



UNIVERSITY OF GOTHENBURG

#Instaenvy

The Role of Social Comparison Orientation in the Relationship Between Exposure to Instagram and the Emotion of Envy

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Abstract

Instagram is one of the fastest growing yet least researched social media platforms of today. The image-oriented nature of Instagram allows its users to literally construct and convey an image of themselves and their lifestyles. This can lead to the manipulation of reality and idealised self-presentation where individuals depict themselves in ways that meet the ideals of society. While Instagram is seen as a fun way of creating and interacting, these idealised self-presentational posts can possibly be harmful to individuals who have high Social Comparison Orientations (SCO) and are prone to compare themselves with others. This research aimed to further the understanding of the relationship between the frequency of exposure to Instagram and the emotion of envy while exploring if Social Comparison Orientation acts as a moderator or mediator of this relationship. Data was collected through an online survey distributed through social media and personal contacts. The survey questions were based on scales from previous studies on SCO and social media use. The collected data was analysed using Hayes' PROCESS macro for SPSS in order to determine whether SCO was significant as a moderator or mediator. This research found that SCO was a statistically significant mediator rather than a moderator of the relationship between exposure to Instagram and the emotion of envy. The results showed that exposure to Instagram was positively related to SCO, which in turn was positively related to the emotion of envy.

Keywords: *Instagram, Social Comparison Orientation, SCO, Envy, Social Media, Social Networking, SNS, Idealised Self-Presentation*

Table of Contents

Abstract	1
Table of Contents	2
1. Introduction	4
1.1 SNS, Social Comparison, & Wellbeing	4
1.2 Previous Studies	5
1.3 Purpose & Research Question	6
2. Theoretical Background	8
2.1 Instagram & SNS Activities	8
2.2 Self-Presentation & Idealised Self	9
2.3 Social Comparison Theory & Orientation	11
2.4 Envy	15
2.5 Summary of Hypotheses	18
3. Methodology	20
3.1 Survey Design	20
3.2 Sampling & Data Collection	21
3.4 Data Analysis	22
3.5 Validity & Reliability	23
3.6 Ethical Consideration	24
4. Results	24
4.1 Demographic Information	24
4.2 Descriptive Statistics for Exposure, SCO, & Envy	25
4.3 Social Comparison Orientation as a Moderator	26
4.4 Social Comparison Orientation as a Mediator	28
4.5 Other Findings of Interest	29
5. Discussion	30
5.1 The Effect of Exposure to Instagram on Wellbeing	30
5.2 The Perils of Communicating through Social Media Platforms	32
5.3 Practical Contributions	33
6. Conclusions	34
6.1 Findings of the Paper	34
6.2 Significance for Communication Research	35
6.3 Suggestions for Future Research	36

References	37
Appendix 1: Survey	43
Appendix 2: Students' Contribution to the Joint Thesis	51

1. Introduction

1.1 SNS, Social Comparison, & Wellbeing

Online social networking has become an indispensable part of individuals' everyday lives (Eftekhar, Fullwood, & Morris, 2014). The widespread use of smartphones and social media platforms such as Facebook, Twitter, and Instagram means that we are connected to one another more than ever today. Individuals are constantly exposed to others' life stories and experiences yet humans have a tendency to suppress negative emotions and experiences in public (Jordan, Monin, Dweck, Lovett, John, & Gross, 2011). Moreover, when using social networking sites (SNS), many individuals are concerned about how others perceive them and tend to attempt maintaining favourable impressions by optimising their self-presentation and promoting desirable lifestyles (Chou & Edge, 2012).

Consequently, this exposure to others' managed impressions can lead to a tendency to compare oneself with others (Fox & Moreland, 2015). Batenburg and Das (2015) emphasise that SNS elicit social comparison behavior that is related to the potential psychological wellbeing of the users. This point is illustrated by Fox and Moreland (2015) who concluded that social media platform users, in this case Facebook, experience negative emotions such as jealousy and anxiety due to constant social comparisons. An important factor when it comes to social comparison opportunities and consequently to levels of psychological wellbeing is the frequency and intensity of exposure to social media platforms. For example, Gonzales and Hancock (2011) centered their study on examining the effects of exposure to Facebook on self-esteem. The study is based on the idea that information communicated through social networking platforms can lead to selective self-presentation and exaggerated impressions. Thus, constant exposure can eventually influence the wellbeing of the users.

1.2 Previous Studies

There have been multiple studies concerning the positive and negative effects of the permanent state of connectedness, aspects of social comparison, idealised self-presentation, and wellbeing in relation to Facebook or Twitter (Batenburg & Das, 2015; Chou & Edge, 2012; Fox & Moreland, 2015; Fox & Vendemia, 2016; Gonzales & Hancock, 2011; Michikyan, Dennis & Subrahmanyam, 2015; Taylor & Strutton, 2016; Young, Kuss, Griffiths, & Howard, 2017). Despite this rich literature regarding the effects of Facebook and Twitter usage, there has not been equal amount of attention cast on Instagram. Although it is one of the fastest growing social media platforms of today, Instagram is also one of the least researched. Furthermore, even though Social Comparison Orientation has been researched in terms of its role as a simple moderator (Yang, 2016), limited focus has been cast on its potential as a simple mediator. Therefore, this study aims to contribute to closing this gap in research through analysing the relationship between exposure to Instagram and the emotion of envy and the role of Social Comparison Orientation as a moderator or mediator of this relationship.

