsen, & Carpentier, 2009). Media priming theory states that a media stimulus renders particular cognitions temporarily more accessible in individuals’ minds.
If these individuals subsequently deal with a situation to which the temporarily accessible cognitions are applicable, they are more likely to interpret this situation in the light of these cognitions. The priming media stimulus thus presents a condition for the particular interpretation of the subsequently encountered information.

In objectification research, objectifying media images are assumed to convey the message that physical attractiveness is important for women and that women are judged based on their physical appearance (Aubrey et al., 2009). Thus, priming with objectifying stimuli likely activates cognitions about the importance for women to look physically attractive and about evaluations based on their physical attractiveness. When women subsequently portray themselves to others online, the activation of these cognitions may increase women’s expectation that their audience will judge them based on their appearance. This increased expectation of being evaluated based on appearance in turn will increase self-objectification. Therefore, we hypothesize:

H2: The hypothesized effect that portraying the self to others online increases self-objectification (see H1) is stronger if women have been primed with objectifying stimuli compared to when they have not.

Method

We conducted a web-based experiment with a two (priming stimuli: objectifying vs. neutral) by two (audience: online audience vs. no audience) between-subjects design. We opted for a web-based experiment so that participants could complete the experiment from the privacy of their own home. A web-based experiment increases participants’ anonymity and diminishes biases resulting from a lab environment, such as interaction with an experimenter, which may affect self-portrayals. Furthermore, a web-based approach meant that we were able to reach participants from different parts of the Netherlands, resulting in greater generalizability of the findings. These benefits were believed to outweigh the disadvantage of a lack of experimental control for the current experiment (Reips, 2000). Another known disadvantage of web-experiments, namely the risk of multiple submissions by the same participant, was not expected to be a problem, as we did not allow multiple entries from the same IP-address.
Participants and Procedure

Two-hundred-and-twenty-one women aged 18-25 participated in the web-based experiment. As a result, there was sufficient power (.80) to detect a medium effect size at a significance level of .05 (Cohen, 1992), which previous research has shown to be a reasonable effect size to expect (Aubrey et al., 2009). The mean age of the participants was 20.8 years (SD = 2.2). BMI ranged from 17.4 (underweight) to 38.0 (obese) (M = 22.0, SD = 2.7). Most of the participants were students of higher education (89.6%) and the remainder was high-school student (0.9%) or employed (9.5%). The sample predominantly consisted of women born in the Netherlands (95.5%) and had parents who were also born in the Netherlands (mother 91.0%, father 89.1%).

Permission for the procedure of this study was granted by the departmental ethical committee. Participants could participate by following a link to the experiment, which was programmed with the survey tool Qualtrics. Participants were recruited in two ways. First, we placed an ad on the student webpage. Students could participate in exchange for course credits. Second, we recruited participants via snowball sampling using e-mail and Facebook. These participants participated in exchange for a chance to win one of three gift-vouchers (2 x 25 Euro; 1 x 50 Euro) in a lottery.

To prevent response bias, we constructed a cover story similar to a cover story that has successfully been used in previous research (Halliwell & Dittmar, 2004). Participants were told that the study aim was to investigate women's consumer choices. Upon consent, participants were randomly assigned to one of the two priming stimuli conditions, and viewed and rated either two neutral advertisements or two objectifying advertisements. Next, participants were randomly assigned to one of the two audience conditions. Subsequently, participants created an online profile, after which they filled out their demographic information. Finally, participants were probed for suspicion of the aims of the study. None of the participants guessed the study aims. Participants were then thanked for their participation and asked to fill in their contact information on a separate screen. Participants were notified that their contact information was not linked to their answers and was only meant for debriefing them, giving them course credits and informing them about the raffle.
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**Priming Stimuli**

The stimulus material for the priming stimuli conditions consisted of two neutral advertisements and two objectifying advertisements. For this purpose, four perfume advertisements for the fictional perfume brands “Blue” and “Pink” were created. Objectifying media content is generally operationalized by featuring a female with a high degree of skin exposure (e.g., Aubrey, 2010; Reichert, Lambiase, Morgan, Carstarphen, & Zavoina, 1999). Previous research has shown that pictures of woman in lingerie are a valid method to operationalize objectification of women (Aubrey et al., 2009). Therefore, the objectifying advertisements contained a woman in lingerie. The neutral advertisements did not display any persons, but instead contained a larger version of the perfume bottle to prevent a large “empty space,” which would look artificial. In addition, the advertisements contained a background with a landscape and the name of the fictional perfume. Perfume advertisements were chosen because they are targeted at women and frequently display women in an objectifying way. The advertisements were fictional, firstly to prevent effects of brand or advertisement familiarity and attitudes, and secondly to ensure that the neutral and objectifying advertisements could be made identical in every way except the objectifying features.

Participants were asked to rate on a five point scale (1 = totally disagree and 5 = totally agree) how much they agreed with two statements regarding each advertisement. The first statement was “The advertisement was interesting” and the second was “The advertisement was attractive.” These two statements were used to boost the cover story and to check if the advertisements were comparable. The average score for each advertisement was between 2.1 (SD = 0.8) and 2.6 (SD = 0.9) for interestingness and between 2.5 (SD = 0.9) and 3.0 (SD = 1.0) for attractiveness. This suggests that the advertisements were found to be attractive nor unattractive and more uninteresting than interesting. There were no significant differences between the neutral and objectifying stimuli in terms of how attractive, \( t(219) = 0.05, p = .957 \), or how interesting they were found to be, \( t(219) = -0.19, p = .846 \).

**Audience Conditions**

Participants were randomly assigned to an online audience condition or a no audience condition. In both conditions, participants were instructed to make a profile, which implied writing a self-description of five sentences and choosing hair and skin color, body-size and clothing for a personal avatar. By having the
participants describe themselves and choose an avatar, we tried to operationalize the combination of text and imagery on SNS member profiles. The crucial difference between the two conditions was the accessibility of the self-portrayals because we expected this characteristic of online self-portrayals to affect self-objectification. To manipulate accessibility of the self-portrayals, participants in the no audience condition were told that nobody would see their profile, while participants in the online audience condition were led to believe that their self-portrayals would be visible to others. More specifically, participants in the online audience condition were told that their profile would be shown to other participants and that they may interact with these persons in a follow-up webcam study. In this way, it remained unspecific to the participants in the online audience condition who would see their profile, which simulated online self-portrayal as it occurs on SNS. We chose a no audience condition, rather than a face-to-face condition, to keep other factors constant that may affect self-portrayal and that distinguish online from offline, face-to-face self-portrayal, such as reduced visual and auditory cues and the persistence of the self-portrayal.

Measures

Self-objectification. Self-objectification was operationalized as the degree to which women's self-descriptions emphasized their physical attractiveness. Two independent coders rated how many of the five sentences of the self-descriptions "directly or indirectly lead the audience to infer that the participant is physically attractive," which included statements such as "I am beautiful" and sentences regarding "working out" and "interest in cosmetics and fashion". All participants wrote exactly five sentences about the self. If a self-descriptive sentence contained multiple elements, only the first element was coded to ensure relative measurement of self-objectification, that is, the proportion of the total self-descriptive statements which is self-objectifying. This measure is similar to the Twenty Statements Test (TST) (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998), which is shown to be reliable and responsive to experimental inductions of self-objectification (Aubrey et al., 2009; Calogero, 2011). Interrater agreement was high ($\kappa = .91$) (Landis & Koch, 1977).

Demographic variables. Information was collected regarding age, height and weight (to calculate BMI), relationship status (in a relationship or not), occupation (in school, student, working, or none of the above), country of birth, as well as country of birth of mother and father.
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Results

Randomization Check

Before testing the hypotheses, we examined whether there were any differences between the four conditions in participants’ background characteristics. Chi-square analyses showed that the four conditions did not differ significantly with regard to occupation, $\chi^2(6, N = 221) = 4.46, p = .615$, relationship status, $\chi^2(3, N = 220) = 5.72, p = .126$, place of birth, $\chi^2(3, N = 221) = 2.65, p = .449$, birthplace of mother, $\chi^2(3, N = 221) = 2.05, p = .561$, or birthplace of father, $\chi^2(3, N = 221) = 1.07, p = .786$. Univariate analyses of variance (ANOVA) showed no significant differences between the four conditions with regard to BMI, $F(3,216) = .09, p = .965$, or age, $F(3,217) = .35, p = .788$. Overall, the randomization was successful.

Hypotheses Testing

To test the hypotheses, two (audience: online audience vs. no audience) by two (priming stimuli: objectifying vs. neutral) between-subjects factorial analyses of variance were conducted on the outcome variable self-objectification. The first hypothesis predicted that if women portrayed themselves to others online, they would self-objectify to a greater extent relative to women who did not portray themselves to an online audience. The second hypothesis predicted that the effect of portraying the self to others online on self-objectification would be stronger if women had been primed with objectifying stimuli compared to when they had not. We therefore focused first on the interaction effect between priming stimuli condition and audience condition on self-objectification. This interaction was significant, $F(1, 217) = 4.34, p = .037$. Therefore, we conducted follow-up simple slope analyses to test the differences between the audience conditions separately for the priming stimuli conditions. As visualized in Figure 1, results showed that among participants in the objectifying priming stimuli condition, women who portrayed themselves to an online audience wrote more statements emphasizing their physical attractiveness in their self-description ($M = 0.6, SD = 0.7$) than women who portrayed themselves privately ($M = 0.2, SD = 0.5$). This difference was significant $F(1, 218) = 9.55, p = .002$. In contrast, among participants in the neutral priming condition the self-descriptions of women who portrayed themselves to an online audience did not contain significantly more or less statements which emphasized physical appearance ($M = 0.4, SD = 0.5$) than the self-descriptions of women who portrayed themselves privately ($M = 0.4, SD = 0.6$), $F(1, 218) = 0.02, p = .875$. Portraying the self online
thus only lead to self-objectification among participants who had been primed with objectifying stimuli and not among participants who had been primed with neutral stimuli. Hypothesis 2 was thus supported.

![Figure 1](image.png)

**Figure 1.** Mean number of statements in self-description emphasizing the participant's physical attractiveness by audience condition and priming stimuli condition. Confidence intervals (95%) are represented in the figure by the error bars attached to each column.

### Discussion

Existing research on media as an antecedent of self-objectification has largely focused on how traditional objectifying material affects women's self-objectification (Aubrey, 2006a; Aubrey, 2006b; Harper & Tiggemann, 2008; Aubrey et al., 2009; Aubrey, 2010; Grabe et al., 2008; Morry & Staska, 2001). This study is one of the first to investigate whether women's online activities may cause self-objectification. Specifically, we were interested in whether portraying the self to others through an online profile would increase self-objectification and whether this effect would be boosted by objectifying content in an advertisement. We found that portraying the self to others online increased self-objectification in young women, notably after they had been primed with objectifying media content from a perfume ad. This study
makes several theoretical contributions to objectification research, while also having practical implications for self-objectification as a societal phenomenon.

Contributions to Objectification Research

The present study contributes to objectification research in at least two ways. First, the study extends our knowledge about the etiology of self-objectification. Previous research has shown that women’s self-objectification increases when they encounter objectifying information in the media (Aubrey, 2006a; 2006b; 2010; Aubrey et al., 2009; Grabe et al., 2008; Harper & Tiggemann, 2008; Morry & Staska, 2001). The dominant reception-oriented perspective in this research has produced consistent results and has its theoretical merits, but is somewhat oblivious of recent developments in women’s media environment, notably the proliferation of mass self-communication (Castells, 2007). Therefore, our study has supplemented the reception-oriented perspective of earlier research with a creation-oriented perspective. This change of perspective has enabled us to demonstrate that not only the reception of mediated content, but also the creation of it, can lead women to self-objectify, at least when this content is personal and self-related and can be viewed by others. To paraphrase a well-known line in communication research, for a better understanding of self-objectification we need to know both what media users do with the media and what media do with them.

A second, related contribution of our study to objectification theory concerns the conceptualization of conditional media effects on self-objectification. At least implicitly, objectification research has assumed that objectifying content from different media cumulates in its impact on self-objectification, but affects self-objectification independently from each other. However, as women in rich Western societies live in a media-saturated environment with abundant objectifying content (American Psychological Association, 2007; Calogero et al., 2011) it makes sense to also consider the possibility that different media activities may interact with each other. This interactive perspective seems particularly interesting when two related activities, such as the creation of an online self-portrayal and the viewing of an objectifying advertisement, occur in close temporal order. Our results show that objectifying content may present a condition in which the effect of online self-portrayal on self-objectification may be boosted. Given the increasing possibilities of online self-portrayal and the abundance of objectifying media content, it may be important to further look into the moderating role of objectifying content in the emergence of self-objectification.
Implications for Self-Objectification as a Societal Phenomenon

In addition to its contributions at a theoretical level, the current study also has implications for self-objectification in modern society in which mass self-communication is common (Castells, 2007). Online self-portrayal is a particularly popular form of mass self-communication, especially among young people (Lenhart et al., 2010). A majority of adolescents and young adults keep a profile on a social network site (Lenhart et al., 2010) and on average spend around 50 min a day on these websites (Jacobsen & Forste, 2011). Research suggests that online communication increasingly complements offline communication, which means that women today will create and share more self-related content than women of previous generations. Our findings tentatively point to the possibility that the opportunity and rise of online self-portrayal may result in an increase of women’s self-objectification as a societal phenomenon, notably when it occurs in combination with exposure to traditional objectifying media content. Needless to say, this hypothesis awaits rigorous testing with longitudinal survey studies.

Girls and women today are also exposed to more objectifying content than women of previous generations (American Psychological Association, 2007; Reichert et al., 1999). As the level of exposure to objectifying media has been shown to positively predict self-objectification (Aubrey, 2006a; 2006b), the increased pervasiveness of objectifying media content may lead to an increase of self-objectification among women. The current study has shown that objectifying media content enhances self-objectification when it precedes online self-portrayal and possibly also other situations in which women may expect to be evaluated based on their appearance. As a result, the fact that young women frequently encounter objectifying content while they are using social network sites (Zhong, Hardin, & Sun, 2011) may have implications for the incidence of self-objectification. Specifically the placement of objectifying advertisements on SNS, which for instance occurs on popular SNS Facebook, may increase the occurrence of self-objectification and deserves our attention. However, also this hypothesis should be subjected to rigorous testing before drawing any conclusions.

Limitations and Future Directions

The current research has identified one particular Internet activity which plays a role in the self-objectification process, namely online self-portrayal. However, there may be other Internet activities that may also impact self-objectification. For example, the time spent on SNS is not only used to portray the self, but also to
view the self-portrayals of contacts (boyd, 2008). As a result, women may witness other women being judged based on their appearance, for instance through public comments on these women’s online profiles. These comments may contribute to self-objectification in various ways, for example through rendering cognitions about appearance as an evaluation standard more accessible, which may affect subsequent self-portrayal, or even by making witnesses of such comments regard themselves through the eyes of the commentators.

In the current study, we investigated and manipulated one feature of online self-portrayals, namely their accessibility to others. However, there are several other characteristics that accompany the accessibility of online self-portrayals, notably the size and composition of the audience. Depending on women’s perception of how big their audience is and who may see their self-portrayal, women may vary in their self-objectification. Moreover, two features of online self-portrayals, namely their reduced cues and their persistence compared to offline self-portrayals, are important concepts that may affect the influence of online self-portrayal on self-objectification. For example, the possibility to include (audio) visual cues in a self-portrayal may influence the extent to which women self-objectify, with enhanced possibilities to include such cues probably increasing self-objectification. Similarly, relatively persistent self-portrayals, as those on SNS, may increase self-objectification more strongly than those that are less persistent such as on Instant Messaging. Research into the effects of different features of online self-portrayal on self-objectification may help predict and explain the roles of the many different and continuously changing forms of communication (e.g., Facebook, Instant Messaging, Twitter, Skype and Instagram) in the self-objectification process.

The current study assumed that women’s expectations of being evaluated based on their appearance may explain why online self-portrayal leads to self-objectification after being primed with objectifying content. This assumption is in line with previous research regarding the online self-portrayal of girls and women (Ringrose, 2011; Siibak, 2009), and fits within the framework of objectification theory (Fredrickson & Roberts, 1997). Still, our study does not rigorously demonstrate that the expectation to be evaluated based on one’s appearance underlies the effect we found. Therefore, a formal test of the theorized mediating process is necessary for a more complete understanding of the effect of online self-portrayal on self-objectification. Another limitation of this study is that participants on average only wrote 0.4 statements which emphasized their physical attractiveness, which constituted eight percent of the total self-description. However, the rate
of appearance related statements in women’s self-descriptions is in line with the average (7.5%) found by Aubrey et al. (2009) when studying media priming effects on self-objectification using the well-known Twenty Statements Test (Fredrickson et al., 1998).

The current study was conducted among a sample which consisted predominantly of Dutch students and only included women. Therefore we lacked statistical power to test if ethnicity moderated our results and cannot conclude how online self-portrayal may affect men. Most studies show that women of all ethnicities report higher trait self-objectification than men (Moradi, 2010), which is in line with the original tenet of self-objectification that women are objectified more frequently than men (Fredrickson & Roberts, 1997). However, there is evidence that men also experience self-objectification in response to some objectifying situations (Moradi, 2010). In addition, ethnicity may influence the degree to which certain situations lead to self-objectification (Moradi, 2010). As a result, we cannot generalize our findings to other groups in terms of gender, ethnicity and possibly other personal characteristics. Therefore, addressing gender and cultural diversity is an important venue for further research into the effects of SNS on self-objectification. Finally, the current study only focused on a short-term manifestation of self-objectification. To understand the role of online self-portrayal and broader Internet use in self-objectification among women more thoroughly, long-term effect studies are necessary.
References


Chapter 2


Chapter 3

The Effect of Social Network Site Use on Appearance Investment and Desire for Cosmetic Surgery among Adolescent Boys and Girls

This chapter has been submitted for publication as: De Vries, D. A., Peter, J., Nikken, P., & De Graaf, H. (2013). The effect of social network site use on appearance investment and desire for cosmetic surgery among adolescent boys and girls.
Abstract

Although adolescents frequently use social network sites, little is known about whether the highly visual and self-presentation-centered character of such sites affects body-related outcomes such as investment in appearance and appearance-changing strategies. The aim of the current study was to investigate the relationships between social network site use, appearance investment, and desire for cosmetic surgery among adolescents, and to compare the experiences of boys and girls. We used data from a two-wave panel study among 604 Dutch adolescents (aged 11–18). Structural equation modeling showed that social network site use indirectly augmented adolescents’ desire to undergo cosmetic surgery through increasing appearance investment. The relationships found between social network site use, investment in appearance, and cosmetic surgery desire applied to boys and girls and were not moderated by gender. However, girls reported higher levels of appearance investment and cosmetic surgery desire than boys.
In their daily lives, adolescents experience appearance pressures from several sources. For example, peers regularly comment on adolescents’ physical appearance and provide tips on how to look best. Furthermore, teen magazines and TV shows frequently portray people who fit the stringent beauty ideals and advertise appearance-changing strategies. The degree to which individuals experience these appearance pressures has been shown to correlate with desire to engage in costly and risky appearance-changing strategies, such as cosmetic surgery (e.g., Woertman & van den Brink, 2009). In 2011, cosmetic surgery was performed on 76,755 patients aged 19 or younger in the US (American Society of Plastic Surgeons, 2012a). Furthermore, cosmetic surgery was considered by 30% of US adolescents (Pearl & Weston, 2003). The interest in these procedures is remarkable given the health risks and financial costs involved (Zuckerman & Abraham, 2008). Moreover, cosmetic surgery among adolescents is especially controversial because their body and body image are still developing (Sarwer, Infield, & Crerand, 2009; Steinberg & Morris, 2001; Zuckerman & Abraham, 2008).

Appearance pressures have also been found to predict appearance investment (Slevec & Tiggemann, 2010; White & Halliwell, 2010). Appearance investment refers to the degree to which physical attractiveness is important to a person and his/her behavior and thoughts center on appearance (Thompson, 2004). High investment in appearance, in turn, is believed to result in negative consequences, in particular engaging in appearance-changing behaviors which may pose health risks, such as exercise dependence (White & Halliwell, 2010), unhealthy forms of dietary restraint (Cash, Melnyk, & Hrabosky, 2004), and cosmetic surgery (Slevec & Tiggemann, 2010). As a result, research has suggested that appearance pressures may lead to appearance-changing strategies through increased investment in appearance (White & Halliwell, 2010).

Although research has been conducted to explain the relations between appearance pressures, appearance investment, and appearance-changing strategies (e.g., White & Halliwell, 2010), there are several gaps in our knowledge. First, with the exception of a recent study among Flemish adolescent girls (Vandenbosch & Eggermont, 2012), research has nearly exclusively focused on the effects of appearance pressures from traditional media, notably TV and magazines, and face-to-face communication (e.g., Slevec & Tiggemann; White & Halliwell, 2010). However, adolescents nowadays frequently use the internet to communicate and seek entertainment, in particular on social network sites, such as Facebook (Lenhart, Purcell, Smith, & Zickuhr, 2010). Social network sites may form a new appearance
pressure, because evaluating one's own and others' physical attractiveness is an important part of social network site use (Ringrose, 2011; Siibak, 2009, 2010). Therefore, social network site use may influence adolescents’ appearance investment and attitudes toward cosmetic surgery.

Second, most research regarding appearance pressures, appearance investment, and appearance-changing strategies has focused on girls and women because females seem to experience greater appearance pressures than males do. However, males also perceive appearance pressures and it is unclear if, among males, such pressures result in similar appearance-changing strategies through comparable processes (Moradi, 2010). Thus, research that assesses and compares such processes in males and females is necessary to fully understand the effects of appearance pressures and the role of gender. Third, to date most research linking appearance pressures, appearance investment, and appearance-changing strategies has been cross-sectional (e.g. Slevec & Tiggemann, 2010; Vandenbosch & Eggermont, 2012, White & Halliwell, 2010). As a result, the causal directions of the effects remain unclear.

In the current study, we aim to address these three gaps. Specifically, the goal of the current study was to investigate, in a longitudinal design, the relationship between social network site use, appearance investment, and desire to undergo cosmetic surgery among Dutch adolescents (age 11-18), and to compare the experiences of boys and girls. In this way, the current study aims to advance our understanding of the effects of media and communication on adolescents' body modification strategies.

Objectification Theory

One theoretical framework for the investigation of the impact of adolescents’ social network site use and the pertinent appearance pressures on appearance-changing strategies is objectification theory (Fredrickson & Roberts, 1997). We chose objectification theory as a basis for the current study for three reasons. First, objectification theory fits our research aims as it predicts links between appearance pressures, appearance investment, and appearance-changing strategies (Fredrickson & Roberts, 1997; Moradi, 2010). Second, the main tenets of objectification theory have received consistent empirical support (Aubrey, 2006; Moradi & Huang, 2008; Parent & Moradi, 2011). Third, objectification theory has been shown to be applicable to adolescents and adults, to males and females, and to persons from different cultural backgrounds (Moradi, 2010; Slater & Tiggemann,
We therefore expected objectification theory to be applicable to adolescent boys and girls in the Netherlands.

Objectification theory posits that objectification, that is, when a person is valued primarily in terms of his/her physical attractiveness, leads to viewing the self in an objectifying way (Fredrickson & Roberts, 1997). Objectification can be direct or indirect. Direct objectification entails that a person is valued predominantly based on her/his appearance. Indirect objectification, in turn, entails viewing another person who is valued predominantly based on appearance. Within objectification theory, appearance pressures can be seen as a form of objectification (Moradi, 2010). For example, adolescents’ scrutinizing each other’s appearance by teasing those who do not fit the appearance norms constitutes a form of direct objectification. Indirect objectification occurs, for example, when adolescents view idealized airbrushed pictures of slim models in magazines.

**Appearance Pressures on Social Network Sites**

Although not yet empirically documented, it is plausible that social network sites exert appearance pressures on their users. Generally, the visual, picture-oriented character of social network sites, along with the possibility to post comments, invites users to view and comment on the personal pictures that other users present on their profiles (Pempek, Yermolayeva, & Calvert, 2009). The profile owners’ physical appearance seems to play an important role when other social network site users look at, and comment on, these pictures (Ringrose, 2011; Siibak, 2009; Wang, Moon, Kwon, Evans, & Stefanone, 2010). For example, in a survey among Estonian adolescents, participants reported good looks as the most relevant factor determining popularity on social network sites (Siibak, 2009).

The strong focus on physical appearance on social network sites may result in appearance pressures that can be experienced in two ways. First, adolescents who present themselves in a profile on a social network site are directly subjected to the objectifying gaze and comments of other users. For example, British teenage girls who were interviewed about their experiences on a social network site reported that they frequently received remarks about their physical attractiveness through their social network site profile (Ringrose, 2011). Second, adolescents may witness that others are subjected to an objectifying gaze on social network sites. Such indirect appearance pressures may occur, for example, when adolescents read others’ comments about a friend’s appearance.
The appearance pressure that social network sites may exert on adolescents is also reflected in adolescents’ behavior on social network sites. For example, in a survey among Estonian adolescents (Siibak, 2009), “good looks” was the most often named criterion for choosing a certain social network site profile picture. Furthermore, most young adults, especially females, “untag” pictures of themselves if they are unhappy with their appearance in a photo that was uploaded by a friend (Pempek et al., 2009). Some adolescents also edit their photos to create a physically attractive image of themselves on social network sites (Ringrose, 2011). In sum, existing research suggests that social network sites may constitute an appearance pressure for adolescents.

### Appearance Pressures and Cosmetic Surgery

Objectification theory predicts that appearance pressures, exerted for example by peers and the media, lead people to engage in appearance-changing strategies, such as dieting and excessive exercise (Fredrickson & Roberts, 1997; Moradi, 2010). In several studies appearance pressures have also been associated with cosmetic surgery attitudes and the propensity to undergo cosmetic surgery (Australia: Slevec & Tiggemann, 2010; UK: Calogero, Pina, Park, & Rahemtulla, 2010; US: Henderson-King & Brooks, 2009). However, existing research on appearance pressures and cosmetic surgery attitudes and intentions has focused exclusively on adults. To our knowledge, no research has tested if appearance pressures also increase adolescents’ desire to undergo cosmetic surgery. This is surprising because appearance pressures have been found to predict other appearance-changing strategies among adolescents, such as dieting behaviors among adolescent boys and girls and exercise behaviors among adolescent boys (Australia: McCabe & Ricciardelli, 2003; Hungary: Papp, Urbán, Czeglédi, Babusa, & Túry, 2013; US: Shroff & Thompson, 2006). It therefore seems likely that appearance pressures also predict the desire to undergo cosmetic surgery among adolescents. Specifically, as social network sites are likely to exert appearance pressures, adolescents’ use of such sites can be expected to increase their desire to undergo cosmetic surgery.

### Appearance Pressures and Appearance Investment

Objectification theory also predicts that appearance pressures result in increased importance of appearance and increased behavior and thought centering on appearance. In other words, appearance pressures may lead to increased appearance investment. Research among adolescents and adults has
provided evidence for this prediction. For example, in a study among Australian women, appearance investment was found to be positively correlated with reading appearance-focused magazines (Slevec & Tiggemann, 2010). Similarly, among British adolescents, higher perceived pressures to lose weight and build muscle were associated with increased appearance investment (White & Halliwell, 2010). Furthermore, among female undergraduates in the US, appearance-related comments correlated positively with appearance investment (Herbozo & Thompson, 2006). In summary, theory and research among adolescents and adults indicate that appearance pressures may lead to appearance investment. Against this backdrop, we expected that more frequent social network site use, due to the pertinent appearance pressures associated with this use, would increase appearance investment among adolescents.

**Appearance Investment and Cosmetic Surgery**

Objectification theory further posits that if appearance is important to a person and his/her behavior and thought center around appearance, this person will be more likely to use appearance-changing strategies. Research among adults has confirmed that appearance investment is an important predictor of appearance-changing strategies. For example, appearance investment was positively associated with dietary restraint and exercise dependency among Canadian female undergraduates (Lamarche & Gammage, 2012). As cosmetic surgery is also an appearance-changing strategy, greater investment in appearance has also been found to be related to more positive attitudes about cosmetic surgery and a greater wish to undergo cosmetic surgery among both male and female adults (US: Frederick, Lever, & Peplau, 2007; Sarwer et al., 2005; Norway: von Soest, Kvalem, Skolleborg, & Roald, 2006).

Although research has consistently shown an association between appearance investment and cosmetic surgery desire among adults, no study to date has tested if appearance investment also predicts cosmetic surgery desire among adolescents. However, there is some tentative indication that the associations between appearance investment and appearance-changing activities established among adults may also hold among adolescents. Research in the UK, for example, has shown that adolescent boys and girls who reported greater investment in appearance also reported greater need for exercise (White & Halliwell, 2010). We therefore expected that appearance investment would predict cosmetic surgery desire among adolescents.
Effect of Social Network Sites on Cosmetic Surgery through Appearance Investment

If, as just outlined, appearance pressures predict appearance investment, and if, at the same time, appearance investment results in appearance-changing strategies, the influence of appearance pressures on appearance-changing strategies may be mediated by appearance investment. Research indeed suggests that appearance pressures impact appearance-changing strategies, including cosmetic surgery, through increased appearance investment. For example, among Australian adult women, appearance investment partially explained the link between magazine exposure and cosmetic surgery attitudes (Slevec & Tiggemann, 2010). Similarly, in a study among British adolescents, the effect of appearance pressures on a related appearance-changing strategy, namely compulsive need for exercise, also ran indirectly through investment in appearance (White & Halliwell, 2010). In line with these findings, we expected that the effect of social network site use on cosmetic surgery desire among adolescents would be mediated by increased investment in appearance. Specifically, we expected that adolescents’ more frequent social network site use would result in greater appearance investment, which would in turn result in greater desire for cosmetic surgery.

The Role of Gender: Direct Effects

Objectification theory was originally developed to describe the effects of the objectifying experiences of women (Fredrickson & Roberts, 1997). Women and girls were theorized to be judged more on the basis of their appearance than men and boys. In line with objectification theory, there is evidence from studies done in various countries that girls and women experience greater appearance pressures than boys and men. For example, Irish adolescent girls reported having more frequent conversations about appearance with their peers than boys (Lawler & Nixon, 2011). Similarly, Hungarian adolescent girls experienced greater appearance pressures from the media as well as from peers than boys (Papp et al., 2013). Finally, both US and Swiss girls felt greater media pressures to look physically attractive than boys (Ata, Ludden, & Lally, 2007; Knauss, Paxton, & Alsaker, 2008).

As described previously, objectification theory and previous research together predict that increased appearance pressures lead people to engage more in appearance-changing behaviors, including cosmetic surgery. As females are believed to experience more appearance pressures (Knauss et al., 2008; Lawler & Nixon, 2011; Papp et al., 2013), they may also be expected to be more inclined
to want to undergo cosmetic surgery. In line with this prediction, women have been shown to be more likely to consider cosmetic surgery than men both in the US (American Society of Plastic Surgeons, 2012b; Frederick et al., 2007) and in the Netherlands (Woertman & van den Brink, 2008). These gender differences in the desire to undergo cosmetic surgery among adults may be present already during adolescence, as can be concluded from related research on dieting (McCabe & Ricciardelli, 2001). We therefore expected that, compared to boys, adolescent girls would report greater desire for cosmetic surgery.

As appearance pressures are also related to greater investment in physical appearance (Herbozo & Thompson, 2006; Slevec & Tiggemann, 2010; White & Halliwell, 2010), the gender differences in appearance pressures may also translate into gender differences in appearance investment. In fact, compared to males, females consistently report higher levels of appearance investment in diverse samples, including Dutch adults (Woertman & van den Brink, 2008), US college students (Cash et al., 2004) and British adolescents (White & Halliwell, 2010). It, therefore, seems likely that appearance investment is higher among adolescent girls than among adolescent boys in the Netherlands too.

**The Moderating Role of Gender**

Initial evidence has emerged that the gender differences in appearance pressures experienced from traditional media and social interactions also occur on social network sites. Compared to males, females generally seem to be more strongly evaluated on the basis of their physical appearance on social network sites (US: Manago, Graham, Greenfield, & Salimkhan, 2008) and more attention is paid to females’ than males’ physical appearance on social network sites (US: Seidman & Miller, 2013). Possibly as a result of increased appearance pressures on social network sites, girls have also been found to invest more heavily into a favorable outer appearance on social network sites than boys (Siibak, 2009). In comparison to boys, the adolescent girls in Siibak’s (2009) Estonian sample were more likely to report good looks as the most important reason to choose the social network site profile picture. Furthermore, female students reported posting more pictures of themselves on their social network profile than their male peers (US: Pempek et al., 2009; Rui & Stefanone, 2013). In addition, compared with male students, female students were also more likely to “untag” photos of themselves that they did not like (US: Pempek et al., 2009; Rui & Stefanone, 2013). As girls thus seem to experience greater appearance pressures during their social network site use, we
expected that the aforementioned effect of frequency of social network sites use on appearance investment would be stronger among girls than boys.

Gender may also moderate the effects of appearance investment on cosmetic surgery. Generally, appearance modification strategies are gendered. While the ideal for men is to be muscular and low in body fat (Cafri et al., 2005), the ideal for women is to be curvaceously slim (Harrison, 2003). Consequently, adolescent girls experience more pressure to lose weight whereas adolescent boys experience more pressure to build muscle (UK: White & Halliwell, 2010; US: Ata et al., 2007). In contrast to the male ideal, the female ideal can usually not be obtained without surgical treatments, for example surgical enlargement of the breasts (Harrison, 2003). Therefore, a girl or woman who heavily invested in her appearance may have a greater desire to undergo cosmetic surgery than a man or boy who is invested in his appearance to the same extent. We therefore expected that the predicted effect of appearance investment on cosmetic surgery desire would be stronger among adolescent girls than among boys. In addition, because we expected stronger effects of social network sites on appearance investment as well as of appearance investment on cosmetic surgery desire among girls, we also expected that the indirect effect of social network site use on desire to undergo cosmetic surgery would be stronger among girls.

The Present Study

The present study focused on social network site use as a medium exerting a new appearance pressure for adolescents. More specifically, we explored the effects of social network site use on appearance investment and cosmetic surgery desire among adolescents in the Netherlands through a two-wave panel survey. The effects were explored for both boys and girls, with a special interest in how the main variables and their relations would be impacted by gender. Based on the theory and research described above, we formulated three sets of hypotheses. In the first set of hypotheses, we specified an effect of social network site use on desire to undergo cosmetic surgery through appearance investment:

H1a: As adolescents use social network sites more frequently, their desire to undergo cosmetic surgery will increase.

H1b-d: (b) As adolescents use social network sites more frequently, their appearance investment will increase, which in turn (c) will result in a greater desire to undergo cosmetic surgery. (d) The effect of adolescents’ use of social network sites on their desire to undergo
cosmetic surgery (see H1a) will thus at least partly be mediated by increased investment in appearance.

In our second set of hypotheses, we specified the main effects of gender on our focal variables:

- **H2a:** Girls will report higher levels of desire to undergo cosmetic surgery than boys.
- **H2b:** Girls will report higher levels of appearance investment than boys.

In our third set of hypotheses, we specified the moderating effects of gender on our focal influences:

- **H3a:** The effect of frequency of social network sites use on appearance investment is stronger among girls than boys.
- **H3b:** The effect of appearance investment on desire to undergo cosmetic surgery is stronger among girls than among boys.
- **H3c:** The indirect effect of social network site use on desire to undergo cosmetic surgery through appearance investment is stronger among girls than among boys.

**Method**

**Sample and Procedure**

The current study is a secondary analysis of a two-wave panel survey conducted by the Netherlands Youth Institute (Nederlands Jeugdinstituut) and Rutgers WPF (Dutch Expert Centre on Sexuality) in 2008 and 2009. The survey investigated adolescents’ (sexual) media use, sexual attitudes and behaviors, and body image. A screening questionnaire was sent to all 3,160 members of the Intomart GfK panel who had at least one child between the ages 11 and 18. Intomart GfK is an online access panel, which consists of 25,000 members who have indicated to be willing to participate in surveys. Intomart recruits their sample across the whole Netherlands, in this way increasing generalizability in comparison with convenience samples. Internet access in the Netherlands was 98% among people under 25 (Centraal Bureau voor de Statistiek, 2012). Therefore, a coverage bias due to the online nature of the survey is unlikely.

Of the contacted parents, 50.6% responded, filled out the screening completely and gave Intomart GfK permission to contact their child. Subsequently, 1,600 adolescents received an invitation to participate in the survey in July through
September 2008. Of these 1,600 adolescents, 1,294 adolescents (80.9%) completed this first questionnaire. In December 2009, the adolescents who had completed the first questionnaire and had indicated that they were willing to participate again in the second wave were contacted with a request to complete a questionnaire similar to the first. In total, 604 adolescents completed all measures that were of interest for the current study at both time points, which equaled a retention rate of 54.2% across the two waves. Respondents who did not complete the second survey differed from respondents who completed the survey at both time points only in one respect: they were four months older on average, \( t(1292) = -3.32, p = .001 \). There were no differences between these two groups in terms of gender, \( t(1292) = .082, p > .05 \), or level of education, \( t(1292) = -1.09, p > .05 \). The age of the adolescents who completed the survey at both time points ranged between 11 and 18 (\( M = 14.7, SD = 1.7 \) at time 1). This sample did not deviate from official Dutch population statistics in terms of gender (50.7% girls). However, adolescents who attended higher levels of education and adolescents whose parents were born in the Netherlands were over-represented in the sample.

**Measures**

**Social network site use.** Adolescents' frequency of social network site use was measured with the question: “How often did you visit Hyves.nl in the past six months?” Hyves.nl was the most popular social network site among Dutch adolescents at the time the study was conducted (Mijn Kind Online, 2009). In its goal, set-up, and technological possibilities, Hyves.nl is comparable to Facebook. The response options ranged from 0 (never) to 4 (always) (\( M = 2.4, SD = 1.5 \) at time 1; \( M = 2.6, SD = 1.4 \) at time 2).

**Appearance investment.** Appearance investment was assessed by a Dutch translation of the Appearance Orientation subscale of the Multidimensional Body-Self Relations Questionnaire (Cash, 1994; Woertman & van den Brink, 2008), a measure which has shown excellent reliability and validity (Brown, Cash, & Mikulka, 1990). The 12-item scale measures cognitive-behavioral investment in physical appearance by assessing how important the own physical appearance is to the respondent, and to what degree behavior and thought centers around appearance (Thompson, 2004). The scale includes items, such as: “It is important that I always look good,” and, “I check my appearance in the mirror whenever I can.” The response options ranged from 0 (definitely disagree) to 4 (definitely agree). Therefore scores could range between 0 and 48, with higher scores indicating
that the participant is more invested in how he or she looks and undertakes more behaviors to optimize this appearance. Cronbach’s alpha was .91 at both time points ($M = 24.6, SD = 9.3$ at time 1; $M = 25.1, SD = 8.9$ at time 2).

**Desire to undergo cosmetic surgery.** To measure participants’ desire to undergo cosmetic surgery, they were asked: “If you could let a cosmetic surgeon change something about your appearance free of charge, would you do it?” A comparable question has successfully been used in earlier research in the Netherlands (Woertman & van den Brink, 2008, 2009). The response categories ranged from 0 (*definitely not*) to 4 (*definitely*) ($M = .98, SD = 1.1$ at time 1; $M = .87, SD = 1.0$ at time 2).

**Data Analysis**

In an initial exploration of our hypotheses, we first analyzed the zero-order correlations between social network site use, appearance investment and cosmetic surgery at both time points. We then tested our hypotheses more rigorously using structural equation modeling (SPSS, AMOS version 19). The 12 items of the appearance investment measure were combined into three parcels using the item-to-construct balanced procedure suggested by Little, Cunningham, Shahar, and Widaman (2002). Items were parceled because this results in more parsimonious models and reduces the chance of double loadings, as well as the impact of sampling error (Little et al., 2002). Social network site use, desire to undergo cosmetic surgery, and gender were included into the models as manifest variables because these measures consisted of only one item.

The modeling followed recommendations by Cole and Maxwell (2003) for testing indirect effects in structural equation models. In line with these recommendations, previous levels of the focal variables were included in the models. This procedure considerably reduces the chance of obtaining spurious influences because, by including autoregressive effects, the model controls for past behavior and thus increases the validity of the influence of the predictor variable at time one on the outcome variable at time two (Cudeck, 1991; Gollob & Reichardt, 1991).