Instagram offers a unique study as it is an image-oriented social media platform. When it comes to social networking sites, digital photos are considered to be a method of sharing personal experiences and are used as an influential communication and identity construction tool (Eftekhar et al., 2014). Pictures may influence impressions more strongly than words (Heide, D'Angelo & Schumaker, 2012) and Instagram is a platform that affords great potential for constructing idealised self-presentational posts (Lup, Trub, & Rosenthal, 2015). These posts may or may not reflect reality and previous studies have explored the (in)authenticity of self-presentation on social media (Fox & Vendemia 2016; Michikyan et al., 2015). A recent study conducted by RSPH (Royal Society for Public Health) in the United Kingdom that surveyed 1,479 youths aged 14 to 24 have illustrated that image-oriented social media such as Instagram and Snapchat were the worst for young people's wellbeing (RSPH, 2017). Due to its potential for promoting desirable lifestyle and positive self-presentational images, Instagram provides ample opportunity for social comparison.

One study that focuses on social comparison within the context of Instagram was conducted by Yang (2016). Taking into consideration that most users present a highly positive image of the self on SNS, the study explored how Instagram activities would be related to loneliness. The study found that interaction and browsing on the platform were related to decreased loneliness while broadcasting was related to increased loneliness. Social Comparison Orientation (SCO) was found to be a significant moderator for interaction on Instagram as interaction only decreased loneliness for those with low SCO.

Another study centered on the influence of Instagram use on psychological wellbeing of its users was conducted by Lup et al. (2015). The authors highlighted the possible connections among Instagram use, negative social comparison, and depressive feelings when following strangers' profiles. The study found that the correlation between frequent use of Instagram and depressive symptoms was marginal and that more frequent use does not increase social comparison. However, they have found a positive correlation between the number of strangers an individual follows and the frequency of social comparison.

1.3 Purpose & Research Question

This study aims to continue the line of research that explores the relationship between Instagram use and the wellbeing of the users. The purpose of the study is to further the understanding of the relationship between the feeling of envy and the exposure to Instagram (a social media platform rich in idealised self-presentational posts). Moreover, the present research aims to focus on Social Comparison Orientation as a potential moderator or mediator of this relationship. As a moderator, SCO would affect the direction and/or strength of the relationship between the independent variable (exposure to Instagram) and the dependent variable (envy); the relationship between the two variables would depend on the moderator (SCO). As a mediator, SCO would explain the relationship between the independent and dependent variables; the independent variable (exposure to Instagram) would influence the mediator variable (SCO), which in turn would influence the dependent variable (envy).

As categorising exactly what constitutes an idealised self-presentational post on Instagram is difficult, this research departs from the assumption that the more one is exposed to Instagram, the more one would be exposed to idealised self-presentational posts. This assumption is based on the research study of Lup et al. (2015) that argues that Instagram in particular encourages the sharing of the most positive aspects of an individual's life as the social media platform is very much about the aesthetics created through the images. To achieve the objective, the research question below was formulated:

RQ: To what extent is Social Comparison Orientation a moderator or a mediator of the relationship between frequency of exposure to Instagram and the emotion of envy?

2. Theoretical Background

2.1 Instagram & SNS Activities

Instagram is an image-oriented social media platform that is mostly accessed through smartphones. The Instagram application allows users to post pictures and videos with short captions, which appear in various places such as the users' personal account page and in the newsfeed of their followers. Users can apply different effects through photo-editing features on the application as well as apply different filters (Lup et al., 2015). Users have the possibility to choose to have a private or public account. Public accounts can be followed without consent from the account holder and following need not be reciprocal. As of August 2016, a new feature called Instagram Stories has been available, which allows users to share pictures and videos that disappear after twenty-four hours.

SNS in general allow individuals to communicate in a variety of ways such as through posting comments, updating statuses, consuming information through viewing uploaded photographs, and messaging (Young et al., 2017). According to Pagani, Hofacker and Goldsmith (2011), most activity on SNS can be reduced to two fundamental elements: viewing (passive network use) and posting (active network use). The authors state that posting enables viewing and viewing motivates posting. Thus, successful SNS should promote a balanced sequence of content creation and content consumption.

On the other hand, Yang (2016) argues that there are three main categories of activities that users can participate in on SNS: passive, active, and interactive. Passive activity is namely browsing, active use involves producing and broadcasting content, and interactive activity is commenting, liking, and sending messages. However, these categories are not absolute. For example, browsing is not always as passive as it is believed to be since browsing could be a prelude to an interaction. In relation to loneliness, previous studies have found that passive use of SNS is related to higher loneliness and wellbeing, interactive use related to lower loneliness, while active use has produced mixed results (Yang, 2016). However, Yang's own study, which focused specifically on Instagram, found that interaction and browsing were related to lower loneliness

while broadcasting related to higher loneliness. It must be repeated that while Instagram interaction was correlated with lower loneliness, this correlation existed only for those with low SCO and that the positive results of Instagram interaction were not felt for those with high SCO. This was explained by Yang to be a result of individuals with high SCO noticing or being exposed to social information of others who they interact with that could possibly cancel out the benefits of interaction.

2.2 Self-Presentation & Idealised Self

One way self-presentation can be defined is as the “use of behaviour to present information about the self to others” (Michikyan et al., 2015, p.56). Erving Goffman’s 1959 work advances self-presentation as the process of packaging and editing the self to create a certain impression upon an audience (see Hancock & Toma, 2009). Goffman’s concepts of frontstage and backstage describe how individuals are constantly performing their identity in the frontstage while rehearsing in the backstage. Thus, self-presentation is, to a certain degree, always selective as individuals generally desire to maintain a positive impression with their audience. A definition that is in line with Goffman’s idea and close to what this study focuses on is self-presentation as a “conscious effort to enact behaviours to create a desired persona for an audience” (Fox & Vendemia, 2016, p.593).