Shapiro-Wilk tests showed that our data were not normally distributed. Therefore the assumption of multivariate normality required for the traditional parametric tests was not met. The bootstrapping method is often used to alleviate statistical problems which may arise from the violation of the assumption of normality (Efron & Tibshirani, 1993). We therefore applied the bootstrap method (1,000 bootstrap samples, $N = 604$ each) to the model and report both the
SNS, Appearance Investment, and Cosmetic Surgery

results of the parametric tests and the bootstrap bias–corrected and accelerated 95% confidence intervals of the bootstrap procedure for the estimates. We only accepted an estimate as significant if both the parametric test and the bootstrapping indicated a significant difference from zero.

Results

Descriptive Statistics

Descriptive information and gender differences regarding the main variables are displayed in Table 1.

Table 1 Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>SNS use</th>
<th>Appearance investment</th>
<th>Desire to undergo cosmetic surgery</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Time 1</td>
<td>Time 2</td>
<td>Time 1</td>
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<td>Time 2</td>
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<td></td>
</tr>
<tr>
<td>Girls</td>
<td>2.79***</td>
<td>2.03***</td>
<td>27.05***</td>
</tr>
<tr>
<td>Boys</td>
<td>2.03***</td>
<td>2.19***</td>
<td>22.12***</td>
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<td>27.35***</td>
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<td></td>
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<td>22.80***</td>
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<tr>
<td>SD</td>
<td>1.42</td>
<td>1.56</td>
<td>9.05</td>
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<td>1.18</td>
<td>1.46</td>
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<td>9.05</td>
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<tr>
<td>Maximum</td>
<td>4</td>
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<td>48</td>
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<td>4</td>
<td>4</td>
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</table>

Note. SNS use represents the frequency with which adolescent boys and girls visit social network site Hyves.nl (0 = never, 4 = always). Appearance investment is the degree to which adolescent boys and girls are focused on and behaviorally invested in their appearance (higher scores indicate greater investment in appearance). Desire to undergo cosmetic surgery represents the degree to which adolescent boys and girls indicated wanting to undergo cosmetic surgery if it was offered free of charge (0 = definitely not, 4 = definitely).

In addition to what is displayed in Table 1, it is interesting to note that at time 1 among boys 58.1% and among girls 79.1% visited the social network site “regularly” to “always”. At time 2 this was respectively: 66.5% and 87.3%. In contrast, at time 1 25.5% (time 2: 19.8%) of boys and 19.8% (time 2: 5.9%) of girls never used the social network site. At time 1, 7.4% of boys and 10.8% of girls reported that they probably or definitely would undergo cosmetic surgery if it was offered to them for free (4.7% of boys and 11.7% of girls at time 2). On the other hand, 77.2% of boys and 74.2% of girls reported definitely not or probably not wanting to undergo cosmetic surgery if it was offered to them for free (80.5% of boys and 70.9% of girls at time 2).
Relations between Social Network Site Use, Appearance Investment and Cosmetic Surgery Desire

Table 2 Zero-Order Correlations

<table>
<thead>
<tr>
<th></th>
<th>SNS use</th>
<th>Appearance investment</th>
<th>Desire to undergo cosmetic surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time 1</td>
<td>Time 2</td>
<td>Time 1</td>
</tr>
<tr>
<td>SNS Use</td>
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<td>Appearance investment</td>
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<td>Desire to undergo cosmetic surgery</td>
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<td>Time 1</td>
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<td>Time 2</td>
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Note. * p < .05. ** p < .01. *** p < .001 (two-tailed)

As the zero-order correlations in Table 2 indicate, desire to undergo cosmetic surgery positively correlated with frequency of social network site use at and across time points, which is congruent with H1a. In line with H1b, frequency of social network site use and appearance investment were positively correlated, concurrently and over time. In line with H1c appearance investment was also significantly and positively correlated with desire to undergo cosmetic surgery, at and across both time points.

However, for a rigorous test of our first set of hypotheses, we tested the robustness and direction of the hypothesized relationships with the structural equation modeling techniques described in the methods section. To test H1a we first modeled the effect of social network site use at time 1 on cosmetic surgery desire at time 2, and of cosmetic surgery desire at time 1 on cosmetic surgery desire 2. This model achieved adequate fit, $\chi^2(df = 1, N = 604) = 2.154$, $p = .142$, CFI = .998, RMSEA = .044 (90% CI: .000/.127). In contrast with H1a, the effect of social network site use on cosmetic surgery desire was not significant, $\beta = .040$, $B = .027$, $SE = .004$, $p = .261$ (Bt bca 95% CI: -.021/.077).
Figure 1. Simplified illustration of main AMOS model of effects between social network site use, appearance investment and desire to undergo cosmetic surgery

H1b through H1d were tested in a second model. (For a simplified version, see Figure 1.) This model achieved an adequate fit, $\chi^2(df = 29, N = 604) = 67.76, p = .000$, CFI = .991, RMSEA = .047 (90% CI: .033/.062). The chi-square value was significant, but with samples greater than 200, the chi-square value tends to become significant easily (Byrne, 2001). The modeled effect of social network site use at time 1 on appearance investment at time 2 was positive and significant, $\beta = .066, B = .127, SE = .064, p = .046$. The bootstrap bias–corrected and accelerated 95% confidence interval (Bt bca 95% CI) ranged from .011 to .257. The CI does not include zero, thus indicating statistical significance. These results are in line with H1b. The effect of appearance investment at time 2 on cosmetic surgery at time 2 was also positive and significant, $\beta = .159, B = .055, SE = .013, p = .000$ (Bt bca 95% CI: .030/.080), which supports H1c. The hypothesized mediation effect of social network site use (time 1) on cosmetic surgery desire (time 2) through appearance investment (time 2) was also significant, $\beta = .011, B = .007, SE = .004, p = .021$ (Bt bca 95% CI: .001/.016), supporting H1d.
To check if there was an additional effect of social network site use on cosmetic surgery in addition to the hypothesized mediation effect through appearance investment, we modeled the direct effect of social network site use at time 1 on desire for cosmetic surgery at time 2. This direct effect was not significant, $\beta = .007, B = .005, SE = .024, p = .847$ (Bt bca 95% CI: -.044/.055). In addition, we compared the fit of two versions of model in Figure 1, namely when the direct path of social network site use on cosmetic surgery desire was constrained to 0 versus when this direct path was allowed to vary. The model with the constrained path did not lead to a significant change in fit, $\chi^2(1, N = 604) = .037, p = .847, \text{TLC}_{\text{change}} = -.001$. There was therefore no evidence of a direct effect of social network site use on cosmetic surgery desire.

**Gender Differences**

To test the second set of hypotheses, namely the main effects of gender, we first conducted t-tests. As predicted in H2a, girls reported greater desire to undergo cosmetic surgery on average compared with boys (time 1, $t(604) = 2.13, p = .033$; time 2, $t(604) = 4.10, p < .001$). Compared with boys, girls were also significantly more invested in their appearance, which is in line with H2b (time 1, $t(604) = 6.75, p < .001$; time 2, $t(604) = 6.50, p < .001$). In addition, adolescent girls on average visited social network sites significantly more frequently than boys did (time 1, $t(604) = 6.24, p < .001$; time 2, $t(604) = 7.74, p < .001$).

The results of the structural model also confirmed the hypothesized gender effects. In line with H2a, the modeled effect of gender on desire for cosmetic surgery (time 2) was significant, $\beta = .078, B = .159, SE = .073, p = .029$ (Bt bca 95% CI: .001/.322). The effect of gender on appearance investment (time 2) was also significant, $\beta = .070, B = .414, SE = .195, p = .034$ (Bt bca 95% CI: .017/.833), again supporting H2b. We also modeled the effect of gender on social network site use at time 2 to control for possible gender differences in social network site use. This effect was significant, with girls using social network sites more frequently than boys, $\beta = .164, B = .455, SE = .091, p < .000$ (Bt bca 95% CI: .275/.658).

**Moderation of Gender**

To test the third set of hypotheses, in which we specified the moderating effects of gender on our focal influences, we conducted multiple group analyses with gender as the grouping variable. We compared the unconstrained main model, illustrated in Figure 1, with three partly constrained models. Generally, when the
fits of the constrained and the unconstrained model differ significantly, the focal influence can be said to differ significantly between groups. In the first constrained model we constrained the path from social network site use (time 1) to appearance investment (time 2). In contrast to the prediction of H3a, the constrained model did not yield a significantly different fit than the unconstrained model, $\chi^2(1, N = 604) = .054, p = .816, \text{TLI}_{\text{change}} = -.001$. This suggests that the effect of social network site use on appearance site use was not moderated by gender.

To test H3b, which predicted that the effect of appearance investment on cosmetic surgery desire would be stronger among girls, we constrained the path of appearance investment (time 2) on cosmetic surgery desire (time 2) in a second model. The constrained model did not have a significantly different fit than the unconstrained model, $\chi^2(1, N = 604) = .117, p = .732, \text{TLI}_{\text{change}} = -.001$, contrary to the predictions of H3b. In the third constrained model, which tested whether the hypothesized indirect effect of social network site use on desire for cosmetic surgery through appearance investment would be stronger among girls (H3c), both previously mentioned paths were constrained. Again, fits of the constrained model and the unconstrained model did not differ significantly, $\chi^2(2, N = 604) = .171, p = .918, \text{TLI}_{\text{change}} = -.001$. H3c was not supported. In sum, the hypothesized influences were similar among female and male adolescents.

**Additional Analyses**

To obtain information about the robustness of our findings, we conducted four additional analyses. Due to space constraints, the results of the analyses described below will not be reported in detail here, but can be obtained from the corresponding author. First, to test if the effects would hold after controlling for possible relevant third variables, we ran the main model with control variables. We included age, internalization of sociocultural attitudes about appearance (the degree to which appearance norms in the media are used as a standard for the own appearance), BMI, and body satisfaction (all measured at time 1) as manifest variables, and modeled their influences on social network sites, appearance investment and cosmetic surgery desire at time 2. Previous research has suggested that these variables may confound the relationships between the key variables (Aubrey, 2006). We also modeled covariances among the key variables at time 1 and the control variables, as previous research has shown that these variables may correlate (McCabe & Ricciardelli, 2003). This model achieved a good fit and the analyses generally yielded a similar pattern of results as the main model, with
one exception. The influences of gender on social network site use, appearance investment and cosmetic surgery desire were not significant in the model with control variables.

Second, for hypothesis H1b, the hypothesized effect of social network site use on appearance investment, and H1c, the hypothesized effect of appearance investment on cosmetic surgery desire, the model in Figure 1 might produce biased results: The model includes more variables than the ones included in each of these hypotheses. Moreover, for the effect of appearance investment on desire for cosmetic surgery, a temporal order is missing as in Figure 1 only the time 2 values of the respective variables could be included, given the absence of a third wave. To test the hypotheses rigorously, we additionally estimated two separate autoregressive models: one in which only social network site use (time 1), appearance investment (time 1 and time 2) and gender (H1b) were included, and a second in which appearance investment (time 1), cosmetic surgery (time 1 and time 2) and gender (H1c) were included. Both models achieved adequate fits and generally elicited the same results as the analysis presented above.

Third, for an additional test of the third set of hypotheses, namely the moderating effects of gender, we conducted regression analyses. More specifically, the interaction between gender and social network site use (time 1) on appearance investment (time 2) (controlling for appearance investment at time 1) was included in a regression analysis as an additional test of H3a. Moreover, the interaction between gender and appearance investment (time 1) on desire for cosmetic surgery (time 2) (controlling for desire for cosmetic surgery at time 1) was included in a second regression analysis as an additional test of H3b. These regression analyses yielded the same results as the multiple group analyses.

Fourth, to test if the hypotheses and the resulting model were applicable to adolescents in general, or differed between specific age groups, we conducted multiple group analyses of the model in Figure 1, with age as the grouping variable. More specifically, the group was split into adolescents age 14 and younger (‘early adolescents’) and 15 and older (‘late adolescents’). The analyses revealed no moderating effect of age. In addition, we conducted the same regression analyses as described in the previous paragraph with age (instead of gender) as the moderating variable. Again, no moderating effect of age was found. Overall, these additional analyses, which used different models and statistical techniques, showed the robustness of our results.
Discussion

The current study is one of the first to explore the role that social network site use plays for outcomes related to adolescents’ body image. More specifically, the results of this longitudinal study among Dutch adolescents show that more frequent social network site use increases appearance investment among adolescents, and this increased appearance investment in turn augments their desire to undergo cosmetic surgery. In comparison with boys, girls reported more frequent use of social network sites, higher levels of appearance investment, and greater desire to undergo cosmetic surgery. However, in contrast to our expectations, the various effects of these variables on each other did not differ between boys and girls.

The findings of the present study provide at least three contributions to theory about appearance pressures and appearance-changing strategies. First, the study shows that appearance pressures can also be experienced online and are thus not constrained to face-to-face interactions and traditional media, which has been the focus of previous research. Second, the current study highlights increased appearance investment as an underlying mechanism for the effects of appearance pressures on appearance-changing strategies. We only investigated the effects of social network sites as an appearance pressure and cosmetic surgery as a body an appearance-changing strategy. However, there is some correlational evidence that the same process may occur for other appearance pressures and appearance-changing strategies (White & Halliwell, 2010). Third, the study contributes to knowledge about the role of gender: The findings suggest that the relationships between appearance pressures, appearance investment, and appearance-changing activities apply similarly to both adolescent boys and adolescent girls. However, the results also show that gender does impact the extent to which boys and girls experience appearance investment as well as their desire to engage in appearance-changing activities.

The findings of the present study also have a number of implications for research on adolescents’ body image development. Social network sites have come to play an important role in the lives of adolescents and young adults. A majority of US adolescents have a profile on at least one social network site (Lenhart et al., 2010), and Dutch adolescents spend on average 42 minutes per day on a social network site (SPOT, 2012). With the vast use of social network sites among adolescents, it is not surprising that previous research has shown that social network sites affect important aspects of adolescents’ development, such
as their relationships and self-esteem (Gentile, Twenge, Freeman, & Campbell, 2012; Valkenburg, Peter, & Schouten, 2006). The current study shows that social network sites may also play a role in adolescents’ body image, a central aspect of adolescent development. Our findings thus suggest that adolescents’ use of social network sites in general, and their self-presentation on such sites in particular, deserve more attention if we want to understand what affects adolescents’ body image development.

The findings that social network site use augments appearance investment and appearance-changing behaviors, may also have implications for the well-being of adolescents, especially for girls, who are more frequent users of social network sites and report higher levels of appearance investment and desire for cosmetics surgery than boys. If adolescents pursue their desire to engage in cosmetic surgery, this can sometimes have negative consequences for physical health and financial situations (Zuckerman & Abraham, 2008). Furthermore, the current findings may generalize to other appearance-changing strategies such as dieting and muscle-building. Previous research has suggested that these appearance-changing strategies, which are also predicted by appearance investment, result in negative affect (McCabe, Ricciardelli, & Banfield, 2001). Therefore, more frequent social network site use may increase adolescents’ negative affect through appearance investment and appearance-changing strategies. However, it is crucial that future research tests such ramifications rigorously before any conclusions are drawn.

In contrast to our expectations, the relationships between the variables were not moderated by gender. Apparently, social network site use may have the same consequences for the body image of boys and girls if used with similar frequency. One explanation for our unexpected findings may be that boys and men also experience appearance pressures. Studies done in countries as diverse as Ghana, Ukraine and the US have consistently shown that many men want to be more muscular (Frederick et al., 2007). Moreover, boys and men also seem to resort increasingly to sometimes unhealthy appearance-changing behaviors (Parent & Moradi, 2011). Finally, the lack of a moderation effect of gender in our study may result from specific gender beliefs in Dutch culture. According to Hofstede’s cultural dimension of masculinity/femininity, gender differences are less distinct in feminine cultures, such as the Netherlands, than in more masculine cultures, such as the US (Hofstede, 1998). Thus, if the same model is tested in the US or another more masculine culture, the effects of gender may be different.
Limitations and Future Directions

The results of our study need to be seen in the context of several limitations. First, because the current study tested the temporal relationships between three variables, a three-wave design would have been superior to our two-wave design. Our findings, therefore, need replication with more rigorous designs. Second, social network site use consists of many different activities, and experiences on social network sites differ between individuals. These activities and experiences may vary in the degree to which they put pressures on users to conform to appearance ideals. However, the current study only measured frequency of social network site use in general with one item. Third, we did not investigate which specific psychological processes underlie the relationship between social network site use and appearance investment and appearance-changing behavior. To better understand the role of social network site use in adolescents' body image, future studies should investigate which specific aspects of social network site use trigger the processes that lead to appearance investment and appearance-changing behavior.

Fourth, the current study only investigated the effects of the use of one specific social network site, which was only popular in the Netherlands and has declined in popularity in the past years (Newcom Research & Consultancy, 2012). Conducting studies into the features and activities on online media rather than the use of one certain medium in general would increase the applicability of the research to the fast changing media landscape. Fifth, the current measurement of desire to undergo cosmetic surgery does not provide information on which types of cosmetic surgery are considered, for which reasons, and under which conditions. In addition, asking the respondent if he or she would consider cosmetic surgery if it was offered free of charge is suboptimal, as cosmetic surgery is in reality not offered for free. Future studies may thus consider a different measurement of desire to undergo cosmetic surgery. Sixth, the current study had a relatively low retention rate of 54.2%. However, the participants who completed both waves did not differ from participants who only completed one wave. Selective drop-out is therefore unlikely. Seventh, this study was only conducted among Dutch adolescents. In general, we can only fully understand the role of social network sites in body image if this research is extended to other populations, for example in terms of age, ethnicity and educational level, as demographical and cultural factors may impact the degree to which social network site use evokes appearance pressures and gender differences in this regard.
Chapter 3

Our study is one of the first to test how social network sites and the pertinent appearance pressures are related to appearance investment and the desire to undergo cosmetic surgery. More research is needed to judge the robustness and generalizability of our findings. However, it seems safe to say that researchers, care-givers, and policy makers in the field of communication and body image should not discard the possibility that the use of online media such as social network sites may affect body-related outcomes among adolescent boys as well as girls.
References


Chapter 3


SNS, Appearance Investment, and Cosmetic Surgery


Chapter 4

Adolescents’ Social Network Site Use, Appearance Training, and Body Dissatisfaction: Testing a Mediation Model

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Abstract

Due to their focus on personal photographs and physical appearance, social network sites may encourage and facilitate appearance training among adolescents, that is, influencing each other to conform to sociocultural body ideals. The tripartite influence model of body image predicts that receiving appearance training contributes to body dissatisfaction (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). Therefore, social network site use was expected to increase body dissatisfaction through appearance training. The present two-wave panel study tested these hypothesized relationships among 604 Dutch adolescents (aged 11-18) and explored the potential moderation of gender. Structural equation modeling showed similar results for boys and girls: Social network site use increased body dissatisfaction and also predicted increased appearance training. However, appearance training did not predict body dissatisfaction. The effect of social network site use on body dissatisfaction was thus not mediated by appearance training.
Body dissatisfaction is a significant threat to adolescents' wellbeing (Markey, 2010). Adolescents who are more dissatisfied with their physical appearance run a high risk to suffer, for example, from depression, eating disorders, and low self-esteem (as reviewed by Markey, 2010). As a result, there has been much public and academic interest into identifying factors which contribute to body dissatisfaction. The current study aims at contributing to this knowledge by exploring a relatively understudied potential impact on body dissatisfaction, namely the use of social network sites. Social network sites are websites which consist of personal profiles of users (Pempek, Yermolayeva, & Calvert, 2009). On these profiles users present the self to others through text and pictures, view and comment on the self-presentations of other users, and read others' comments on the own self-presentations (Pempek et al., 2009).

There is some initial correlational evidence that social network site use is negatively associated with body image among adolescent girls (Tiggeman & Miller, 2010; Tiggeman & Slater, 2013). However, at least three important gaps remain in our knowledge about the relation between the use of social network sites and adolescents' body image. First, existing studies on the effects of social network site use on body image are limited to cross-sectional data (Meier & Gray, 2013; Tiggeman & Miller, 2010; Tiggeman & Slater, 2013). These studies show that individuals who are more dissatisfied with their appearance concurrently also use social network sites more frequently. However, we do not know whether social network site use changes body dissatisfaction over time. The first aim of the current study is therefore to test if the frequency of social network site use longitudinally predicts changes in body dissatisfaction.