The tendency to practice a carefully controlled and orchestrated type of self-presentation has been termed selective self-presentation (Hancock & Toma, 2009). Selective self-presentation involves strategies to emphasise positive qualities and to omit negative ones (Ellison, Heino & Gibbs, 2006). Those who use SNS to present themselves attempt to minimize their negative traits while highlighting their achievements (Lim & Yang, 2015). In computer-mediated environments, this strategic packaging of the self (selective self-presentation) is facilitated by the technological affordances that empower users to construct flattering self-presentations (Toma & Carlson, 2015). Users of computer-mediated communication (CMC) have at their disposal several techniques to optimise their self-presentation such as editing messages and photographs, careful selection of pictures, and associating themselves with specific sites, material objects, and certain

people (Chou & Edge, 2012). Selective self-presentation is facilitated by CMC as it offers opportunities for users through the techniques mentioned above to calculate and carefully organise their self-display (Chae, 2017). Especially when it comes to virtual self-presentation, Haferkamp and Krämer (2011) question whether this conscious effort to carefully choose ways to present oneself as positively as possible leads to an idealistic way of self-display.

In general, people attempt to maintain positive impressions when using social networking platforms. Thus, the information and images posted tend to be socially desirable, which lead to a favourable self-presentation (Chou & Edge, 2012). Researchers have suggested that online self-presentation practices may contribute to unrealistic impressions of others and misperceptions of their wellbeing, influencing their comparative wellbeing (Chou & Edge, 2012; Jordan et al., 2011). A relevant example is Chou and Edge's (2012) study in which the authors emphasise that a frequent exposure to others' positive life events and pictures of happy moments can give Facebook users the feeling that others are happier and have better lives in comparison to themselves.

This research differentiates between selective self-presentation and idealised self-presentation. As individuals generally desire to maintain a positive impression with his or her audience, they tend to present an optimised, favourable and strategic self through the process of selective self-presentation. The term 'selective' connotes that the characteristics that one may present exist but are not the whole truth as there are other characteristics (deemed more negative) that are not presented. On social networking sites, selective self-presentation is the norm. For example, on Facebook, one chooses a profile picture in which one looks attractive and select life-events to post that are positive. However, there is also a tendency to share negative feelings on Facebook statuses (Lup et al., 2015). Instagram is arguably one of the most susceptible to selective self-presentation due to its image-driven platform.

When using virtual communication, this tendency to enact an orchestrated and controlled presentation of the self may lead to an unrealistic, idealistic, and to a certain extent deceptive self-presentation. On social networking sites, a constant promotion of a desirable self and lifestyle creates opportunities for overestimation and misperception of others' wellbeing. An

individual can idealise his or her self-presentation through concealing or emphasizing different aspects that match the expectations of the situation while on the stage (Vasalou, Joinson, Bänziger, Goldie, & Pitt, 2008). The term ‘idealised’ connotes that the characteristics presented may exist but are also enhanced to an extent.

While Goffman’s analysis of the self is from a micro perspective, E.T. Higgins offers a macro perspective of the self (Vasalou et al., 2008). Higgins suggests that there are three self-aspects (actual self, ought self, and ideal self) which can be viewed from the individual’s or from the audience’s point of view. The actual self is composed of the qualities that an individual is believed to possess, the ought self is composed of qualities that the individual is expected to have, and the ideal self is composed of qualities that the individual or the audience wishes he or she has. Thus, what this research names as idealised self-presentation encompasses both self-presentation of select characteristics an individual possesses as well as a self-presentation of an ideal self that extends or manipulates the reality.

In the present research, both selective and idealised self-presentation are closely related to CMC. In computer-mediated environments, these types of self-presentation are possible due to the technological affordances that allow for asynchronicity and editability; the messages conveyed can be rehearsed and reprocessed (Toma & Carlson, 2015). This means that self-presentation online differs from self-presentation in person as there is more possibility to rehearse and reprocess in online communication. Toma and Carlson (2015) focus on photographs as effective tools to construct an ideal self-image because photos can be selected and digitally altered. Instagram is arguably one of the most susceptible to selective self-presentation due to its focus on visuals. Being an image-oriented platform, it affords great potential for constructing idealised self-presentational posts (Lup et al., 2015).

2.3 Social Comparison Theory & Orientation

The term ‘social comparison’ was first introduced by Leon Festinger in his 1954 paper where he outlined his Social Comparison Theory (Gibbons & Buunk, 1999). Festinger hypothesised that humans have a drive to evaluate their opinions and abilities. Thus, humans engage in social

comparison, defined as the way “we use others to make sense of ourselves and our social world” (ibid., p. 15). Social comparisons are an essential source of information about the self (Gibbons & Buunk, 1999; Schneider & Schupp, 2013).

As Haferkamp and Krämer (2011) describe, people tend to relate information to the self when exposed to information about others. Comparisons are so deeply rooted in the psyche and daily behaviour that comparing oneself with others represent an activity that cannot be escaped. However, people also subject themselves to social comparisons by choice (Collins, 1996). Individuals compare themselves with others for purposes of self-evaluation (derived from Festinger’s theory, cf. Gibbons & Buunk, 1999), self-improvement, and self-enhancement (Collins, 1996; Johnson & Knobloch-Westerwick, 2014; Lim & Yang, 2015; Schneider & Schupp, 2013). As highlighted by Gibbons and Buunk (1999), any aspect of the self or significant others (i.e., possessions, accomplishments, feelings) may be the prerequisite for comparison.

As previously mentioned, one of the reasons for engaging in social comparison may be self-enhancement. The desire for self-enhancement can affect the amount, direction, and impact of comparison (Gibbons & Buunk, 1999). Two types of social comparison exist, determined by their directions: upward and downward (Batenburg & Das, 2015; Buunk & Gibbons, 2006; Collins, 1996; Gibbons & Buunk, 1999; Haferkamp & Krämer, 2011). Upward comparison refers to comparison with others who are deemed to be better off (Batenburg & Das, 2015; Lim & Yang, 2015). It occurs when individuals identify with or aspires to be like those seen as better off (Johnson & Knobloch-Westerwick, 2014). Collins (1996) pinpointed that upward comparison may reflect an interest in self-improvement or achievement, where people use the information to motivate and inspire themselves. In fact, upward comparisons can meet the desire for positive self-regard both indirectly through self-improvement and directly through self-enhancement (Collins, 1996). For example, Gerson, Plagnol, and Corr (2016) found that individuals with high Goal-Drive Persistence personality trait that participate in upward comparison on Facebook have higher eudaimonic wellbeing (i.e., focus on self-realisation) due to their desire for self-improvement.

Nevertheless, negative effects of upward social comparison exist, especially when people realise that the presented standard (e.g., glamorous lifestyle) is unattainable (Haferkamp & Krämer, 2011). Frequent upward comparisons also trigger the risk of negative self-evaluations (Rentzsch & Gross, 2015). Downward comparison concerns comparison with others deemed to be worse off (Batenburg & Das, 2015). It describes a situation in which the subjects of comparison are less fortunate than those initiating the comparison (Haferkamp & Krämer, 2011).

Individuals appear to differ in the extent to which they engage in social comparison. Moreover, they tend to experience social comparison opportunities differently and have different levels of Social Comparison Orientation (high or low). This can be measured using the Social Comparison Orientation Scale developed by Frederick X. Gibbons and Bram P. Buunk (1999), a scale assessing individual differences in comparison orientation and the existence of a possible social comparison disposition.

Greater use of social media offers rich opportunities for social comparison (Johnson & Knobloch-Westerwick, 2014). Social comparison is a common activity (Fox & Moreland, 2015) and an obvious process (Haferkamp & Krämer, 2011) on social networking sites because of the great exposure to viewing other network members' life stories and experiences (Chae, 2017). Such a plethora of information offers ample opportunities for engaging in comparisons with others. Therefore, this research predicts that the frequency of exposure to Instagram would influence the level of an individual's SCO. More specifically, this research hypothesises that the more frequent the exposure to Instagram, the more likely an individual will score higher on the SCO scale (**H3**).

Although it appears to be a universal human characteristic to participate in social comparison, there is a reluctance to admit to participating, perhaps due to the lack of awareness (Gibbons & Buunk, 1999; Haferkamp & Krämer, 2011). Furthermore, young people are less reluctant to acknowledge or admit their comparison tendencies (Gibbons & Buunk, 1999). Social networking sites generate social comparison behaviour that in turn is related to psychological wellbeing (Fox & Moreland, 2015). People vary in the strength and frequency with which they engage in social comparison and this variation influences the emotional reactions towards the perceived

life-satisfaction of other people (Buunk & Gibbons, 2006; Schneider & Schupp, 2013). As people interpret and draw conclusions differently, one's personal social comparison strategy might have a great influence on the psychological outcomes (Batenburg & Das, 2015).

Due to permanent social connectivity facilitated by available online platforms, the tendency to engage in comparisons might be activated, affecting the users' psychological wellbeing. Several studies have emphasised that social comparison made on social networking sites has the potential to be harmful and employing SNS as social comparison tools sometimes entails experiencing negative emotions (Chou & Edge, 2012; Fox & Moreland, 2015; Gonzales & Hancock, 2011; Haferkamp & Krämer, 2011; Johnson & Knobloch-Westerwick, 2014). For example, Chou and Edge (2012) showed that those with longer exposure to Facebook believed that others were happier and had better lives than them. Similarly, Fox and Moreland (2015) pinpointed that individuals engaged in social comparison on Facebook experienced negative feelings of jealousy or dissatisfaction. Feinstein, Hershenberg, Bhatia, Latack, Meuwly and Davila (2013) illustrated that upward comparisons on Facebook can lead to rumination, a repetitive focus on one's own distress, which can lead to depressive symptoms. In light of these findings, we hypothesise that the more frequent the exposure to Instagram, the more likely an individual experiences the emotion of envy (**H1**).

Even though social comparison is far more likely when targets of comparison are similar in dimensions of identity such as age, sex, and professional background (Johnson & Knobloch-Westerwick, 2014), people engage in social comparison with both similar and dissimilar individuals (Chae, 2017). In virtual environments afforded by the social networking platforms, the standards for comparison can be friends (both online and in real life), online acquaintances, or strangers one has never met in real life but who are part of the online network. Previous research has found that people who follow more strangers on social media are more likely to be negatively affected by frequent use than those who follow fewer strangers (Lup et al., 2015; Chou & Edge, 2012).

2.4 Envy

Envy is an intense and unpleasant feeling (Rentzsch & Gross, 2015; Smith & Kim, 2007), a pain caused by the good fortune of others (Lin & Utz, 2015; Ven, Zeelenberg & Pieters, 2009). It is also one of the most powerful causes of human strife and unhappiness (Gunderman, 2011). Envy is a social emotion, generally arising from engaging in upward social comparison (Apple, Crusius, & Gerlach, 2015; Lin & Utz, 2015; Nabi & Keblusek, 2014; Ven et al., 2009), especially a negative social comparison with another person (Rentzsch & Gross, 2015). As social comparison is far more likely when targets of comparison are similar in comparison-related attributes such as age, gender, and professional background (Johnson & Knobloch-Westerwick, 2014), targets of envy are also often similar except for the advantage that they have on the desired domain (Smith & Kim, 2007). Envy can be understood as the realization that one lacks another's superior quality, achievement, or possession (Ven et al., 2009).