Second, no studies to date have tested mechanisms that may explain the initial association found between social network site use and body image (Tiggeman & Miller, 2010; Tiggeman & Slater, 2013). Due to the popular activities of posting photographs of the self on social network sites and commenting on each other's pictures, as well as the centrality of physical appearance in these activities, social network sites may lend themselves to "appearance training" among friends (Meier & Gray, 2013). Appearance training entails talking about physical appearance and reinforcing each others' attempts to improve physical appearance (Jones, 2004). In this way, appearance training influences individuals' body image (Jones, 2004; Jones, Vigfusdottir, & Lee 2004; McCabe & Ricciardelli, 2001). Social network sites may thus impact body dissatisfaction by increasing the amount of appearance training received from friends. It is the second aim of this study to test this mediation mechanism.
Third, research on the effect of social network site use on body image has only focused on girls (Meier & Gray, 2013; Tiggeman & Miller, 2010; Tiggeman & Slater; 2013). Although this focus is understandable because body image problems are more prevalent among girls, there is evidence that boys also experience body dissatisfaction (McCabe & Ricciardelli, 2001). Furthermore, factors that affect girls’ body image were also found to impact boys’ body image (Ricciardelli & McCabe, 2004). It is therefore our third aim to investigate the relationships between social network site use, appearance training, and body dissatisfaction both among boys and among girls and to establish if and how these factors and processes differ between boys and girls.

The Tripartite Influence Model of Body Image

A useful conceptual framework for investigating body image is the tripartite influence model of body image, which is also referred to as the sociocultural model of body image (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). This model describes that beauty ideals are conveyed to individuals through a variety of sociocultural channels, notably individuals’ parents, peers, and the media (Thompson et al., 1999). Individuals internalize these beauty ideals, and, to the extent that their own appearance does not match these ideals, become dissatisfied with their appearance. As typically very few bodies look like the ideal, body dissatisfaction is the most likely outcome for the vast majority of individuals. In this way, sociocultural channels contribute to body dissatisfaction.

In line with predictions of the tripartite influence model, the influence of the media, parents, and peers on adolescent body dissatisfaction has been supported by research (Keery, Van den Berg, & Thompson, 2004; Shroff & Thompson, 2006; Stanford & McCabe, 2005). Studies that dealt with the effects of media, such as TV and magazines, have typically focused on the effects of highly idealized images of physically attractive people and appearance-focused content on body dissatisfaction (for meta-analyses see Bartlett, Vowels, & Saucier, 2008 [males]; Groesz, Levine, & Murnen, 2002 [females]). However, few studies have paid attention to the changing media landscape and the rise of online media. Not only are online media particularly often used by adolescents (Lenhart & Madden, 2007; Lenhart, Purcell, Smith, & Zickuhr; SPOT, 2012), they also offer adolescents unprecedented opportunities to present their own bodies while scrutinizing those of others (Meier & Gray, 2013; Ringrose, 2011; Siibak, 2009). This raises the question if and how social network site use also influences adolescent body image.
Research into adolescents’ activities and experiences on social network sites suggests that social network sites do influence adolescents’ appearance. Some studies have initially shown that social network site use is negatively related to body image, at least among adolescent girls (Tiggeman & Miller, 2010; Tiggeman & Slater, 2013). This finding merges with evidence that physical appearance plays a central role in adolescents’ activities and experiences on social network sites (Ringrose, 2011; Siibak, 2009). For example, social network site activities revolve around personal photographs, as adolescents upload pictures of themselves to their profile (Lenhart et al., 2010; Madden et al., 2013) and the choice of which pictures are uploaded is at least partly based on the uploader’s physical appearance in the photograph (Siibak, 2009). Both male and female adolescents reported good looks as the most relevant factor for choosing a profile picture on their social network site profile (Siibak, 2009). Furthermore, adolescent girls report that they edit their photos to create a physically attractive representation of themselves on their profile (Ringrose, 2011).

Existing evidence thus suggests that social network site use may exert a sociocultural influence on adolescents to look physically attractive. According to the tripartite influence model, sociocultural influences to look attractive contribute to body dissatisfaction. Therefore, we hypothesized:

H1: As adolescents use social network sites more frequently, their body dissatisfaction increases.

A Mediation Model

Hypothesis 1 predicts that social network site use impacts body dissatisfaction. However, in order to fully comprehend this potential effect of social network site use on body dissatisfaction, we need to understand the mechanism underlying this effect. One potential factor mediating the effect of social network site use on body dissatisfaction involves peer influence. During adolescence, peers are an important source for shaping norms and behavior in several arenas (Biddle, Bank, & Marlin, 1980; Brown, Bakken, Ameringer, & Mahon, 2008). One such arena concerns appearance norms and behavior (Jones, 2004; Paxton, Schutz, Wertheim, & Muir, 1999). More specifically, adolescents engage in appearance training which involves talking about each other’s appearance and reinforcing each other’s attempts to conform to the appearance ideals (Jones, 2004).

Appearance training among friends may be particularly frequent on, or in response to, social network site profiles, given the centrality of physical appearance
on social network sites (Ringrose, 2011; Siibak, 2009; Wang, Moon, Kwon, Evans, & Stefanone, 2010). The large majority of adolescents upload one or more photographs of the self to their social network site profile (Madden et al., 2013) and receive feedback about their physical appearance in response to these profiles (Ringrose, 2010). Furthermore, adolescents are reinforced for looking attractive because adolescents who appear more attractive are more popular on social network sites (Siibak, 2009). Such feedback and reinforcement about appearance constitute appearance training. Therefore, social network site use can be expected to go hand in hand with appearance training among friends.

The body types which adolescents report as their ideals generally mirror those represented in mass media (Dittmar et al., 2000). The large majority of individuals do not look like this ideal, which is generally considered to be difficult to attain (Buote, Wilson, Strahan, Gazzola, & Papps, 2011). The tripartite influence model predicts that because adolescents are pressured to conform to these beauty ideals that they typically will not match receiving appearance training from friends will result in body dissatisfaction. In line with this prediction, research has shown that adolescents who talk about their bodies with friends more frequently, as well as those who perceive more peer pressure to conform to the cultural beauty ideal, are less satisfied with their bodies (e.g., Jones, 2004; Jones et al., 2004; Keery et al., 2004). In sum, if the use of social network sites can be expected to increase appearance training and appearance training is likely to increase body dissatisfaction, then appearance training will mediate the effect of social network site use on body dissatisfaction. We hypothesized:

H2: (a) As adolescents frequency of social network site use increases, the degree to which they receive appearance training from friends increases, which in turn (b) leads to greater body dissatisfaction. (c) The use of social network sites exerts thus at least a part of its effect on body dissatisfaction indirectly though appearance training.

Moderation by Gender

Based on the existing literature, there are reasons to assume that the relations hypothesized above may differ in strength depending on adolescents’ gender. The tripartite influence model emphasizes that adolescents’ body dissatisfaction results from sociocultural channels that convey unrealistic beauty ideals to them. Although boys and girls are both influenced by sociocultural channels to conform to these appearance ideals, there is evidence that these influences are
generally greater on girls than on boys (McCabe & Ricciardelli, 2001). Furthermore, the types beauty ideals as well as their attainability differs greatly between the two genders.

The female body ideals are often considered to be more homogenous and rigid than the male body ideals (Buote et al., 2011). Media images of women almost exclusively portray thin, young, attractive women, whereas media images of men are more flexible, with more different body types being considered attractive. In addition, the appearance ideals for women are typically less attainable than the ideals for men (Buote et al., 2011). This means that it is considered to be less possible for women to achieve the female body ideal than for men to achieve the male body ideal (Buote et al., 2011). As a result, girls are expected to perceive greater discrepancies between their actual body and the sociocultural ideal.

The tripartite model predicts that when sociocultural channels exert more influence on individuals to conform to beauty ideals, and when the discrepancy between these ideals and the actual body is larger, body dissatisfaction will be greater. Given that girls perceive more pressure to conform to beauty ideals from sociocultural channels than boys (McCabe & Ricciardelli, 2001) and that the discrepancy between the own body and the ideal body is expected to be larger among girls due to the greater unattainability of the female beauty ideals (Buote et al., 2011), sociocultural influences on body image are expected to lead to more body dissatisfaction among girls. Accordingly, one experiment found that idealized appearance in mass media contributed to body dissatisfaction among adolescent girls but not among boys (Hargreaves & Tiggemann, 2004). In light of the preceding discussion in which we highlight social network site use as a potential sociocultural influence on adolescent body image, we hypothesized:

H3a: The positive effect of frequency of social network site use on body dissatisfaction is stronger among adolescent girls than among boys.

One way in which social network sites may exert greater influence on girls’ than boys’ body image is due to girls’ more frequent reception of appearance training during social network site use. Adolescent girls receive comments about their physical appearance more often than boys do (McCabe, Ricciardelli, & Ridge, 2006). This gender difference regarding friends’ feedback and comments about appearance seems also present on social network sites. Some research has shown that, on social network sites, females are evaluated more strongly based on their physical appearance than males (Manago, Graham, Greenfield, & Salimkhan, 2008). Furthermore, people pay more attention to females’ than males’ physical
appearance on social network sites (Seidman & Miller, 2013), which may also result in more comments. Consequently, girls may receive more appearance training as a result of their use of social network sites than boys do. Thus we predicted:

\[ \text{H3b: The positive effect of frequency of social network site use on appearance training is stronger among adolescent girls than boys.} \]

As the ideals adolescents train each other to conform to mirror those in mass media (Dittmar et al., 2000) appearance training will pressure girls to conform to a more unattainable body ideal than boys. Appearance training is therefore expected to lead female adolescents to perceive a greater discrepancy between their bodies and the ideal than male adolescents. As the tripartite model posits that the discrepancy between the ideal body conveyed by sociocultural channels and the actual body contributes to body dissatisfaction we predicted:

\[ \text{H3c: The effect of appearance training on body dissatisfaction is stronger among adolescent girls than among boys.} \]

**Method**

**Sample and Procedure**

A two-wave panel survey was conducted by Rutgers WPF (Dutch Expert Centre on Sexuality) and the Netherlands Youth Institute (Nederlands Jeugdinstuut). In addition to the measures described below, the survey also included questions related to (sexual) media use, sexual attitudes and behaviors, and body image. The first wave was conducted in July through September 2008 and the second wave in December 2009. The survey was conducted among children of members of Intomart GfK, an online access panel which consists of 25,000 members across the Netherlands. Recruitment across the Netherlands improves generalizability in comparison with convenience samples. Coverage bias due to the use of an online panel was unlikely because internet access was 98% among people under 25 in the Netherlands (Centraal Bureau voor de Statistiek, 2012).

In all, 3,160 Intomart GfK members, who were parents of at least one child aged between 11 and 18, were contacted with a screening questionnaire and asked for permission to contact their children. Of these members 50.6% responded, gave permission, and filled out the screening questionnaire completely. This resulted in 1,600 adolescents being invited to participate in the first wave, of whom 1,294 (80.9%) completed the questionnaire. For the second wave, adolescents who had
completed the first questionnaire were asked, again via their parents, to complete a questionnaire similar to the first. In total, 604 adolescents completed all measures that were of interest for the current study in both waves. Retention rate was thus 54.2%.

The age of participants in the final sample ranged between 11 and 18 \( (M = 14.7, SD = 1.7 \text{ at time 1}) \). There were no differences in terms of gender, \( t(1292) = .082, p > .05 \), or level of education, \( t(1292) = -1.09, p > .05 \) between adolescents who completed both waves and those who dropped out after the first wave. However, respondents who only completed one wave were four months older on average than respondents who completed both waves, \( t(1292) = -3.32, p = .001 \). The sample did not deviate from official Dutch population statistics in terms of gender (50.7% girls), but were more likely to receive higher levels of education and have parents born in the Netherlands than the average Dutch population (Centraal Bureau voor de Statistiek, 2012).

**Measures**

**Social network site use.** Frequency of social network site use was assessed with the question: “How often did you visit Hyves.nl in the past six months?” The response options ranged from 0 (never) to 4 (always) \( (M = 2.4, SD = 1.5 \text{ at time 1}; M = 2.6, SD = 1.4 \text{ at time 2}) \). Hyves.nl at that time was a social network site comparable to Facebook in terms of its goal, set-up, and technological possibilities. Hyves.nl was the most social network site among Dutch adolescents at the time of the study. Although there were other social network sites on which some adolescents had a profile (Facebook, MySpace, etc) Hyves.nl was the dominant and most popular social network site (like Facebook is currently) with 75% of adolescents age 12-17 having a profile on the website (Mijn Kind Online, 2009).

**Appearance training.** Appearance training from friends was measured using a scale constructed specifically for the survey. This scale consisted of four items asking participants how often their friends (1) give them tips to get a more beautiful body, (2) give them negative feedback about their appearance or clothes, (3) give them tips to look sexy, and (4) tell them it is important to look good. The response options ranged from 0 (never) to 4 (very often). Factor analysis showed that the four items could be combined into a single factor which explained 62.6% of the variance. The items were averaged to create a composite score. Cronbach’s alpha was .79 at time 1 and .82 at time 2 \( (M = 0.53, SD = 0.57 \text{ at time 1}; M = 0.59, SD = 0.60 \text{ at time 2}) \).
Body dissatisfaction. Body dissatisfaction was assessed using a version of the Dutch translation of the Body Areas Satisfaction Scale, a subscale of the Multidimensional Body-Self Relations Questionnaire (Cash, 1994), which was adapted for the use with adolescents. A similar scale has been successfully used among Dutch adult males and females (Woertman & van den Brink, 2008), and a comparable scale has been used among adolescent boys and girls in the US (Jones, 2004). The scale entailed items asking respondents how satisfied they are with eight different appearance attributes (face, hair, buttocks, stomach, breasts/chest, genitals, muscularity, and body weight). The response options ranged from 0 (very satisfied) to 4 (very dissatisfied). Scores were averaged to create a composite score. Factor analysis revealed that all eight items loaded on a single factor which explained 49.1% of the variance. Cronbach’s alpha was: .85 at time 1 and .84 at time 2 ($M = 1.46, SD = 0.65$ at time 1; $M =1.45, SD = 0.65$ at time 2).

Data Analysis

First, zero-order correlations were calculated between all measures at both time points. Then, we tested the first hypothesis and the second set of hypotheses in two separate models using structural equation modeling in SPSS, AMOS version 19. In order to test the hypothesized moderation of gender specified in the third set of hypotheses, the models were subjected to multiple group analysis. In the set-up of the models, we followed recommendations by Cole and Maxwell (2003). All analyses therefore included previous levels of the variables of interest. In this way, we controlled for past behavior, which increases the validity of the influence of the effect of the predictor variables at time 1 on the outcome variables at time 2 (Cudeck, 1991; Gollob & Reichardt, 1991).

In the structural equation models, the eight items of the body dissatisfaction scale were combined into three parcels using the item-to-construct balanced procedure suggested by Little, Cunningham, Shahar, and Widaman (2002). Item parceling results in more parsimonious models and reduces the chance of double loadings and the influence of sampling error (Little et al., 2002). The single-item measure social network site use was included into the model as manifest variable. The four items measuring appearance training were not subjected to item-parceling, as there were not enough items to create three parcels, the recommended number in the item-to-construct balanced procedure (Little et al., 2002).

The assumption of multivariate normality required for the traditional parametric tests was not met according to results of Shapiro-Wilk tests. To alleviate
statistical problems due to violation of the assumption of normality we applied the bootstrap method to all models (1,000 bootstrap samples, \(N = 604\) each) (Efron & Tibshirani, 1993), and based our conclusions both on the bootstrap bias–corrected and accelerated 95% confidence intervals as well as the results of the parametric tests for the estimates. We only considered a hypothesis supported if the results of both tests supported this hypothesis.

Results

Descriptive Statistics and Zero Order Correlations

As shown in Table 1, girls visited social network sites more frequently, experienced appearance training from friends more often, and were more dissatisfied with their bodies than boys. In addition to what is displayed in Table 1, it is interesting to note that, at time 1, 58.1% of the boys and 79.1% of the girls visited the social network site “regularly” to “always.” At time 2, this was respectively 66.5% and 87.3%. In contrast, at time 1, 25.5% (time 2: 19.8%) of boys and 19.8% (time 2: 5.9%) of girls never used the social network site.

Table 1 Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Social Network Site Use</th>
<th>Appearance Training</th>
<th>Body Dissatisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time 1</td>
<td>Time 2</td>
<td>Time 1</td>
</tr>
<tr>
<td><strong>Girls</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>2.79***</td>
<td>2.03***</td>
<td>3.03***</td>
</tr>
<tr>
<td><strong>Boys</strong></td>
<td>1.42</td>
<td>1.56</td>
<td>1.18</td>
</tr>
<tr>
<td><strong>Minimum</strong></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Maximum</strong></td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Note. Social network site use represents the frequency with which adolescents visit the social network site (0 = never, 4 = always). Appearance training represents how often appearance training is experienced from friends (0 = never, 4 = very often). Body dissatisfaction represents how satisfied respondents are with different appearance attributes (0 = very satisfied, 4 = very dissatisfied).

\* p < .05. \*\* p < .01. \*\*\* p < .001 (two-tailed)

Effect of Social Network Site Use on Body Satisfaction

As the zero-order correlations in Table 2 indicate, frequency of social network site use at time 1 positively correlated with body dissatisfaction at time 2,
which is congruent with H1. To test this hypothesis more rigorously, we modeled the hypothesized influence of hypothesis 1, namely the effect of social network site use (time 1) on body dissatisfaction (time 2) in a structural equation model, as outlined in the methods section. The resulting model achieved good fit, \( \chi^2(df = 14, N = 604) = 16.420, p = .288, CFI = .999, \text{RMSEA} = .017 \) (90% CI: .000/.045). Frequency of social network site use positively and significantly predicted body dissatisfaction, \( \beta = .101, B = .038 SE = .014, p = .005 \). The bootstrap bias–corrected and accelerated 95% confidence interval (Bt bca 95% CI) ranged from .007 to .065. This confidence interval does not include zero which indicates statistical significance. The findings thus supported H1.

Table 2 Zero-Order Correlations

<table>
<thead>
<tr>
<th></th>
<th>SNS Use</th>
<th>Appearance Training</th>
<th>Body Dissatisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time 1</td>
<td>Time 2</td>
<td>Time 1</td>
</tr>
<tr>
<td>SNS Use</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Time 2</td>
<td>.597***</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Appearance Training</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>.122**</td>
<td>.110**</td>
<td>—</td>
</tr>
<tr>
<td>Time 2</td>
<td>.176***</td>
<td>.175***</td>
<td>.371***</td>
</tr>
<tr>
<td>Body Dissatisfaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time 1</td>
<td>.056</td>
<td>.085*</td>
<td>.074</td>
</tr>
<tr>
<td>Time 2</td>
<td>.133**</td>
<td>.114**</td>
<td>.045</td>
</tr>
</tbody>
</table>

Note. SNS use represents the frequency with which adolescents visit the social network site (0 = never, 4 = always). Appearance training represents how often appearance training is experienced from friends (0 = never, 4 = very often). Body dissatisfaction represents how satisfied respondents are with different appearance attributes (0 = very satisfied, 4 = very dissatisfied).

**p < .01, ***p < .001 (two-tailed)

Mediation Model

With respect to the second set of hypotheses, frequency of social network site use at time 1 positively correlated with appearance training at time 2, which is congruent with H2a. In contrast with H2b, appearance training at time 1 and body dissatisfaction at time 2 were not significantly correlated. The second set of hypotheses was also tested more rigorously in a second AMOS model in which the effect of social network site use (time 1) on appearance training (time 2), and of appearance training (time 2) on body dissatisfaction (time 2) were modeled. This model yielded a good fit, \( \chi^2(df = 89, N = 604) = 151.114, p = .000, CFI = .986, \text{RMSEA} = .034 \) (90% CI: .024/.043).
In line with H2a, the effect of social network site use at time 1 on appearance training at time 2 was positive and significant, $\beta = .140$, $B = .052$, $SE = .015$, $p < .001$ (Bt bca 95% CI: .020/.082). In contrast to H2b, the effect of appearance training (time 2) on body dissatisfaction (time 2) was not significant, $\beta = .066$, $B = .067$, $SE = .040$, $p = .095$ (Bt bca 95% CI: -.017/.170). The indirect effect of social network site use (time 1) on body dissatisfaction (time 2) through appearance training (time 2) (H2c) was not significant in the parametric tests, but was significant according to the bootstrap interval, $\beta = .009$, $B = .003$, $SE = .003$, $p = .085$ (Bt bca 95% CI: .000/.011). Because we only considered a hypothesis supported when both tests were significant, H2c was rejected.

**Moderation of Gender**

The third set of hypotheses, specifying moderating effects of gender, was tested using multiple group analyses with gender as the grouping variable. We first compared the model testing H1 with a partly constrained model, in which we constrained the path from social network site use (time 1) to body dissatisfaction (time 2). When the fits of the constrained and the unconstrained model differ significantly, the focal influence of the constrained path differs significantly between groups. In contrast to the prediction of H3a, this constrained model did not yield a significantly different fit than the unconstrained model, $\chi^2(1, N = 604) = 1.837$, $p = .175$, TLI change = .001. This suggests that the effect of social network site use on appearance training was not moderated by gender, contrasting H3a.

We then compared the unconstrained model testing H2a-c with two partly constrained models in order to test H3b and H3c. In the first constrained model, we constrained the path from social network site use (time 1) to appearance training (time 2). In contrast to the prediction of H3b, this constrained model did not yield a significantly different fit than the unconstrained model, $\chi^2(1, N = 604) = .869$, $p = .351$, TLI change = .000. This suggests that the effect of social network site use on appearance training was not moderated by gender. H3b was thus not supported.

To test H3c, which predicted that the effect of appearance training on body dissatisfaction would be stronger among girls, we constrained the path of appearance training (time 2) on body dissatisfaction (time 2) in a second model. This second constrained model did not have a significantly different fit than the unconstrained model, $\chi^2(1, N = 604) = 2.846$, $p = .092$, TLI change = .000, contrary to the predictions of H3c.
Discussion

The current study is, to our knowledge, the first to investigate longitudinally the effects of social network site use on adolescents’ body dissatisfaction; to test an underlying mechanism of this effect; and to incorporate the experiences of boys as well as girls. The results showed that social network site use augmented body dissatisfaction. Furthermore, social network site use predicted more frequent appearance training received from friends. However, in contrast to our expectations, appearance training did not predict body dissatisfaction, thus not mediating the effect of use of social network sites on body dissatisfaction. There were no significant gender differences regarding the investigated processes or the strength of effects. These findings have several theoretical and practical implications.

Regarding the theoretical implications of this study, our findings support several notions of the tripartite model, contradict others, and extend some. The results of the current study shed new light on the nature and effects of the sociocultural influences, which, according to the tripartite model, impact body image. Regarding the nature of the sociocultural influences, the tripartite influence model only considers parents, peers, and mass media influences on body image. Our finding that social network site use augmented body dissatisfaction suggests that social network sites form an additional sociocultural channel that influences adolescent body image. The tripartite model may thus need to be extended to incorporate new media in which users create, share and respond to appearance-related content as an additional sociocultural channel. Further research should also explore other new media as potential channels influencing adolescent body image, including online platforms that revolve around physical appearance (e.g., pro-ana communities, Custers & Van den Bulck, 2009).

Regarding the effects of the sociocultural influences on appearance, the finding that appearance training was not related to body dissatisfaction contradicts the tripartite models’ notion that peer influence to conform to appearance ideals in general contributes to body dissatisfaction. One explanation for this unexpected finding may be that the impact of received appearance training on body dissatisfaction may depend on the valence of the appearance training received. Research suggests that positive reinforcement regarding appearance increases satisfaction with appearance whereas negative feedback increases body dissatisfaction (Herbozo & Thompson, 2006). The current measure of appearance training did not capture such differences. Therefore, we cannot preclude that, if the
current sample of adolescents on average received the same amount of negative as positive appearance comments, the effects may have cancelled each other out. Future research should investigate whether the valence of comments and feedback from sociocultural channels moderates the effect of appearance training on body dissatisfaction, which could add an important new condition to the processes specified in the tripartite model.

Another explanation for the missing mediation effect of appearance training may be that the effect of appearance training on body dissatisfaction is confined to a specific group of adolescents. Previous research has shown differential susceptibility regarding sociocultural influences on body image. For example, experimental evidence suggests that, in the long run, reading fashion magazines only affects the body image of adolescent girls who are characterized by relatively high levels of perceived pressure to be thin and body dissatisfaction, and lower levels of social support (Stice, Spangler, & Agras, 2001). In the same way, appearance training may in particular influence the body image of adolescents who are already dissatisfied with their appearance; who perceive more pressures to conform to the body ideals; and who experience social support deficits. Future research should identify potentially vulnerable groups in order to fully understand the impact of sociocultural influences, including appearance training and social network sites, on body image.

The finding that the effect of social network site use on body dissatisfaction was not mediated by appearance training suggests that there are other mechanisms at play. One potential mediator through which social network site use may impact body dissatisfaction is through increasing exposure to appearance ideals. Adolescents tend to put up only the best looking pictures of themselves on their social network site profiles, sometimes even editing pictures to look more attractive (Ringrose, 2011; Siibak, 2009). In this way, idealized versions of bodies are disproportionally displayed on social network sites in a similar way as in mass media, yet portraying peers instead of models and celebrities. As a result, viewing social network sites possibly influences adolescent body image in a similar way as viewing the beauty ideal in mass media. It would be useful to investigate the degree to which social network site use is related to exposure to body ideals, and whether this mediates the effect of social network site use on body dissatisfaction.

The results of the current study also have implications for research on the psychosocial well-being of adolescents. The finding that social network site use impacts body dissatisfaction is important because body dissatisfaction poses a significant threat to adolescent well-being (Markey, 2010). Furthermore, the use
of social network sites is widespread and most adolescents spend vast amounts of time on social network sites (Lenhart et al., 2010, Lenhart & Madden, 2007; SPOT, 2012). Since the second wave of the study in 2009 the frequency with which adolescents visit and the amount of time they spend on social network sites have only increased (Lenhart et al., 2010, Lenhart & Madden, 2007; SPOT, 2012). Furthermore, with the development of smartphones and tablets, adolescents’ engagement in the activities most associated with adolescent body image, namely photo-related activities (Meier & Gray, 2013) may have increased in particular. As a result, the impact of social network site use on adolescent body image may be even greater than what we established in the current study. We therefore advise researchers who are interested in adolescents’ well-being to include measures of social network site use in their studies.

Although our study points to possibly negative effects of social network site use, it is important to note that the adolescents in the sample were on average more satisfied than dissatisfied with their bodies. Furthermore, the vast majority of the current sample of Dutch adolescents reported that they never or only sometimes received appearance training from friends. While this points to relatively healthy patterns in Dutch youth’s relations with their bodies, it has been shown that the degree of body dissatisfaction and received appearance training may be more troublesome among adolescents in other countries. For example, it is documented that, among adult women, body dissatisfaction is lower in Western Europe than in North and South America (Swami et al., 2010). These cross-cultural differences may also apply to adolescents and may present an important contextualization of our results.

In terms of practical implications, our study suggests that adolescents who do report body dissatisfaction or are at a greater risk for developing body image problems may benefit from interventions or guidelines to decrease the negative impact of social network site use on body image. Such interventions could be beneficial in the same way that some interventions seem effective at decreasing the negative effects of exposure to beauty ideals in the mass media on body image (Wilksch & Wade, 2010; Yamamiya, Cash, Melnyk, Posavac, & Posavac, 2005). However, in order to develop such interventions and implement these effectively, we need to increase our understanding of how social network site use precisely impacts body image; which social network site activities affect body image; among which adolescents this occurs most strongly; and under which conditions the effects come about.
Future research on these issues would benefit from experimental approaches in order to rigorously establish causality. The current study, with its two-wave panel design, can shed first light on the causality of relations established in previous cross-sectional research, but does not have the same internal validity as an experimental design. Another shortcoming of our study refers to the investigation of hypothesized mediation. Although the current design offers a more thorough approach at establishing the temporal order of mediated effects than cross-sectional designs, a three-wave survey would have been preferable. A final limitation of the current study is the exclusive investigation of one social network site, which was very popular in the Netherlands when the study was conducted, but has declined in popularity since (Newcom Research & Consultancy, 2012). The (social) media landscape is changing: Adolescents keep switching from one online platform to another, and the platforms themselves as well as the activities on these platforms are also subject to change. One recommendation for future research is therefore to investigate the impact of activities which are not specific to one platform or to platforms at one moment in time, such as the effects that the publishing of pictures of the self or the viewing of pictures of attractive peers has on body image.

Despite these limitations, the current study shows researchers, parents, and practitioners that social network site use poses a risk to adolescent boys’ and girls’ body image and that they should aim to understand and try to counter these negative effects.
References


SNS, Appearance Training, and Body Dissatisfaction


Chapter 5

Idealized Self-Presentation Online: Relationships Among Anticipated Online vs. Offline Interaction, Self-Presentational Efficacy, Self-Presentation, and Self-Esteem

This chapter has been submitted for publication as: De Vries, D. A., Walther, J. B., Peter, J., & Valkenburg, P. M. (2013). Idealized self-presentation online: Relationships among anticipated online vs. offline interaction, self-presentational efficacy, self-presentation, and self-esteem.
Abstract

Prospective daters may be aware that online chat prior to a date can extend their opportunities for idealized self-presentation, whereas meeting in person constrains opportunities to idealize oneself to others. This experiment investigated how mode of anticipated interaction affects idealized self-presentation. Ninety-two heterosexual women constructed a dating profile while anticipating meeting a date either face-to-face or through text-based chat. When they anticipated computer-mediated (as opposed to face-to-face) interaction, they experienced greater self-presentational efficacy, that is, the degree to which they expected their profile would make a positive impression on a potential date, and they presented themselves more positively in their profiles. This idealization of profiles predicted positive changes in romantic self-esteem. In this way the mode of anticipated future interaction was shown to affect romantic self-esteem as mediated by self-presentational efficacy and idealized self-presentation.
One of the most interesting and controversial aspects of internet communication is how it affects the way we present ourselves to others. Whether the internet invites us to construct veracious self-presentations or whether it seduces us to create personae little resembling our offline selves occupies a central role in research (see for review Albright & Simmens, in press; Whitty & Joinson, 2009) and public interest (see, e.g., Jarecki et al., 2010). This controversy is especially pertinent in the study of how people construct online dating profiles. Several studies have shown that online daters tend to present themselves in an idealized way on their online profile, possibly even deceptively, in order to lure prospective dates (Ellison, Heino, & Gibbs, 2006; Hancock & Toma, 2009).

Research on self-presentation in online dating often presumes that certain affordances of computer-mediated communication (CMC) offer daters more opportunity to convey a more positive impression than they have offline (Toma & Hancock, 2011). Research in this area, however, has offered only descriptive statistics about the magnitude and pervasiveness of misrepresentation in dating profiles generally (e.g., Toma, Hancock, & Ellison, 2008), or what kinds of individuals are more likely to misrepresent various attributes (e.g., Hall, Park, Song, & Cody, 2010). To date, we know little about the specific factors that systematically cause daters either to distort their online profiles, or to limit the construction of idealized self-presentations. Research has yet to demonstrate what psychological or contextual factors affect prospective daters’ decisions and behavior regarding how they present themselves to others in online dating profiles.

One factor that may offer a meaningful and theoretical connection to online self-presentation processes pertains to the modes through which people expect to communicate in the future. Although the ultimate goal of online dating is generally to instigate an offline relationship, an offline meeting with a prospective date usually follows a series of computer-mediated exchanges (e.g., instant messaging on the dating platform, or e-mail within or outside the dating site) (Finkel, Eastwick, Karney, Reis, & Sprecher, 2012). Researchers have suggested that the anticipation of such a period with continued CMC interaction may lead to more idealized profile construction, whereas the anticipation of an immediate face-to-face date constrains idealized self-presentation in the creation of one’s online profile (e.g., Gibbs, Ellison, & Heino, 2006). However, such an impact of the mode in which transitional conversations are likely to transpire on daters’ idealized self-presentation has not been studied systematically.
Online Self-Presentation, Efficacy, and Self-Esteem

Research has suggested that people limit the extent of their idealized online self-presentations out of apparent concern with appearing deceitful in subsequent face-to-face meetings with a partner (Toma et al., 2008). In other words, when people expect that they will interact with a person through CMC they are believed to feel more able to make a positive impression than when they anticipate face-to-face interaction. This perceived ability to impress a partner is called self-presentational efficacy. Anticipated mode of future interaction may thus influence self-presentational efficacy, a notion which has not yet been tested. Self-presentational efficacy may, in turn, affect what individuals communicate about themselves in their online profiles, and the degree of idealization of the self in them. Daters who feel more able to make a positive impression on their date will be more likely to construct a more idealized image of themselves on their profile.

In addition to their prospective effects on a potential dating partner, the nature of daters’ self-presentations may also affect the daters who are building the profiles themselves. Research has suggested that we make inferences about who we are from how we present ourselves online (Gonzales & Hancock, 2008; Valkenburg & Peter, 2013). Therefore, how positive or idealized online self-presentations are is likely to impact the presenter’s self-esteem. The goal of the current research was to investigate how anticipated mode of future interaction (face-to-face vs. online) affects prospective daters’ self-presentational efficacy, the degree of idealization they exhibit in their online profile, as well as the joint effects of these factors on their romantic self-esteem.

The Two-Component Model of Impression Management

Scholars have extensively studied cognitive and behavioral components of self-presentation in its offline form and developed models explaining and predicting self-presentation behavior, or impression management, as the two terms are generally used interchangeably (Leary & Kowalski, 1990). The two-component model of impression management (Leary & Kowalski, 1990), in particular, offers nuanced theoretical propositions describing motivations for engaging in impression management, and factors that promote, limit, and/or shape individuals’ self-presentation strategies. Although this model has been applied to self-presentation in online dating before (Toma & Hancock, 2010), its framework can be extended to explain how factors such as anticipated future interaction impact one’s self-presentational efficacy, the degree of idealization one exhibits in a dating profile, and the presenter’s self-esteem.
Chapter 5

The two-component model describes two distinct components of impression management: impression motivation and impression construction. Impression motivation is the degree to which people wish to control the impression others have of them. Impression construction comes into play once individuals are motivated to control the impression they may make. In the latter process, individuals decide about the self-presentational strategies to employ in order to affect others’ impressions of them. When online daters construct an online dating profile, they are likely to be highly motivated to control the impressions this profile conveys in order to attract a desirable romantic partner. As a result, online daters will engage in impression construction when they make their dating profile (see Ellison et al., 2006).

According to the two-component model, people will attempt to only make impressions which they believe they can live up to in successive encounters with the same individuals. Making an impression that cannot be sustained is not desirable because deviations between an initial and a subsequent self-presentation can be perceived as inconsistent or dishonest (see, e.g., DeAndrea & Wal ther, 2011). Expectations about future meetings thus affect initial impression construction behaviors. One factor which may impact one’s ability to make and sustain a positive impression is the mode of interaction, for reasons outlined in the hyperpersonal model of CMC (Walther, 1996; Walther 2007).

Computer-Mediated Communication and Impression Construction

According to the hyperpersonal model of CMC (Walther, 1996), CMC facilitates the presentation of one’s chosen impression by enhancing control over the messages one constructs about the self (Schouten, Valkenburg, & Peter, 2007). As a result, individuals can strategically display more positive, desirable versions of themselves online than in face-to-face interaction (see for review Walther, 2011). A number of sociotechnical affordances of CMC facilitate this process, in both the construction of a dating profile as well as in subsequent CMC (Walther, 1996). By affordances of CMC we mean the properties of CMC which enable, invite, and facilitate certain behavioral strategies, in this case for self-presentation. The hyperpersonal model offers four such affordances. First, online self-presentations are editable. One can more readily adjust a self-presentation message by re-writing it until it appears how one most wants it. Second, the asynchronous nature of CMC affords users more time to think about and deliberately create a desired self-presentation than more spontaneous face-to-face self-presentation.
Third, CMC offers reduced cues relative to face-to-face communication. Through their choices of content and style, individuals can maximize desired qualities that they prefer to make salient and minimize undesired qualities that would be salient in offline encounters. For example, one may select the most desirable photograph to display, diminishing the presence and/or salience of unflattering appearance qualities (Toma & Hancock, 2010). Fourth, editability and asynchronicity in CMC facilitate the allocation of greater cognitive resources to impression construction. In face-to-face self-presentation, a presenter needs to divide attention between controlling non-verbal and verbal self-presentation behavior as well as monitoring the responses of others. In contrast, CMC separates sender from receiver, allowing its user to focus entirely on message construction. Research has substantiated that the more mindfully individuals make use of these affordances, the more they edit their messages, which subsequently become more appealing to others (Walther, 2007).

The hyperpersonal model has been used to predict that in online dating, singles construct highly desirable impressions, or even distorted ones, because impression motivation is high and the affordances of CMC offer great control over self-presentations (Toma & Hancock, 2010). Daters believe that CMC offers the means to create more alluring impressions than face-to-face communication (Ellison, Hancock, & Toma, 2012). The belief that one can delay face-to-face encounters, while sustaining desirable impressions through CMC, even prompts knowingly inaccurate profile construction (Ellison et al., 2012). The imminence of an eventual face-to-face encounter, however, may limit the degree to which individuals exploit the hyperpersonal affordances of CMC to construct idealized self-presentations.

**Anticipated Future Interaction – A Constraint on Impression Construction**

Both the notions that daters aim to construct a highly desirable self-presentation online, and that expectations about future interaction can constrain the degree to which they will exploit the affordances of CMC to construct an idealized dating profile, are consistent with the two-component model. As successful online dating will consist of consecutive interactions, online daters are expected to only communicate self-presentations that they believe they will be able to sustain in future encounters. Inconsistencies in self-presentations may lead to derision or deprecation by others, and obviate the social benefits of having made a desirable impression at all. The desirability that online daters try to convey through their
dating profiles should therefore depend on their expectations about their ability to live up to such idealized images in subsequent interactions with potential dates.

The projected likelihood that, in future interactions, one can live up to an idealized impression afforded by CMC may depend on the degree to which the mode of future interaction enhances or constrains one’s ability to maintain the initial impression. Due to the affordances of CMC for conveying more idealized impressions, the presenter is likely to apprehend that she can sustain an idealized impression that she initially presents on an online profile during subsequent CMC interaction. As a result, profile makers who anticipate continued CMC interaction may feel licensed to idealize their self-presentations in the first place anticipating that they may continue to do so in the second place.

Face-to-face interactions, in contrast, afford less control over self-presentation. As a result, the presenter is likely to apprehend that a highly controlled and idealized impression that is initially presented on an online profile cannot be sustained through subsequent face-to-face interaction. As a result, she may moderate the idealization of the initial self-presentation she communicates through the dating profile if she anticipates face-to-face interaction. Anticipated face-to-face interaction thus reduces the degree to which a dater feels able to sustain an idealized impression that she can convey through a dating profile. In conclusion, one’s decisions about self-presentational strategies can be expected to be based on the perceived potential to achieve self-presentational goals. The mode of further communication affects the probability of success of a more idealized, or a more muted, initial impression.

**Anticipated Future Interaction, Self-Efficacy, and Self-Presentation Content**

The degree to which we feel we can make the desired impression on others can be conceptualized as self-presentational efficacy (Schlenker & Leary, 1982). This construct is derived from the term self-efficacy, which is the evaluation of one’s own ability to succeed in a particular action to produce a desired outcome (Bandura, 1977). According to Bandura, self-efficacy is a domain-specific construct. Self-presentational efficacy represents the extent to which people believe that they can successfully produce impression-relevant reactions in general (Krämer & Winter, 2008; Schlenker & Leary, 1982) or in specific situations (e.g., exercise; Martin & Brawley, 2002).
The present study deals with self-presentational efficacy regarding online self-presentation on a dating profile. The defining characteristic of self-presentational efficacy during dating profile construction is whether the dater believes that her dating profile will successfully convey the impression to a prospective date that she is an attractive partner. Based on the preceding discussion, the degree of self-presentational efficacy in profile construction should depend on the degree to which the mode in which future interaction is expected to take place affords sustaining this desired impression. As continued CMC interaction offers greater affordances for impression management than anticipated face-to-face communication, we hypothesized:

H1: Anticipated future CMC interaction results in greater self-presentational efficacy than anticipated CMC interaction.

The degree to which an individual expects that she can convey a desirable impression should lead to behaviors reflecting these expectations. The CMC literature provides several examples of contexts and behaviors in which users who seek to gain favor with others employ language and content strategies to do so, including systematic differences in goal-directed language content and style marshaled to achieve interpersonal goals (e.g., Thomson, Murachver, & Green, 2001; Walther, Loh, & Granka, 2005; Walther, Van Der Heide, Tong, Carr, & Atkin, 2010). Thus, if online daters have high self-presentational efficacy when constructing their profile, this should affect the content they select and the degree of idealization they display in their profile. This leads to the following hypothesis:

H2: Self-presentational efficacy is positively related to the idealization of self-presentation content.