We are surrounded by people who often seem to be better off than we are, leading to the emotional experience of envy. Envy can also be perceived as a two-sided experience: benign and malicious. Both types are unpleasant and frustrating experiences. Benign envy involves a desire for what someone else has and results in a motivational force to reduce the gap between oneself and the other; malicious envy entails and results in a wish for the other to lose the advantage they possess (Smith & Kim, 2007; Ven, 2015; Ven et al.; 2009). The present research focuses on the pain or frustration caused by Instagram users' socially desirable and favourable posts without taking into consideration the motivational and aspirational outcomes, the hostile aspect of envy, or any form of ill will. The research aims to focus on the negative emotional experience of envy as an influence on the wellbeing of social networking users.

People experience envy differently. Some individuals have habitual tendencies to engage in envious feelings towards other people, which is termed dispositional envy. According to Rentzsch and Gross (2015), dispositional envy is a social comparison-based trait, a stable tendency to encounter an unpleasant feeling when facing negative social comparison outcomes. Furthermore, they emphasise that the disposition to envy may vary across the comparison

domains (physical attractiveness, financial wealth, academic success, possessions, popularity, and status). The more important a domain is for an individual, the higher the tendency to feel envious towards others who are perceived to be superior. This leads us to hypothesise that the higher the level of an individual's SCO, the more likely the individual experiences the emotion of envy (**H4**).

As mentioned previously, envy has been conceptualised as a relatively stable dispositional tendency. Nevertheless, envy is not just a personality trait and is experienced by people who do not have a specific predisposition due to a certain social comparison context. This situation-specific, temporary type of envy is called episodic envy (Cohen-Charash, 2009). The present research is interested in episodic envy, which is triggered by the specific situation in which a potential social comparison is performed. We focus on the negative emotion of envy that may be experienced when individuals are exposed to idealised self-presentation on Instagram.

Envy is considered as one of a group of related emotions such as jealousy and shame (Smith & Kim, 2007). The concept of envy is often confused with jealousy and thus it is important to distinguish between the two (Parrott & Smith, 1993). Jealousy arises from the fear of losing something to another person, while envy refers to the pain we feel when someone else possesses something we lack (Gunderman, 2011; Lin & Utz, 2015). Thus, envy and jealousy can be experienced in different contexts, generate distinct judgments, and generate distinguishing emotional experiences (Smith & Kim, 2007). Nevertheless, they can also co-occur; jealousy is often accompanied by envy whereas envy may easily occur without jealousy (Parrott & Smith, 1993).

On SNS, envy is one of the most commonly found negative emotions (Chou & Edge, 2012). SNS users express emotions when they engage in comparisons with other network members based on social standards (Lim & Yang, 2015). Thus, information presented on social networking sites may be purposefully more socially desirable than reality (Wallace, James, & Warkentin, 2016). Research typically focuses on the benefits and positive outcomes while considerably less is known about the dark side of SNS (Fox & Moreland, 2015). In the context of SNS, people can easily access information about others' lives; thus, SNS facilitate social

comparison opportunities and stimulate a possible negative emotional effect between SNS users (Apple et al., 2015; Lim & Yang, 2015). The use of SNS may lead to negative outcomes such as constant social comparison to other network members (Fox & Moreland, 2015), which can trigger negative emotions such as jealousy, anxiety, envy (Apple et al., 2015; Fox & Moreland, 2015; Lin & Utz, 2015) and can reduce life satisfaction (Lim & Yang, 2015).

In general, users of SNS present positive and entertaining experiences, achievements, and flattering lifestyles. After exposure to these positive posts, people tend to have either feelings of happiness or envy (Lin & Utz, 2015). One person's happiness and joyful moments do not necessarily positively affect the lives of others (Lim & Yang, 2015). Being overwhelmed by friends' posts of seemingly happy and flawless lives can be harmful for some people (Apple et al., 2015). Thus, SNS can be considered environments rich in upward social comparisons, that can easily stimulate envious feelings (Wallace et al., 2016). This research intends to focus on the negative emotion of envy as an outcome of exposure to positive self-presentation, in relation to the personal orientation for social comparison, especially the upward one which is crucial to envy (Apple et al., 2015; Lin & Utz, 2015; Nabi & Keblusek, 2014; Ven et al., 2009; Wallace et al., 2016). In light of the previous research mentioned thus far, this research hypothesises that individuals with higher SCOs would score higher on the envy scale than individuals with lower SCOs at the same level of exposure to Instagram (**H2**).

Lin and Utz (2015) focus on the tie strength between the viewer and the poster, hypothesising that this relationship closeness is an important factor that affects emotional outcomes when exposed to others' posts on SNS. The researchers highlight that when using social media (in this case Facebook), people are exposed to life stories of best friends, family members, acquaintances, or total strangers in real life. Their study found that tie strength was in fact not a good predictor of the emotion of envy, and rather that personal characteristics of users correlate to envy. Thus, users with higher dispositional envy are predicted to participate more frequently in upward comparisons and as a result experience more envy on Facebook. The study also revealed that positive emotions occurred more often than negative, despite the use of envy triggering content such as vacation pictures in the study.

Although most people experience envy every once in awhile (Cohen-Charash, 2009), envy is often kept secret (Smith & Kim, 2007). This happens due to the fact that people tend to under report or misreport any envious feelings if not totally denying it, especially because envy is a socially undesirable term and perceived as one of the most avoided negative emotions to be admitted to others or to acknowledge to oneself (Smith & Kim, 2007).