Self-Presentation Effects on Self-Esteem

The two-component model of impression management not only describes factors that affect impression construction. It also outlines effects of the impressions individuals construct on their own self-esteem. The two-component model suggests that people’s self-esteem is enhanced when they perceive themselves as making a good impression on others. Leary and Kowalski (1990) argue that the way one presents the self to others becomes integrated into the identity of the presenter. As a result, positive self-presentations increase self-esteem, whereas negative self-presentations decrease self-esteem, as experimental evidence has shown (Jones, Rhodewalt, Berglas, & Skelton, 1981).
The relationship between online self-presentation behaviors and subsequent self-images has received some attention in CMC research. For example, individuals who were asked to present themselves as more or less extraverted in a publically-accessible online venue later rated themselves as being more extraverted or less extraverted, respectively (Gonzales & Hancock, 2008). Furthermore, in a study in which participants were asked to gain favor or disfavor with an online conversational partner, the more agreement and positivity individuals expressed to their partners the more positively their own attitudes and perceptions became (Walther et al., 2010). Conversely, the more CMC users expressed disagreement, opinion differences, and rejection of their partners’ preference, the more the CMC users shifted their own opinions about the conversation topic. These patterns suggest that, in the present context, describing the self as a desirable romantic partner on a dating profile affects the degree to which the dating person sees herself as a desirable romantic partner. Seeing oneself as a desirable romantic partner is usually defined as romantic self-esteem (Harter, 1988). Therefore, we expected:

H3: The idealization of self-presentational content is positively related to romantic self-esteem.

The theoretical relationships specified, as well as the interrelations between the variables that the three hypotheses imply, lead to the following hypothesis:

H4: Anticipated future CMC interaction, as opposed to anticipated future face-to-face interaction, exerts a positive indirect effect on self-esteem through self-presentational efficacy and idealized self-presentation.

Method

Our study involved a randomized experiment in which heterosexual female participants constructed an online dating profile and were asked several questions about this profile. Participants were told that they would converse, in the future, with a prospective male date either via CMC or face to face.1

1 The experiment was originally based on a 2 (anticipated future interaction: face-to-face vs. CMC) x 2 (forewarning measurement height and weight: yes vs. no) between-subjects design. The second factor was manipulated for purposes outside the scope of the current study. Participants were either told or not told that their weight and height would be measured after they finished constructing their profiles. The forewarning condition was included as a covariate in the analyses reported below, but did not have any effects on outcomes relevant to this investigation (self-presentational efficacy, idealized self-presentation or romantic self-esteem). The factor also did not moderate the relationships between the different variables.
Participants

One hundred single, heterosexual women participated in the experiment. Due to differences in how women and men present themselves on dating profiles, as well as the different impressions they desire to make (e.g., Hall et al., 2010), it was not possible to conduct the experiment with both men and women using the same measures of idealized self-presentation. We therefore chose to conduct the current study among heterosexual women only. Participants were rewarded with 5 euro or course credit. Five participants’ data were excluded from the final sample because they were suspicious of the goal of the study, or did not meet screening criteria. Three others’ withdrawals indirectly reinforced the plausibility of the ostensible purpose of the research: One reported that she would not be able to meet a date in person because she would be away the next few months, and another two said they were not interested in meeting a potential date. The final sample thus consisted of \( N = 92 \) female participants, which offers sufficient power (.80) to detect a medium effect size at a significance level of .05 (Cohen, 1992).

Participants’ ages ranged from 18 to 41 (\( M = 21.8, SD = 3.4 \)). In terms of ethnicity/race, a majority (81.5%) labeled themselves as “white.” Most participants (78.3%) reported no experience with online dating, 9.8% had made a profile but never had any interaction with people through a dating site, 3.3% had interacted online with a prospective date but had not been on a date face-to-face, and 8.7% had been on a face-to-face date with someone they met through online dating.

Procedure

Participants reported to a research lab individually. After obtaining their informed consent, a researcher randomly assigned participants to one of the experimental conditions. The experimenter provided the participants with the following information verbally:

We are interested in the process of online dating. In the current study, we ask you to make a dating profile. This profile contains a description of the man who you may potentially like to meet and some information about you, such as your age, study program, height, weight, hobbies, interests and personality.\(^2\) In three to six weeks, our computer program will make a match between our male and female participants. If a match has been made, which will usually be the case, we will exchange the dating profiles between you and your match and will organize a...

\(^2\) In the forewarning of measurement of height and weight condition a scale and measuring tape were present and participants were also told “at the end of the session, your height and weight will be verified.”
Participants used a laptop computer to complete a dating profile consisting of a range of open- and closed-ended questions. These questions resembled the profile components of a popular online dating site in the country where this research took place. After completing the profile, participants responded to questions about the profile content they had generated in order to measure their self-presentational efficacy. Participants then completed a measure of romantic self-esteem, and summoned the experimenter when they were finished. The experimenter subsequently asked participants to fill out a final form containing a manipulation check, a probe for suspicion, and demographic questions. The researchers debriefed participants collectively, through e-mail, when all data collection was complete. Procedures were approved by the human subjects research ethics committee of the university where the study was conducted.

Measures

**Manipulation check.** A manipulation check verified whether participants anticipated a CMC or face-to-face meeting with a prospective date congruent with the condition to which they were assigned. It asked participants to select among three options to complete the following sentence: “If the computer finds a match between me and a man (a) a face-to-face meeting will take place, (b) a chat session will take place, or (c) I wasn’t told.”

**Idealized self-presentation.** As part of building their dating profile, participants completed items that asked them to rate themselves on thirteen specific attributes. For each attribute, participants were asked to complete the sentence “in comparison to other women my age I am...” These attributes included four items related to physical qualities (e.g., sexy, pretty, attractive) and nine items reflecting personal qualities (e.g., intelligent, caring, adventurous). The response options ranged from 1 (a lot less than others) to 10 (a lot more than others). Because these items each represented positive qualities, higher mean scores on these characteristics, as a composite, reflected greater idealization. Factor analysis indicated that these items comprised a single dimension which explained 42.4% of the variance, with a Cronbach’s $\alpha = .84$ for the items as a set, $M = 6.71$, $SD = 0.90$.

**Self-presentational efficacy.** The research employed a 13-item measure to assess self-presentational efficacy. This measure was constructed especially for the purpose of the current study following procedures outlined by Bandura (2006).
as, to our knowledge, no adequate measure existed. Participants rated how they thought a potential match would see them with respect to each of the 13 positive traits they had previously used to describe themselves on their profile (“When a potential match sees my profile, I think he will see me as...”). Responses could vary between 1 (not at all) and 10 (very much). Higher mean scores on these positive characteristics, as a composite, reflected greater self-presentational efficacy. The measure led to a Cronbach’s $\alpha = .90$, $M = 6.11$, $SD = 1.10$. Factor analysis indicated that these items comprised a single dimension which explained 51.4% of the variance.

**Romantic self-esteem.** To measure romantic self-esteem, we asked participants to complete a shortened, four-item version of the romantic appeal subscale of Harter’s (1988) self-perception profile, as translated and adapted by Valkenburg, Peter, and Schouten (2006). An example of an item is “Others fall in love with me easily,” to which responses could range from 1 (disagree entirely) to 5 (agree entirely). Higher scores reflected greater romantic self-esteem, Cronbach’s $\alpha = .71$, $M = 3.08$, $SD = 0.66$. Factor analysis indicated a unidimensional scale which explained 54.6% of the variance.

## Results

Before testing the hypotheses, we examined whether there were any differences between the four conditions of the original experimental design (see Footnote 1) regarding participants’ background characteristics. Chi-square analyses showed that the conditions did not differ significantly with regard to race/ethnicity, $\chi^2(6, N = 92) = 6.054, p = .417$, or dating experience, $\chi^2(9, N = 92) = 6.308, p = .709$, of the participants. All participants correctly indicated the mode of future interaction they expected on the manipulation check, therefore the manipulation was deemed successful. In addition, we calculated zero-order correlations among self-presentational efficacy and idealized self-presentation, $r = .737$, $p < .001$, self-presentational efficacy and romantic self-esteem, $r = .504$, $p < .001$, and idealized self-presentation and romantic self-esteem, $r = .541$, $p < .001$. The significance of these correlations provides some initial support for the hypotheses.

Due to the continuous nature of the outcome variables, and the mix of continuous and categorical predictor and control variables, a series of regression analyses tested the hypotheses. Hypothesis 1 predicted that individuals would...
experience more self-presentational efficacy when they anticipated a subsequent CMC conversation as opposed to a face-to-face conversation. A regression analysis tested the difference on this outcome due to the two conditions. Anticipated future CMC interaction resulted in significantly more self-presentational efficacy relative to anticipated face-to-face interaction, $\beta = .415, B = .907, SE = .212, p < .001$. Results supported H1.

The second hypothesis predicted that greater self-presentational efficacy would lead dating profile creators to exhibit more idealized self-presentation in their depiction of themselves in comparison to creators who reported less self-presentational efficacy. Regression analysis was conducted using mode of anticipated future interaction as a control variable. Results confirmed the positive relationship between more idealized self-presentation and greater self-presentational efficacy, $\beta = .805, B = .659, SE = .138, p < .001$. The second hypothesis was supported.

Hypothesis 3 predicted that the more idealized an individual’s self-presentation was, the higher her romantic self-esteem would be. Regression analysis again controlled for anticipated mode of interaction, and the results confirmed the hypothesized positive relationship between idealized self-presentation and romantic self-esteem, $\beta = .513, B = .376, SE = .118, p < .001$, supporting H3.

The fourth hypothesis specified an indirect effect of anticipated mode of interaction on romantic self-esteem through self-presentational efficacy and idealized self-presentation. The tests of indirect effects employed PROCESS for SPSS model 6 with 10000 bootstrapped samples (Hayes, 2012). The indirect effect of anticipated CMC conversation, through self-presentational efficacy and idealized self-presentation (respectively), on self-esteem was positive and significant, $B = .178, SE = .072$ (Bt bca 95% CI: .344/.061). The total effect was also significant, $B = .334, SE = .136, p = .017$. There was no additional direct effect of anticipated future interaction mode on romantic self-esteem, $B = .156, SE = .136, p = .254$.

In addition, we tested an alternative mediational model of mode of anticipated interaction on romantic self-esteem, in which the order of the two mediators was reversed. In this way, we tested if the effect of mode of anticipated interaction affected romantic self-esteem through idealized self-presentation first and then through self-presentational efficacy instead of the other way around as hypothesized. This indirect effect of mode of anticipated future interaction through idealized self-presentation and self-presentational efficacy (respectively) was not significant, $B = .024, SE = .033$ (Bt bca 95% CI: .135/.012), offering further support for H4.
Discussion

Research on self-presentation in online dating has speculated on the effects that users’ anticipation of a face-to-face meeting has on the degree of idealization on their dating profiles (e.g., Toma et al., 2008). Descriptive research about online self-presentation has assumed that the anticipation of future face-to-face interaction limits idealization whereas continued CMC interaction increases the degree to which people present themselves in an idealized way (e.g., Gibbs et al., 2006). Research has not, however, systematically investigated the actual effect of the anticipation of continued online interaction versus immediate face-to-face interaction on daters’ prospects for impression management.

The results of the current study indicate that the expectation about the mode in which future interaction will take place influences individuals’ perceptions of the potential to make more positive impressions in an initial online self-presentation. When anticipating CMC, as opposed to face-to-face interaction, women reported greater self-presentational efficacy, which in turn led them to communicate a more idealized self-presentation. This is assumed to occur as a result of users’ implicit understanding of the differences between these two modes and their affordances for continued impression construction. When individuals anticipate the use of CMC’s affordances to enhance self-presentations in subsequent interactions, they experience more liberty to construct an idealized initial self-presentation on a dating profile than when they anticipate face-to-face interaction. The results also show that the differences in the way individuals communicate about themselves in their profiles, in turn, affect their sense of their own desirability as a date. Relative to the anticipation of face-to-face interaction, the anticipation of CMC interaction increases romantic self-esteem by enhancing self-presentational efficacy and increasing idealized self-presentation.

The current study extends our understanding of online self-presentation in several ways. The study shows systematic effects of the mode of anticipated future interaction on the idealization of daters’ self-presentations. Rarely have previous studies directly investigated the impact of mode alternatives on self-presentational patterns. Other researchers have also suggested that individuals’ beliefs about their abilities to sustain an idealized self-presentation affect online self-presentation, or, more specifically, deception in online dating (e.g., Ellison et al., 2012). Support for those claims has remained speculative, however, based on
users’ retrospective explanations (Ellison et al., 2012) that may be rationalizations for having lied (see DeAndrea, Tong, Liang, Levine, & Walther, 2012).

Much of the dating deception research has proceeded as though a face-to-face date is the next step after seeing an appealing profile and making some initial connection with a prospective partner. Of course this need not be the case, and our experimental conditions only begin to capture the alternatives that some dating sites provide to subscribers for their transitional communication. The possibilities, according to one recent review, include asynchronous CMC, synchronous CMC, video chat, and even avatars (Finkel et al., 2012). Exploring the implications of these different alternatives for self-presentation processes and effects is an interesting venue for further research.

This study also adds nuances to our understanding about anticipated future interaction in CMC, and the growing literature on mixed-mode interactions. Although anticipation of future interaction within a single mode (CMC or face-to-face) has significant positive effects on relational communication (Walther, 1994), the effects of progression from one mode to another has seldom been studied. The limited research on how mode-switching affects interpersonal impressions and relational communication (Ramirez & Wang, 2008; Ramirez & Zhang, 2007) has not examined whether effects may have been set into motion by participants’ anticipation of the mode to which they knew they would switch. The present study suggests that the impressions individuals convey in mode-switching situations may be affected as much by the anticipated mode of interaction as by the mode in which they take place. The results show that, at least for heterosexual women who constructed an online dating profile, an anticipated mode-switch to face-to-face interaction leads to less self-presentational efficacy and less idealization in initial online dating profiles, relative to the anticipation of using CMC for future interaction.

As has been described previously, CMC between two persons can increase their liking and idealization of one another under certain conditions (Walther, 2011). The current study extends these findings by showing that the expectation of prolonged CMC, in comparison to switching directly from online to face-to-face communication, leads to idealized impression construction. This raises the question whether one dater’s profile, imbued with elements of an idealized impression construction, also leads to idealized impression formation among daters who may view the idealized self-presentation. Whether such encounters trigger reciprocation or skepticism would have important implications for relationships.
between individuals who get to know each other online. Online dating research seems to suggest that reciprocal idealization seems to be quite common: In Albright’s (2001) study of daters who initially met via CMC and whose face-to-face impressions did not match the ones they formed online, a majority of respondents reported that they had idealized, or “filled in the blanks’ incorrectly” (p. 152). The remainder indicated that their partners had misrepresented something or withheld something important about themselves.

Although these results may have mixed implications for the well-being of the relationship, they more clearly benefit the well-being of the individuals who develop more idealized profiles: Communicating a more idealized self-presentation to others increases one’s romantic self-esteem. Given that self-esteem is an important predictor of well-being (Schimmack & Diener, 2003), further investigation of the impact of online self-presentation on self-esteem is warranted. Dating is a social situation fraught with potential threats to self-esteem (or “face,” in the language of politeness theory; see Johnson, Roloff, & Riffe, 2004; Tong & Walther, 2011) due to potential rejection. Therefore, a more gradual switching from CMC may bolster the potential self-esteem-reducing effects of a disappointing face-to-face mismatch, although this possibility, too, warrants additional study.

The results of this study, like other recent research (Toma & Hancock, 2010), suggest that further research on online self-presentation may benefit from applying the two-component model of impression management (Leary & Kowalski, 1990) and the hyperpersonal model of CMC (Walther, 1996). The present study shows that some tenets of these two approaches, and their combination, can be applied to self-presentation on dating sites. The current application of these frameworks into theoretically and empirically inter-related aspects of cognition, behavior, and self-perception extends these frameworks beyond those in previous efforts. Like other studies, however; this research presented the anticipation of either CMC chat or face-to-face interaction as gestalt channels to the participants. As a consequence, we still do not know which specific affordances of anticipated CMC are most salient to the prospective daters who exploited the self-presentational potential in constructing their profiles. Was it the additional control over future message construction? Or was it the continued ability to mask certain qualities and maximize others? Investigating the impact of imagined and actual sociotechnological affordances of the different modes on self-presentational efficacy and the resulting self-presentation messages would be an interesting venue for further research.
The current study also indicates that self-presentational efficacy—the belief that one can make a desired impression on others—is an important predictor of self-presentation content. This finding is both consistent with and extends previous research on predictors of self-presentation content. For example, self-presentation content was formerly predicted by a more global assessment of self-presentational efficacy, that is, an individual’s belief in his or her capability of making a positive impression on others across situations, as an individual difference characteristic (Krämer & Winter, 2008). The current study shows that self-presentational efficacy is subject to systematic situational influences, including the mode of anticipated future interaction. Examining which other factors impact self-presentational efficacy would be an interesting venue for further research which may improve our understanding of why different individuals present themselves differently in different situations.

The current study was conducted in the context of heterosexual, single, relatively young women constructing online dating profiles. The theoretical framework described could also be applied to other contexts of online self-presentation and other populations. For example, similar processes and effects may occur among adolescents constructing social network site profiles, professionals in search of a job on a professional online network, and many other situations. The current study may thus offer both new ideas and a theoretical framework for research about the influences on, effects of, and processes underlying online self-presentation in face-to-face, CMC, and mixed-mode interactions.
Online Self-Presentation, Efficacy, and Self-Esteem

References


Chapter 5


Chapter 6

Summary and Main Conclusion
Summary and Conclusion

This dissertation aimed to investigate, with a multi-methodological approach, whether the use of social media affects self-views; through which processes these effects are mediated; and among which individuals and in which situations they may hold. Chapters 2-5 addressed these aims by focusing on how the use of social networking sites and dating sites impact self-objectification, desire for cosmetic surgery, body dissatisfaction, and romantic self-esteem. The findings in these chapters have a number of theoretical implications and may guide further research into the effects of social media use on self-views from a self-presentational perspective. In addition, the results have a number of implications for the well-being of adolescents and adults.

Main Findings

The empirical chapters of this dissertation all support the notion that the use of social media can impact individuals' self-views. Chapters 2 through 4 show effects of social network site use on users' focus on, evaluation of, and desire to change their bodies. The experiment described in Chapter 2 has shown that online self-presentation, as it would occur on social network sites, increases self-objectification among women, that is, it elevates their focus on the own physical attractiveness in comparison to other aspects of the self. This effect only occurred among women who had viewed objectifying media content shortly before.

Chapter 3 has demonstrated that more frequent social network site use predicts increases in adolescents' desire to undergo cosmetic surgery. This effect was mediated by increased investment in appearance. As described in Chapter 4, social network site use also led to body dissatisfaction, both among adolescent boys and girls. We expected this effect to be mediated by appearance training, that is, the reinforcement and comments adolescents receive from friends regarding the achievement of sociocultural body ideals. Social network site use did predict appearance training. However, appearance training did not predict body dissatisfaction. Therefore, appearance training did not mediate the effect of social network site use on body dissatisfaction. In contrast to our expectations, the relations between social network site use and the body-related self-views investigated in Chapter 3 and 4 did not differ between boys and girls.

Chapter 5 suggests that activities on dating sites can also affect a particular form of self-view: romantic self-esteem. The study in this chapter showed that the extent to which online daters saw themselves as attractive romantic partners or dates was influenced by the extent to which they idealized the self as an attractive
romantic partner on their dating profile. Daters’ idealized self-presentation, in turn, was affected by their perceived self-presentational efficacy, that is, the degree to which they expected to make a positive impression on a potential date. Self-presentational efficacy, finally, depended on the mode of anticipated future interaction. When daters expected to interact with a potential date in a computer-mediated setting in the future, their self-presentational efficacy was higher than when they expected to interact with a potential date in a face-to-face setting. In this way, relative to anticipating face-to-face interaction, anticipating interaction in a computer-mediated setting increased dater’s romantic self-esteem by augmenting their self-presentational efficacy and, as a result, their idealized self-presentation.