2.5 Summary of Hypotheses

H1: The more frequent the exposure to Instagram, the more likely an individual experiences envy

H2: Individuals with higher SCOs would score higher on envy than individuals with lower SCOs at the same level of exposure to Instagram

H3: The more frequent the exposure to Instagram, the more likely an individual scores higher on the SCO scale

H4: The higher the level of an individual’s SCO, the more likely the individual experiences the emotion of envy

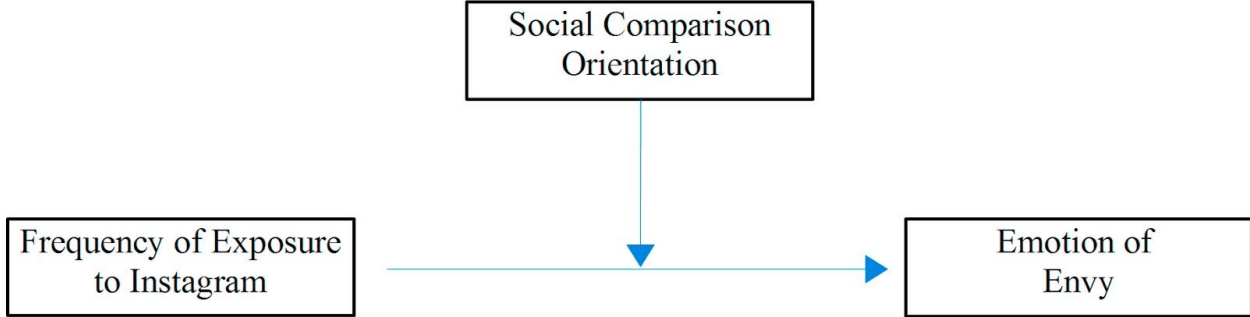


Figure 1. Model of SCO acting as a moderator for the relationship between exposure to Instagram and the emotion of envy

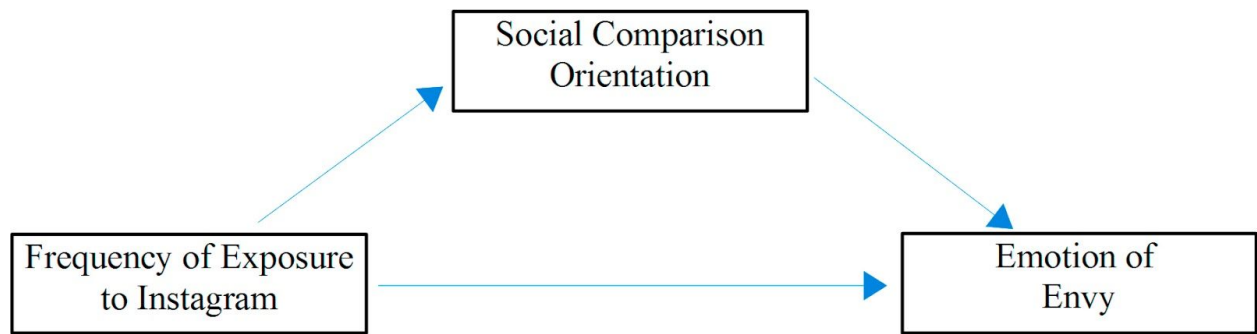


Figure 2. Model of SCO acting as a mediator for the relationship between exposure to Instagram and the emotion of envy

3. Methodology

3.1 Survey Design

The purpose of the study was to investigate if any relationship exists between frequency of exposure to Instagram and the emotion of envy, and if or how Social Comparison Orientation moderates or mediates this relationship. In order to fulfill this purpose, a survey was designed using multiple studies as points of departure. The survey was divided into five subcomponents with an additional introductory section; the full survey is attached as Appendix 1. The survey was created in Google Forms.

The first section of the survey posed questions about the demography of the participants. There were four questions in total which asked about age, gender, region of origin, and the level of education completed or within one year of completion. The questions were multiple choice and no questions were asked in a way that anonymity could be compromised (i.e., region of origin did not specify country but continents).

The second section was dedicated to question items from the English version of the Iowa-Netherlands Comparison Orientation Measure as developed by Gibbons and Buunk (as detailed in Schneider & Schupp, 2013). The section began with an abbreviated introduction of the original questionnaire, which briefly explained Social Comparison Orientation. Six items (out of eleven) from the questionnaire were selected as they were deemed relevant for the current study. Sample items included “I always pay a lot of attention to how I do things compared with how others do things”, “I often compare how I am doing socially (e.g., social skills, popularity) with other people”, and “I often compare myself with others with respect to what I have accomplished in life”. The questions were structured to be answered on a five-point Likert scale where 1 represented ‘I disagree strongly’ and 5 represented ‘I agree strongly’. Participants were informed of what each point of the scale represented.

The third section of the survey titled ‘Instagram Exposure’ consisted of six multiple choice questions that were designed to uncover the frequency of Instagram use as well as the type of

people the participants were following. Sample questions included “How much time do you spend on Instagram in a week?” and “Out of the people you follow on Instagram, what percentage are strangers you have never met?” The interest in whether participants were following more friends or strangers stems from previous studies that have shown indications that those who follow more strangers on social media accounts are more likely to suffer negative emotions (Lup et al., 2015; Chou & Edge, 2012).

The fourth section focused on participants’ activities on Instagram. The section consisted of five questions that participants answered on a Likert scale where 1 represented ‘Never’ and 5 ‘Always’. The questions were taken from Yang’s (2016) study where the author came to the conclusion that different activities on Instagram had different relations to loneliness. Sample questions included “How often do you comment on or reply to others' posts?” and “How often do you browse the homepage without liking or leaving comments?”

The fifth and final section was titled ‘Emotions’ and consisted of eight questions related to envy. The questions were answered on a five-point Likert scale where 1 represented ‘Not at all’ and 5 ‘To a large extent’. The questions were based on Rentzsch and Gross’ (2015) design of domain-specific envy scale where most of the items described negative feelings that are stemmed from specific circumstances. The words ‘envy’ or ‘envious’ were avoided in order to elicit honest answers. Sample items included “When using Instagram, I feel like other people are happier than I am”, “Using Instagram makes me feel like other people are more socially satisfied than I am”, “It bothers me when I see others' posts of happy/exciting events of their lives”, and “It eats me up inside when people I follow post pictures of parties I was not invited to”.

3.2 Sampling & Data Collection

The survey was distributed on the personal Facebook accounts of the authors as well as on the student Facebook groups for the Master in Communication programme for both first and second year students. The survey was further shared by the contacts of the authors using Facebook features (i.e., Messenger, status update) as well as through email. The survey was also shared on the personal Instagram accounts of one of the authors in hopes of reaching a different sample. A

snowballing effect was desired in sharing through social media platforms and authors' networks were asked to share further to their own networks. In total, 143 respondents completed the online survey.

3.4 Data Analysis

The data collected through Google Forms was exported as an Excel spreadsheet then loaded onto IBM SPSS Statistics version 24. The data was first adjusted for consistency, meaning that some respondents' productive written answers were corrected to fit the categories where appropriate (e.g., region of origin written as Romania corrected to Europe to fit with the remaining data). The data was then reorganised and one number for each variable was calculated for every respondent.

In order to correctly calculate the level of SCO, answers given for two items on the Iowa-Netherlands Comparison Orientation Measures were reverse coded as the question items were phrased negatively. This insured that on the Likert scale of 1 to 5, a higher number signified a higher SCO, making the answers compatible with the other items used for the scale. The six items were added for each respondent, resulting in a SCO score that ranged from 6 (low SCO) to 30 (high SCO). The three question items regarding the frequency of use/exposure to Instagram were coded into numbers and added for each respondent. The sum represented the frequency of exposure to Instagram and ranged from 3 (low exposure) to 12 (high exposure). Seven items asked in the Emotion section of the online questionnaire were added to compute the score for Envy that ranged from 7 (low experience of envy) to 35 (high experience of envy). In addition to these three major variables of SCO, exposure, and envy, a sum for questions regarding activity on Instagram was calculated that ranged from 5 (passive use) to 25 (active/interactive use). Responses for the questions regarding the types of people (friends, strangers, or acquaintances) the participants follow were also coded into numbers, 1 (0-25% of total accounts followed) to 4 (75-100% of total accounts followed).

The demographic data collected were organised through frequency tables in order to present the distribution of participants. Moderation and mediation were analysed through using the Hayes' PROCESS macro for SPSS, using Model 1 (simple moderation) and Model 4 (simple

mediation). Furthermore, correlations were calculated between activity and envy as well as for the types of people followed and envy. Spearman's correlation was applied instead of Pearson's as some of the variables were treated as ordinal instead of interval. This was because the some of the scales used had ranks but the distance between each number could not be said to be meaningful.

3.5 Validity & Reliability

The purpose of the present study was to investigate if Social Comparison Orientation moderates or mediates the relationship between exposure to Instagram and the emotion of envy. In order to fulfill our aim, three out of five subcomponents of our questionnaire were titled "Social Comparison Orientation", "Instagram Exposure", and "Emotions" and measured respondents' individual levels of social comparison, exposure to Instagram, and envy. For the purpose of validity, these three parts were designed taking previous studies and scales into consideration.

In order to measure the levels of Social Comparison Orientation (SCO), six items out of eleven of the English version of the Iowa-Netherlands Comparison Orientation Measure developed by Gibbons and Buunk in 1999 taken from Schneider and Schupp (2013) were used. The six items were selected in terms of relevance to the purposes of the present study. Exposure to Instagram was measured through six multiple choice questions developed taking into consideration previous studies that focused on the influence of social networking sites usage such as Facebook and Twitter on the psychological wellbeing of the users (Lup et al., 2015; Chou & Edge, 2012). Levels of the emotion of envy were measured based on Rentzsch and Gross's (2015) design of domain-specific envy scale. The items of this scale describe negative feelings that are stemmed from specific circumstances. The eight statements used were altered to make them suitable for the purpose of the present study. The words 'envy' and 'envious' were avoided when the items were constructed in order to elicit honest answers, as the emotion of envy is often kept secret because it is a socially undesirable term.

With regards to the reliability of the study, the effectiveness of the instrument was tested on two volunteers for a small pilot study before wider distribution. Changes were made to the survey after the pilot study. For example, the heading for section five was changed from 'Envy' to 'Emotions' which was an attempt to elicit reliable answers from participants regarding this negative emotion. Another change was made on the layout of the Likert scales so that it was clearer to the participants what the numbers signified.

While there are many obvious advantages to sharing and spreading the survey online through social media platforms, there are also limitations. When an online sample is used for a study, it is most often the case that the sample is more educated, younger, and have higher incomes than the larger population (Treadwell, 2016). This limitation was taken into regard when considering the instrument for data collection and was concluded to be an acceptable limitation as the study is on the topic of Instagram, and those who use the platform would most likely be reached through social media. Furthermore, snowball sampling is limited in the sense that people tend to be in networks with like-minded individuals and thus the sample may not be as diverse as desirable.

Despite our attempts to elicit honest answers regarding envy, it was still a challenge to obtain reliable answers regarding the emotion from the participants. As discussed in the theory chapter, envy is an undesirable emotion that people do not want to disclose. Although the survey was anonymous, the results show that many participants fell under the lowest bracket of the level of envy. As the survey relied on self-reporting, it is difficult to assess for reliability. However, the research maintains the view that an online survey where participants could rely on anonymity was the best instrument for measuring envy as opposed to in-depth interviews where participants may feel exposed.