Theoretical Implications, Limitations, and Suggestions for Further Research

As outlined in the introduction, this dissertation aimed to contribute to knowledge about social media effects on self-views. The findings inform theorizing about the effects that the use of social media may have on self-views and, at the same time, raise a number of new questions for further research. These theoretical implications and suggestions for further research will be outlined in the subsection Social Media and Self Views. In addition, the various findings provide a number of explanations of why such effects of social media use on self-views may come about and which mechanisms may underlie these effects. The subsection Underlying Processes explicates what these findings mean for our understanding of the effects of social media on self-views. Finally, while the results were inconclusive in identifying individual differences in the effects of social media on self-views, they do offer ideas about the situations in which the effects of social media use on self-views may be the strongest. In the subsection Individual and Situational Difference Factors, it will be described what the findings imply in terms of the boundary conditions of the effects of social media on self-views.

Social Media and Self-Views

Both the longitudinal survey studies and experiments in this dissertation have demonstrated that social media use can affect views of the self and the body. The dissertation thereby extends and advances existing research on social media effects on self-views which, particularly in the area of self-views related to physical appearance, consists mainly of correlational studies (e.g., Tiggemann & Miller, 2010; Tiggemann & Slater, 2013; Vandenbosch & Eggermont, 2012). The dissertation
extends this body of research because it points out numerous new, hitherto scarcely studied effects of social media use, notably on desire for cosmetic surgery (Chapter 3) and romantic self-esteem (Chapter 5). The dissertation advances the existing body of research because it demonstrates, through its multi-methodological approach, effects of social media use on self-views in a more internally valid way than it was done before. Overall, the dissertation thus makes the case that the effects of social media use cannot be understood fully without focusing on what this use does to the users’ self-views.

The focus on the effects of social media use on self-views that this dissertation has established is important for at least three reasons. First, much previous research on the effects of social media has dealt with the consequences of social media use on concepts related to sociality, for example user’s friendship formation, their closeness to friends, or their relationship quality (for reviews, see e.g., Peter & Valkenburg, 2013; Valkenburg & Peter, 2009). This predominant perspective of previous research is plausible given the interpersonal character of social media. This dissertation, however, clearly suggests that the interpersonal character of social media is also crucial for effects on self-views. A stronger focus on these effects in future research is thus very much needed.

Second, the focus on the effects of social media on self-views links communication research with research on face-to-face self-presentation. This research has shown that face-to-face self-presentation affects self-views (e.g., Leary and Kowalski, 1990; Schlenker, Dlugolecki, & Doherty, 1994; Tice, 1992) and has helped specify some of the underlying processes investigated in the dissertation. At the same time, the dissertation, with its background in communication research, contributes to research on the effects of face-to-face self-presentation on self-views. More specifically, the dissertation demonstrates that effects of self-presentation on self-views also occur when people use social media. The effects of self-presentation on self-views can thus occur even when the presenter’s self-presentation and the audience’s reception of the self-presentation are separated in space and time.

This dissertation also suggests that the effects of online and face-to-face self-presentation on self-views may differ. In Chapter 5, when users of a dating site expected to continue their self-presentation in a computer-mediated setting, their self-views following online self-presentation differed from the self-views of those who expected to continue their self-presentation face-to-face. This effect was attributed to the affordances of social media for online self-presentation, which offer the presenter more control over the self-presentation (e.g., editability, asynchronicity,
fewer cues) (Walther, 1996; Walther, 2007). A systematic investigation of whether and which of these affordances indeed lead online self-presentation to yield different effects on self-views than face-to-face self-presentation seems highly timely. In this context, it may also be fruitful to consider whether the different affordances of different social media platforms (e.g., Vine videos vs. Twitter) may elicit different effects on self-views.

Third and finally, the focus on the effects of social media on self-views is important in that it responds to recent calls from media effects scholars for more attention to expression (Pingree, 2007) or self-generated media effects (Valkenburg & Peter, 2013). The basic idea in these calls is that media effects may not be confined to the receiver of information that is created and transmitted by others (as assumed in most media effects theories and research). Media effects may also occur when people themselves create and send information, such as on social media, and when exactly these activities affect the creators and senders of this information. The findings of the experiments (Chapters 2 and 5) can be interpreted in terms of such expression or self-generated effects. In these experiments, participants constructed online profiles, which affected their self-views. No interaction with others took place in these experiments; it was just the creation of an online profile that already affected users’ self-views. Interestingly, in Chapter 2, the construction of a profile only influenced self-views of individuals who had just viewed objectifying content as it could be found in traditional media, but this traditional media content did not influence the outcome variable self-objectification directly. In line with a few studies that show that online self-presentation can affect identity-related self-views (Gonzales & Hancock, 2008; Walther et al, 2011), the findings in Chapters 2 and 5 suggest that a creation- or expression-oriented perspective may be promising for our understanding of what users’ activities on social media do with them.

**Underlying Processes**

The current dissertation has taken an indirect-effects approach to social media effects on self-views by investigating the mediating role of self-related variables (i.e., appearance investment, self-presentational efficacy and idealized self-presentation) and other-related variables (e.g., appearance training). In line with scholars who have argued that media effects are typically not direct but mediated (Holbert & Stephenson, 2003; Valkenburg & Peter, 2013), this dissertation also yields evidence for indirect effects of social media on self-views. The findings of this dissertation particularly provide evidence for the mediating role of self-related
variables (i.e., appearance investment, self-presentational efficacy and idealized self-presentation). By contrast, the other-related variable studied in this dissertation, appearance training, did not act as a mediator.

In terms of self-related variables, this dissertation suggests that self-presentation, notably in terms of physical appearance, deserves attention when we try to understand the effects of social media, in particular social network sites, on self-views. On social network sites, there is an emphasis on users’ physical attractiveness (Ringrose, 2011; Siibak, 2009). In line with what earlier correlational research has shown (Meier & Gray, 2013; Vandenbosch & Eggermont, 2012), the effects of social network site use found in the dissertation suggest that users are aware of the importance of looking good on such sites. Specifically, as a result of social network site use, adolescents were more likely to invest in their appearance cognitively and behaviorally (Chapter 3) and received appearance training from others (Chapter 4). Moreover, Chapter 2 suggests that, under certain circumstances, just presenting the self on a public profile can trigger a focus on one’s own physical appearance.

Critics of social network sites have claimed that such sites stimulate an unhealthy obsession with the self, particularly with the body and appearance (Twenge, 2009). While the findings of this dissertation do not directly support such broad generalizations, they do point to the possibility that a focus on physical appearance with regard to self-presentation on these sites may be an important factor in explaining adverse effects of the use of social network sites. This topic clearly awaits more study in future research.

This dissertation’s findings about the processes that underlie the effects of social media use on self-views also suggest that it may be beneficial to refine our conceptualization of reactions of others. Previous research has looked at this concept typically in terms of reactions that people actually receive from others on their self-presentations (Valkenburg, Peter & Schouten, 2006; Walther et al., 2011). Valkenburg et al. (2006), for example, have found that feedback from others explained changes in social self-esteem as a result of social network site use. Similarly, an experimental study by Walther et al. (2011) has suggested that reactions from others on one’s online self-presentation may affect the extent to which people adjust their self-views to their self-presentation. This dissertation has built on this work, but it was unable to corroborate the role of reactions from others as an explanation of why the use of social media affects self-views (Chapter 4). This one non-finding does not discard that reactions from others that people actually receive are important in explaining why social media affect self-views.
However, the dissertation also suggests that it may be useful to more strongly consider the reactions that individuals expect to produce as explanations of why social media use affects self-views.

Chapter 5, for example, has demonstrated that the extent to which online daters expected that they would successfully produce a favorable impression among prospective dates could explain effects on daters’ self-views. The more online daters who presented the self on an online dating profile believed that they would make the impression that they were attractive romantic partners, the more they subsequently viewed themselves as attractive romantic partners. The actual reactions that daters may typically receive on a profile were thus absent in this experiment and yet daters’ self-views changed. This finding strongly points to the possibility that the effects of social media use on self-views may at least partly be due to users’ anticipation of the future reactions from others that their self-presentation may elicit.

The notion that our behavior is influenced by how we expect others to see us has been put forward in several influential theories, notably in symbolic interactionism (Cooley, 1902; Mead, 1934) and in theories of self-presentation (Baumeister, 1982; Leary & Kowalski, 1990). In this context, the findings concerning the role of users’ anticipation of others’ reactions is closely related to Cooley’s (1902) looking-glass self concept. According to Cooley (1902), a person imagines how s/he appears to another person and the reaction of this other person. These processes contribute to the development of his/her self.

When using social media, users likely imagine how they will appear to others, for example, when crafting or modifying their profiles on a social network or a dating site. Moreover, when using social media, users also seem to take into account the expected reactions of others, a notion suggested by Chapter 5. Finally, when using social media, people’s self views seem affected, as this dissertation has shown. Given these parallels and, more generally, the inherently interpersonal nature of social media, with their actual and imagined audiences, it seems theoretically promising to think of reactions of others more strongly along the lines of imagined reactions in addition to actual reactions and conceptualize processes underlying the effects of social media on self-views accordingly.

Individual and Situational Difference Factors

Recent theorizing and research on media effects has emphasized that media effects are not universal, but likely depend on individual and situational
difference factors (e.g., Holbert & Stephenson, 2003; Kingston, Malamuth, Fedoroff, & Marshall, 2009; Valkenburg & Peter, 2013). Accordingly, this dissertation has investigated whether individual difference factors, such as gender, or situational variables, such as exposure to other media content, change the effects that the use of social media has on self-views. The results were mixed. While there was evidence for the influence of situational factors, the current dissertation did not identify any individual difference effects of social media use on self-views. However, the investigation of individual difference factors remained limited to gender in this dissertation.

There may be at least two reasons why we did not find the expected moderating effects of gender. First, the operationalization of gender was relatively crude. Essentially, gender was operationalized as a dichotomy between females and males, which was supposed to capture the culturally defined differences between femininity and masculinity. Future research should try to capture such differences by also allowing for within-gender differences. Recent research on the effects of sexual media content, for example, has shown that concepts such as hypermasculinity and hyperfemininity – the adherence to stereotypical role patterns, that is – may be powerful and relevant individual difference factors in media effects (e.g., van Oosten, Peter, & Boot, in press). A second explanation of the absence of gender effects has to do with the fact that gender effects were only studied among adolescents (see Chapters 3 and 4). Gender identity is still developing in adolescence, certainly among younger adolescents. Possibly, this unfinished process may have hampered the influence of gender as an individual difference factor.

Given the scarcity of research on the effects of social media on self-views and the dominant theoretical role of gender in theory (Bussey & Bandura, 1999; Cross & Madson, 1997; Fredrickson & Roberts, 1997), gender seemed to be the individual difference factor of choice. However, it may be that other individual difference variables mentioned in theory, such as self-monitoring, self-consciousness, and internalization of sociocultural body ideals (Dittmar & Howard, 2004; Doherty & Schlenker, 1991; Henderson-King & Henderson-King, 1997), may be more promising choices in future research.

In contrast to individual difference factors, we did find situational difference factors impacting the effects of social media on self-views. Chapter 2 demonstrated that whether an activity as it may happen on a social network site affected women’s self-objectification depended on whether they had been exposed to objectifying media content. Chapter 5 showed that when online daters expected that they...
would interact with a potential date through CMC, they reported higher romantic self-esteem than when they expected direct face-to-face interaction. Anticipated mode of future interaction was not technically modeled as a moderator in Chapter 5. Experimentally manipulating dating site use (yes/no or frequency) together with anticipated future interaction while keeping all other factors constant proved difficult and was likely to create external validity problems. After all, creating a profile while anticipating future interaction with a potential match when not engaging in online dating does not occur in real life. Despite this shortcoming, it still seems plausible to assume that the effects of dating site use on romantic self-esteem are shaped by whether daters anticipate to interact with a date in a face-to-face or in a computer-mediated text-based chat setting. Chapter 5 does show that when daters do use dating sites, the romantic self-esteem they report after portraying themselves on a dating profile depends on the anticipated mode of future interaction. Therefore, the results of Chapter 5 may be interpreted as evidence of the influence of a situational difference variable.

The main conclusion from the findings in Chapters 2 and 5 is that, when studying the effects of social media use on self-views, it is important to consider the immediate media and (anticipated) future communication environment of users. In terms of users’ immediate media environment, Chapter 2 has shown that an objectifying advertisement, as it could have appeared in a magazine, allowed for the occurrence of an effect of social network site use activity on self-objectification. Given the current prevalence of media multitasking as predominant form of media use among young people (e.g., Moreno et al., 2012), it stands to reason that the moderating effect of a situational difference factor as identified in Chapter 2 may be much more common than reflected in the literature. The specific workings of such moderating effects are currently poorly understood. In Chapter 2, the situational factor – exposure to objectifying media content – was applicable and relevant to self-presentation on social network sites, but it is likely that non-applicable, irrelevant content – an advertisement for gardening products, for example – would not have impacted the effect on self-views. In order to understand the moderating effects of people’s immediate media environment on the influence of social media on self-views better, such boundary conditions deserve more attention.

In terms of the anticipated future communication environment of the users of social media, Chapter 5 has shown that the expectation of computer-mediated future communication led to greater romantic self-esteem among online daters than the expectation of future communication in a face-to-face setting. Whether
communication through social media stays in a purely computer-mediated setting or whether it migrates to, or is supplemented by, a face-to-face setting may thus have crucial implications for the occurrence and strength of effects of social media use on self-views. In line with Walther’s (1996) hyperpersonal theory, it stands to reason that the effects of social media use on how one sees the self remain the strongest when users expect future communication to also take place in a computer-mediated setting. In such a setting, users have more liberty to create a self-presentation less conform the impression they expect to make on others in face-to-face situations. The nature of the self-presentation affects presenters’ self-views – as this dissertation has shown, and may especially affect their self-views if the self-presentation differs greatly from the way a person sees the self based on face-to-face interactions. By contrast, when users expect future communication to take place in a face-to-face setting, these effects of social media use on self-views should be less distinct. In such a setting, users are more restricted in their self-presentation, which reduces the chance of self-presentations little resembling the offline self, and, therefore, limits effects on how one sees the self. If these predictions are correct, we should find the strongest effects of social media use on self-views among those who expect that their future communication with their contacts from the social media will be computer-mediated. Conversely, the effects should be the weakest among users of social media who anticipate that their future communication with their contacts from the social media will predominantly be face-to-face.

The findings of the dissertation provide new insights into the role of situational difference factors in the effects of social media. However, it is important to note that there may be many other potentially influential situational difference factors that have not been studied. One crucial situational factor may be the characteristics of the audience. Above, it has been outlined how important reactions of the audience, both actual and expected, may be for explaining why effects of social media on self-views emerge. These audience reactions are mediators as they result from individuals’ use of, and self-presentation on, social media. Audience characteristics, in contrast, may explain under which conditions effects of social media on self-views emerge or are the strongest, and are thus moderators or, in the terminology of this dissertation, situational factors.

Audience characteristics, may include the size of audience, whether one knows the audience, how close one is to the audience (e.g., family, friends, colleagues, strangers), and how similar one feels to members of the audience. As
several social scientific theories have suggested (Baumeister & Hutton, 1987; Leary & Kowalski, 1990), the characteristics of the audience determine an individual’s self-presentation. For self-presentation on social media this means that, depending on the audience, users of social media may present themselves very differently, which, in turn may affect their self-views differently. For example, self-presentation to a larger group may elicit more public commitment (Schlenker & Leary, 1982) to the self-presentation and, as a result, stronger effects on self-views. Such issues present exciting and fruitful questions for future research that will advance our understanding of the situational boundaries of the effects of social media on self-views.

**Implications for Well-Being**

Next to important implications for our theoretical understanding of social media effects on self-views, the current dissertation offers a number of practical implications, notably regarding the effects of social media use on well-being. An important implication offered by the current dissertation is that social network site use may have unfavorable effects on adolescents’ views of their bodies. More specifically, social network site use increased appearance investment and body dissatisfaction among adolescent girls as well as boys. It is crucial to note that both body dissatisfaction and appearance investment have been identified as important risk factors for mental health problems, such as eating disorder symptoms and depression and are negatively related to well-being among adolescents (e.g., Cattarin & Thompson, 1994; Impett, Henson, Breines, Schooler, & Tolman, 2011; Mond, Van den Berg, Boutelle, Hannan, & Neumark-Sztainer, 2011). Furthermore, appearance investment goes hand in hand with activities that are sometimes costly in terms of time, energy, and money and may also go at the expense of academic achievement, relationships, and physical health (Lamarche & Gammage, 2012; Ricciardelli & McCabe, 2003; White & Halliwell, 2010). As shown in Chapter 3, social network site use led to desire for cosmetic surgery through appearance investment.

Although the effects are relatively small and the exact processes and conditional factors are still unclear, this dissertation shows that the potential negative effects of social network site use on adolescents’ body-related self-views should not be neglected. This conclusion seems even more timely considering that the effects were found among adolescents. Body image is an important aspect of adolescent development (Markey, 2010) and it stands to reason that negative effects experienced in adolescence may solidify and translate into bigger problems in adulthood.
Although the negative effects of social network site use on adolescents’ body-related self-views are striking, it is important to emphasize that the dissertation also suggests potentials for positive effects of social media. As Chapter 5 has shown, a positive self-presentation increased people’s self-esteem. This finding is in line with other research on the positive effects of social media use on self-esteem (e.g., Gonzales & Hancock, 2008) and raises many interesting questions for future research. For example, does the positive effect of online presentation on self-esteem apply to everybody or is there a rich-get-richer phenomenon (Kraut et al., 2002) taking place? That is, do all individuals present themselves positively on social media or do especially those with a high self-esteem present the self more positively which further increases their self-esteem? To answer such questions is beyond the scope of this dissertation, but shows how relevant its findings may be for our understanding of what social media mean for people’s well-being.

Some 20 years ago, when individuals increasingly started to use the internet, only few people foresaw the far-reaching changes it would elicit in how we relate to each other. Some ten years ago, when people increasingly used the internet as a social medium, only few people foresaw the far-reaching changes it would elicit in how we see ourselves. Today, we start to understand that what we do on the internet, particularly on social media, has effects on our self-views. This dissertation has made an important step in showing some of these effects of social media on how we see ourselves and our bodies.
Chapter 6

References


Summary and Conclusion


Nederlandse Samenvatting
(Dutch Summary)

Dankwoord
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Curriculum Vitae

Eén factor die mogelijk het zelfbeeld beïnvloedt, is de media (Aubrey, 2006; Clay, Vignoles, & Dittmar, 2005; Grabe, Ward, & Hyde, 2008; Groesz, Levine, & Murnen, 2002). Onderzoek naar media-effecten op zelfbeeld heeft zich tot nu toe vooral gericht op de invloed van massamedia, zoals de effecten van tijdschriften en televisieprogramma’s waarin een (onhaalbaar) schoonheidsideaal centraal staat (o.a., Aubrey, 2006; Grabe et al., 2008; Groesz, et al., 2002). In de afgelopen twintig jaar is het mediailandschap echter sterk veranderd. Een belangrijke verandering is de opkomst van sociale media. Sociale media, zoals sociale netwerksites (o.a., Facebook, Twitter, Instagram) en datingsites, zijn online applicaties die het creëren en uitwisselen van inhoud met anderen mogelijk maken (Kaplan & Haenlein, 2010). Deze sociale media zijn inmiddels razend populair (Duggan & Smith, 2013). Nederlandse adolescenten brengen gemiddeld 42 minuten per dag door op sociale netwerksites (SPOT, 2012). Online daten is eveneens snel in populariteit toegenomen en is onder volwassenen een steeds vaker voorkomende manier waarop mensen een partner ontmoeten (Centraal Bureau voor de Statistiek, 2011; Dutton, Helsper, Whitty, Buckwalter, & Lee, 2008).

Het effect van massamedia op zelfbeeld is reeds aangetoond, maar het effect van sociale media op zelfbeeld is een nog relatief onderbelicht onderzoeksgebied. Invloeden van sociale media op zelfbeeld zijn echter theoretisch plausibel. Op sociale media zoals sociale netwerksites en datingsites presenteren gebruikers zich aan anderen via een online profiel. Theorieën over offline, face-to-face zelfpresentatie stellen dat hoe mensen zichzelf aan anderen presenteren een belangrijke invloed
heeft op hoe zij zichzelf zien (Baumeister, 1982; Leary & Kowalski, 1990). Deze invloed van offline zelfpresentatie op zelfbeeld wordt ondersteund door empirisch onderzoek (bijv. Schlenker, Dlugolecki, & Doherty, 1994; Tice, 1992). Het is goed mogelijk dat ook online zelfpresentatie, en daarmee ook het gebruik van sociale media, waarin zelfpresentatie een belangrijke rol speelt, invloed heeft op zelfbeeld.

**Doel en Focus van dit Proefschrift**

Inderdaad geven een aantal onderzoeken een eerste indicatie dat het gebruik van bepaalde vormen van sociale media gerelateerd is aan relevante aspecten van het zelfbeeld. Het gebruik van sociale netwerksites gaat bijvoorbeeld samen met een grotere focus op het eigen uiterlijk (Vandenbosch, & Eggermont, 2012), minder tevredenheid met het eigen uiterlijk (Tiggeman & Miller, 2010; Tiggeman & Slater, 2013), maar ook met meer zelfvertrouwen (Gonzales & Hancock, 2011; Kim & Lee, 2011; Valkenburg, Peter, & Schouten, 2006). Onderzoek op dit gebied is echter nog relatief schaars. Zo is er bijvoorbeeld weinig kennis over de processen die ten grondslag liggen aan de mogelijke effecten van sociale media op zelfbeeld (hoe beïnvloeden sociale media het zelfbeeld?). Daarnaast weet men weinig over de rol van factoren die de relatie tussen sociale media en zelfbeeld mogelijk kunnen beïnvloeden, zoals eigenschappen van gebruikers en de situatie waarin het sociale medium wordt gebruikt (voor wie en wanneer beïnvloeden sociale media het zelfbeeld?). Tenslotte is het weinige onderzoek op dit gebied grotendeels correlatieeel, waardoor de richting van het verband onduidelijk is (veroorzaakt het gebruik van sociale media veranderingen in zelfbeeld?).

Gezien deze drie tekortkomingen in de literatuur, heeft dit proefschrift als doel te onderzoeken of en middels welke processen het gebruik van sociale media zelfbeeld beïnvloedt en voor wie en onder welke omstandigheden deze effecten in het bijzonder standhouden of sterker zijn. Specifiek wordt gekeken naar de effecten van sociale netwerksites en datingsites (veelgebruikte vormen van sociale media) op adolescenten en (jong)volwassenen (de grootste gebruikers van deze media). Hoofdstuk 2 tot en met 5 rapporteren elk verschillende gevolgen van het gebruik van sociale netwerksites en datingsites voor verschillende, relevante aspecten van het zelfbeeld. In de context van sociale netwerksites richt dit proefschrift zich op drie aspecten van het zelfbeeld van adolescenten en jongvolwassenen: zelfobjectivering (Hoofdstuk 2), de wens om het uiterlijk te veranderen middels cosmetische chirurgie (Hoofdstuk 3) en lichaamsontevredenheid (Hoofdstuk 4). In de context van datingsites richt dit proefschrift zich op zelfvertrouwen op romantisch vlak (Hoofdstuk 5).
Uit de centrale rol van persoonlijke foto’s en frequente opmerkingen over uiterlijk op sociale netwerksites, blijkt dat uiterlijk een belangrijk aspect is waarop gebruikers elkaar beoordelen op dit medium (Ringrose, 2011; Siibak, 2009). Deze focus op het uiterlijk roept vragen op over de mogelijke invloed van zulke platforms op de mate waarin vrouwelijke gebruikers op hun eigen uiterlijk focussen, dat wil zeggen, hun mate van zelfobjectivering (Hoofdstuk 2). Daarnaast kan deze objectivering op sociale netwerksites (zowel het zelf op basis van uiterlijk beoordeeld worden als het zien dat anderen op deze manier beoordeeld worden) effect hebben op de mate waarin gebruikers hun eigen uiterlijk willen verbeteren, bijvoorbeeld met behulp van cosmetische chirurgie (Calogero, Pina, Park, & Rahemtulla, 2010) (Hoofdstuk 3). Bovendien zouden de sterke focus op uiterlijk en opmerkingen en feedback over het uiterlijk op sociale netwerksites, druk kunnen uitoefenen op gebruikers om zich te conformeren aan de heersende schoonheidsideal. Aangezien de meerderheid van de mensen niet voldoet aan deze idealen, kan deze druk in lichaamsontevredenheid resulteren (Thomson, Heinberg, & Tantleff-Dunn, 1999) (Hoofdstuk 4).

Datingsites zouden andere aspecten van het zelfbeeld kunnen beïnvloeden dan sociale netwerksites, omdat mensen datingsites meestal voor andere redenen gebruiken en zich presenteren aan een ander type publiek dan op sociale netwerksites. Op datingsites bekijken singles elkaars profielen en beslissen zij of ze met elkaar willen daten. Als gevolg daarvan zullen mensen zich op een datingprofiel vooral proberen te presenteren als een aantrekkelijke potentiële partner of date (Tom & Hancock, 2011). Het is te verwachten dat dit type zelfpresentatie daarom vooral invloed zal hebben op de mate waarin iemand zichzelf ziet als een aantrekkelijke potentiële partner of date (Hoofdstuk 5).

Om deze mogelijke invloeden van sociale media op zelfbeeld te onderzoeken, maakt dit proefschrift gebruik van een combinatie van experimenten en longitudinaal vragenlijstenonderzoek. Deze combinatie zorgt voor een optimale balans tussen interne validiteit (hoog in experimenten, lager in longitudinaal vragenlijstenonderzoek) en externe validiteit (hoog in longitudinaal vragenlijstenonderzoek, laag in experimenten).
Belangrijkste Bevindingen

De empirische hoofdstukken van dit proefschrift ondersteunen allen het idee dat het gebruik van sociale media het zelfbeeld van mensen kan beïnvloeden. Daarnaast laten de beschreven studies een aantal mechanismen zien die aan de effecten van sociale media op zelfbeeld ten grondslag liggen. Tenslotte geven de verschillende onderzoeken inzicht in individuele en situationele verschillen in de effecten van sociale media op zelfbeeld.

Het experiment dat wordt beschreven in Hoofdstuk 2 laat zien dat online zelfpresentatie, zoals het plaats zou vinden op sociale netwerksites, zelfobjectivering veroorzaakt bij vrouwen. Alle deelnemende vrouwen beschreven zichzelf op een profiel. Een deel van de vrouwen werd verteld dat anderen dit “online profiel” misschien te zien zouden krijgen (experimentele groep). Bij de andere groep werd benadrukt dat de zelfbeschrijving privé was en niet door anderen gezien zou worden (controlegroep). De experimentele groep focuste vervolgens meer op hun eigen uiterlijk dan de controlegroep. Dit effect van publieke online zelfpresentatie op zelfobjectivering, ontstond echter alleen bij vrouwen die kort daarvoor waren blootgesteld aan objectiverende media (media waarin het uiterlijk centraal staat). Deze blootstelling verhoogde vermoedelijk de verwachting zelf op uiterlijk beoordeeld te worden, als de deelnemers zich vervolgens online aan anderen presenteerden. Deze verwachte objectivering resulteerde vervolgens waarschijnlijk in zelfobjectivering.

Hoofdstuk 3 rapporteert de resultaten van een longitudinale vragenlijststudie onder 604 adolescenten. Deze studie laat zien dat frequenter gebruik van sociale netwerksites, een toename voorspelt in de wens om cosmetische chirurgie te ondergaan. Dit effect werd gemedieerd door het belang van het eigen uiterlijk: Adolescenten die vaker sociale netwerksites gebruikten, hechten een jaar later meer belang aan hun eigen uiterlijk, wat er vervolgens toe leidde dat ze meer geneigd waren cosmetische chirurgie te willen ondergaan. De effecten waren even sterk aanwezig bij jongens en meisjes.

De resultaten van dezelfde longitudinale vragenlijststudie onder adolescenten, beschreven in Hoofdstuk 4, laten zien dat het gebruik van sociale netwerksites zorgt voor een toename in lichaamsontevredenheid bij zowel jongens als meisjes. Frequenter gebruik van sociale netwerksites voorspelde, zoals verwacht, ook een toename in training op het gebied van uiterlijk, dat wil zeggen, opmerkingen en feedback die adolescenten kregen van vrienden over de mate waarin zij voldoen aan de culturele schoonheidsidealen. Training op het gebied van uiterlijk voorspelde echter niet de mate van lichaamsontevredenheid en was daarom geen mediator.
van het effect van sociale netwerksites op lichaamsontevredenheid, in tegenstelling tot de verwachtingen. De verbanden tussen het gebruik van sociale netwerksites en lichaamsbeeld verschillen opnieuw niet tussen jongens en meisjes.

Hoofdstuk 5 laat zien dat activiteiten op datingsites (romantisch) zelfvertrouwen kunnen beïnvloeden. In het experiment in dit hoofdstuk maakten 92 single vrouwen een datingprofiel. Daarna werd gemeten in hoeverre deze vrouwen zichzelf zagen als een aantrekkelijke partner of date (romantisch zelfvertrouwen). Voordat het profiel werd aangemaakt, werd de vrouwen verteld dat hun profiel getoond zou worden aan een potentiële date die ze later zouden kunnen ontmoeten. Een deel van de vrouwen verwachtte hun match te ontmoeten in een face-to-face meeting, terwijl de andere vrouwen verwachtten te gaan chatten met hun date. Het verwachten van computergemedieerde chat interactie leidde tot meer romantisch zelfvertrouwen dan het verwachten van face-to-face interactie. Dit effect werd gemedieerd door de verwachting een positievere indruk te maken en, als gevolg hiervan, een positievere zelfpresentatie op het datingprofiel. Vrouwen die dachten dat zij met een potentiële date zouden chatten, verwachtten een positievere indruk te maken met hun profiel dan vrouwen die dachten dat ze een date face-to-face zouden ontmoeten. Deze verwachting om een positieve indruk te maken, leidde vervolgens tot een positievere zelfpresentatie op het datingprofiel. Een positievere zelfpresentatie leidde er uiteindelijk toe dat vrouwen zichzelf zagen als een meer aantrekkelijke partner of date.

De bevindingen van deze hoofdstukken hebben een aantal theoretische implicaties en kunnen richting geven aan toekomstig onderzoek naar de effecten van het gebruik van sociale media op zelfbeeld. Daarnaast bieden de resultaten een aantal implicaties voor het welzijn van adolescenten en volwassenen.

Wetenschappelijke Implicaties

De resultaten van dit proefschrift laten consequent zien dat het gebruik van sociale media en online zelfpresentatie, invloed kunnen hebben op verschillende aspecten van het zelfbeeld. Deze bevindingen dragen bij aan de theorievorming op meerdere gebieden. Tegelijkertijd roepen de uitkomsten nieuwe vragen op voor verder onderzoek.

Ten eerste laat dit proefschrift zien dat media-effecten op zelfbeeld niet beperkt zijn tot de effecten van blootstelling aan media-inhoud die door anderen gemaakt is. De bevindingen ondersteunen de ideeën van wetenschappers over zogeheten expressie-effecten (expression effects, Pingree, 2007) of, in andere woorden,
zelfgegenereerde media effecten (self-generated media effects, Valkenburg & Peter, 2013). Met expressie-effecten wordt bedoeld dat het creëren van inhoud, zoals dit gebeurt op sociale media, effecten kan hebben op de persoon die deze inhoud creëert. In overeenstemming met het idee van expressie-effecten, had in Hoofdstukken 2 en 5 het creëren van een online profiel effect op het zelfbeeld. Interessant genoeg had in Hoofdstuk 2 blootstelling aan traditionele objectiverende media-inhoud op zichzelf geen invloed op zelfbeeld (zelfobjectivering). Het creëren van een online profiel had echter wel invloed op het zelfbeeld (zelfobjectivering) onder vrouwen die kort daarvoor blootgesteld waren aan traditionele objectiverende media-inhoud. Een benadering die uitgaat van expressie-effecten lijkt dus veelbelovend voor toekomstig onderzoek naar de consequenties van sociale media op het zelfbeeld van gebruikers.

Ten tweede geeft dit proefschrift inzicht in hoe reeds bestaande theorieën gebruikt kunnen worden om (expressie-)effecten van nieuwe sociale media op zelfbeeld te voorspellen en verklaaren. Dit proefschrift laat bijvoorbeeld zien dat theorieën over offline, face-to-face zelfpresentatie zeer informatief kunnen zijn voor het onderzoeken van effecten van sociale media op zelfbeeld (bijv. Leary & Kowalski, 1990; Schlenker et al., 1994; Tice, 1992). Zo werd in Hoofdstuk 5 het two-component model of impression management (Leary & Kowalski, 1990) met succes toegepast op de effecten van het aanmaken van een datingprofiel op romantisch zelfvertrouwen. Dit model werd tot nu toe voornamelijk gebruikt in de context van offline, face-to-face zelfpresentatie. Aangezien online zelfpresentatie, dat wil zeggen, computergemediateerde zelfpresentatie, nog niet zo lang bestaat en constant verandert, is het nuttig om parellen te trekken tussen offline zelfpresentatie en (verschillende vormen van) online zelfpresentatie. Wanneer men zich bewust is van de verschillen en overeenkomsten tussen offline en online zelfpresentatie, is het mogelijk de bestaande theorieën over offline zelfpresentatie, waaraan decennia onderzoek ten grondslag ligt, te vertalen naar online zelfpresentatie. Op deze manier hoeven onderzoekers niet telkens het wiel opnieuw uit te vinden voor iedere vorm van online zelfpresentatie. Simpel gezegd: Toekomstig onderzoek over de effecten van sociale media op zelfbeeld zou baat kunnen hebben bij het gebruik van bestaande theorieën over offline face-to-face zelfpresentatie.

Ten derde kunnen bevindingen met betrekking tot online zelfpresentatie omgekeerd ook de theorievorming over algemene zelfpresentatie informeren, bijvoorbeeld over de effecten van verschillende vormen van zelfpresentatie, in verschillende situaties, en via verschillende media. Zo laat dit proefschrift onder andere zien dat de reacties van anderen die iemand verwacht op zijn of haar
zelfpresentatie, een belangrijke rol spelen bij de effecten van deze zelfpresentatie op zijn of haar zelfbeeld. Het proefschrift laat ook zien dat situationele factoren invloed hebben op deze verwachte reacties en, als gevolg hiervan, op zelfbeeld. In Hoofdstuk 5 bijvoorbeeld, verwachten vrouwen die zichzelf presenteerden op een datingprofiel een positievere indruk te maken op potentiële partners, als zij dachten in de toekomst te zullen chatten met deze potentiële partners, dan als ze gelijk een face-to-face date anticipeerden. Deze positievere verwachtingen over de indruk die deze vrouwen verwachtten te maken leidde tot een positievere zelfpresentatie en, als gevolg hiervan, tot een positiever zelfbeeld. Dit effect werd toegeschreven aan de mogelijkheden van online zelfpresentatie ten opzichte van offline zelfpresentatie (bijv. meer tijd om te bewerken, meer mogelijkheden voor selectieve presentatie, etc.) (Walther, 1996; Walther, 2007). Sociale media bieden hierdoor meer controle over zelfpresentatie dan face-to-face zelfpresentatie. Dit leidt bij gebruikers tot de verwachting dat ze online een positievere indruk zullen maken dan wanneer zij zich face-to-face presenteren. Deze verwachtingen zorgen vervolgens voor een positievere zelfpresentatie en een positiever zelfbeeld.

Het is dus sterk mogelijk dat de effecten van sociale media op zelfbeeld op zijn minst deels te verklaren zijn door de reacties die gebruikers verwachten dat hun online zelfpresentatie bij anderen uit zal lokken. Het idee dat geanticipeerde reacties van anderen invloed hebben op het zelfbeeld, strookt niet alleen met theorieën over zelfpresentatie (bijv. Leary & Kowalski, 1990), maar ook met theorieën als symbolisch interactionisme (symbolic interactionism Cooley, 1902; Mead, 1934). Dit proefschrift toont aan dat zulke ideeën over hoe anderen ons zien een belangrijke verklaring zou kunnen zijn voor de effecten van verschillende vormen van offline en online zelfpresentatie op zelfbeeld.

Voor vervolgonderzoek dat de effecten van zelfpresentatie via een bepaald medium in een bepaalde situatie op zelfbeeld wil voorspellen of verklaren, kan het dus nuttig zijn om na te denken over de volgende aspecten: Wat doen (a) het medium en (b) de situatie met (c) de verwachtingen van de zich presenterende persoon over (d) de reacties van het publiek op (e) zijn/haar zelfpresentatie en wat zijn hiervan de gevolgen voor (f) zijn/haar het zelfbeeld? Door breder te kijken dan alleen naar de hoofdeffecten van het algemene gebruik van een specifiek sociaal medium, kunnen we als onderzoekers meer grip krijgen op hoe online zelfpresentatie het zelfbeeld beïnvloedt. Op deze manier kunnen we zorgen dat het onderzoek van nu ook in de toekomst toepasbaar blijft, ondanks een snel en constant veranderend medialandschap.
Implicaties voor Welzijn


Hoewel de effecten relatief klein zijn, de precieze processen nog niet helemaal helder zijn en de personen en situaties waarbij de effecten het sterkste of zwakste zijn nog niet helemaal duidelijk zijn, laat dit proefschrift zien dat de mogelijke negatieve effecten van het gebruik van sociale media op lichaamsbeeld niet vergeten moeten worden. Wanneer interventies ontwikkeld worden om een negatief lichaamsbeeld, een overmatige focus op het uiterlijk en de negatieve consequenties hiervan tegen te gaan, is het dus van belang om ook te kijken naar hoe de negatieve invloeden van sociale media voorkomen kunnen worden. Om zulke interventies zo goed mogelijk te kunnen informeren, is echter meer onderzoek nodig over (1) welke activiteiten binnen het gebruik van sociale media effect hebben op lichaamsbeeld, (2) onder welke omstandigheden deze effecten plaatsvinden en het sterkst zijn en (3) welke gebruikers het meest kwetsbaar zijn.

Hoewel de negatieve effecten van het gebruik van sociale netwerksites op het lichaamsbeeld in het oog springen, laat dit proefschrift ook zien dat het gebruik van sociale media positieve effecten kan hebben op zelfbeeld. Zoals in Hoofdstuk 5 staat beschreven, heeft een positieve zelfpresentatie positieve effecten op zelfvertrouwen. Deze bevinding strookt met onderzoek naar de positieve effecten van het gebruik van sociale media op zelfvertrouwen (bijv. Gonzales & Hancock, 2008) en
Samenvatting

roept veel interessante vragen op voor toekomstig onderzoek. Bijvoorbeeld: heeft online zelfpresentatie een positief effect op het zelfvertrouwen van iedereen, of is er sprake van een “rich-get-richer” fenomeen (Kraut et al., 2002)? Dat wil zeggen, presenteert iedereen zich positief op sociale media, of vooral die personen die al veel zelfvertrouwen hebben, die op deze manier nog meer zelfvertrouwen krijgen? Welke factoren, naast verwachtingen over of toekomstige interactie via chat of face-to-face plaatsvindt (Hoofdstuk 5), zorgen ervoor dat mensen zich meer of minder positief presenteren? De antwoorden op deze vragen kunnen helpen bij het bedenken van manieren om het zelfvertrouwen van jongeren en jongvolwassenen te verhogen via het gebruik van sociale media.
Referenties


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Curriculum Vitae

Dian A. de Vries was born on January 10th 1988 in Wageningen, The Netherlands. She attended the European School in Culham, United Kingdom between 1995 and 2000, and obtained a Gymnasium diploma (*cum laude*) from Maurick College, Vught, The Netherlands in 2006. She studied Health Sciences, specializing in Mental Health and Bioregulation and Health (*BSc. 2009, cum laude*) and Psychopathology (*MSc./MPhil. 2011, cum laude*) at Maastricht University, The Netherlands. In 2010 she gained experience as a psychologist in child and youth psychiatry (Herlaarhof, Vught, The Netherlands) and in 2011 she conducted a research internship at Oxford University (Center for Research on Eating Disorders Oxford).

De Vries started her PhD project at the Amsterdam School of Communication Research (ASCoR) at the University of Amsterdam in October 2011. The project is part of the Research Priority Area Communication of the University of Amsterdam. Between September 2013 and November 2013 she spent time at Michigan State University as a visiting scholar at the Department of Communication. She completed her dissertation by March 2014. As of March 2014 she is a postdoctoral researcher at ASCoR within the Research Priority Area Communication. Her postdoctoral project focuses on the effects of self-presentation on social media on adolescents’ psycho-social well-being.