3.6 Ethical Consideration

The participants were informed that the study will be anonymous and the results will only be used for academic purposes in the introductory section of the survey. Participants were informed that completion of the survey meant consenting to be a part of the research. The authors' contact details (email addresses) were listed and participants were informed that they could email in case

of any questions. No information that could compromise the anonymity of the individuals were asked throughout the survey. Participation in the survey was voluntary and the participants could quit the survey at any point.

4. Results

4.1 Demographic Information

A total of 143 respondents participated and fully completed the online survey. Out of the total, 58.7% (84 respondents) were female and 41.3% (59) were male. Europe was the most common region of origin with 67.1% (96), followed by Asia at 23.8% (34) and North America at 6.3% (9). The other regions together made up less than 3% of the total respondents. The most common age group of respondents was 20-29 year-olds at 52.4% (75), followed by 30-39 year-olds at 33.6% (54) and 40-49 year-olds at 9.1% (13). The other age categories together added up to less than 5% of the respondents. Regarding the level of completed education, the respondents were, as expected, highly educated. 87.4% (125) of the respondents had either a Bachelor's degree or higher (71 respondents with bachelor's degree, 51 master's, and 3 doctorate).

Table 1. Gender of Respondents

		Frequency	Percent	Valid Percent
Valid	Female	84	58,7	58,7
	Male	59	41,3	41,3
	Total	143	100,0	100,0

Table 2. Region of Origin of Respondents

		Frequency	Percent	Valid Percent
Valid	Africa	2	1,4	1,4
	Asia	34	23,8	23,8
	Europe	96	67,1	67,1
	North America	9	6,3	6,3
	Oceania	1	,7	,7
	South America	1	,7	,7
	Total	143	100,0	100,0

Table 3. Age and Education Level of Respondents

		Highest Level of Education (Completed/ A Year Left from Completion)					Total
		Lower than High School level education	High School/ Gymanasium	Bachelor's degree	Master's degree	Doctorate	
Age	19 and below	0	4	0	0	0	4
	20-29	2	7	38	27	1	75
	30-39	0	2	27	17	2	48
	40-49	0	2	5	6	0	13
	50-59	0	1	1	1	0	3
Total		2	16	71	51	3	143

4.2 Descriptive Statistics for Exposure, SCO, & Envy

Table 4 presents the number of respondents for the levels of the variables for exposure to Instagram, Social Comparison Orientation, and the emotion of envy. For exposure, the low level ranges from 3-5, average 6-9, and high 10-12. For SCO, the low level ranges from 6-13, average 14-22, and high 23-30. For envy, low level ranges from 7-16, average 17-25, and high 26-35. The majority of respondents fell within the average level of SCO and the low level of envy. In regards to exposure to Instagram, 91% of the respondents were categorised into low and average levels.

Table 4. Frequency Table of Respondents' Level of Exposure to Instagram, SCO, and Envy

	Levels	Low	Average	High	Total
Exposure to Instagram	Frequency	61	69	13	143
	%	42.7	48.3	9	100
SCO	Frequency	24	91	28	143
	%	16.8	63.6	19.6	100
Envy	Frequency	99	39	5	143
	%	69.2	27.3	3.5	100

Table 5 presents the mean, median, and mode of the three variables. While the mean, median, and mode of exposure and SCO fall within the average level, those of envy fall within the low level.

Table 5. Mean, Median, and Mode for Exposure, SCO, and Envy

	Exposure to Instagram	SCO	Envy
Mean	6.12	18.18	13.68
Median	6	18	13
Mode	6	18	7

4.3 Social Comparison Orientation as a Moderator

Moderation was calculated through PROCESS Model 1 for simple moderation. The overall model was $F(3, 139) = 18.11, p < .001, R^2 = .26$ meaning that about 26% of the total variance is explained by the model. For SCO, $b = .56, t(139) = 6.71, p < .001$ and therefore significant. For every one unit increase in SCO, there is a .56 increase in envy. For exposure, $b = .36, t(139) = 1.74, p = .08$ and therefore not significant. For the interaction, $b = .04, t(139) = .98, p = .33$ and also not significant. Thus, SCO was not a significant moderator of the relationship between exposure to Instagram and envy.

However, when looking at the slopes for exposure predicting envy at each level of SCO (table 6), one can observe the rise in significance for medium and high levels of SCO. For low SCO, exposure $b = .16, t(139) = .62, p = .54$. For average SCO, exposure $b = .36, t(139) = 1.74, p = .08$. Finally for high SCO, exposure $b = .57, t(139) = 1.74, p = .08$. Despite the fact that there was no statistically significant relationship at any level of SCO, the effects for average and high SCO were more significant than for low SCO. Thus, this indicates that for people with average and higher SCOs, exposure to Instagram has more effect on the outcome (envy) than for those with lower SCOs.

Table 6. Conditional Effect of Exposure on Envy at values of the Moderators

SCO	Effect (<i>b</i>)	<i>t</i>	Significance (<i>p</i>)
Low (≈13, centred at -4.61)	.16	.62	.54
Average (≈18, centred at 0)	.36	1.74	.08
High (≈23, centred 4.61)	.57	1.74	.08

Graph 1 visually represents the relationship between frequency of exposure to Instagram and the emotion of envy for different levels of SCO. It can be observed that the slope of the line increases as the SCO level increases. The graph confirms H1 that the more frequent the exposure to Instagram, the more likely an individual experiences envy. It also confirms H2 that people with higher SCOs would score higher on envy than those with lower SCOs at the same level of exposure. However, as previously stated, the result was found to be statistically insignificant.

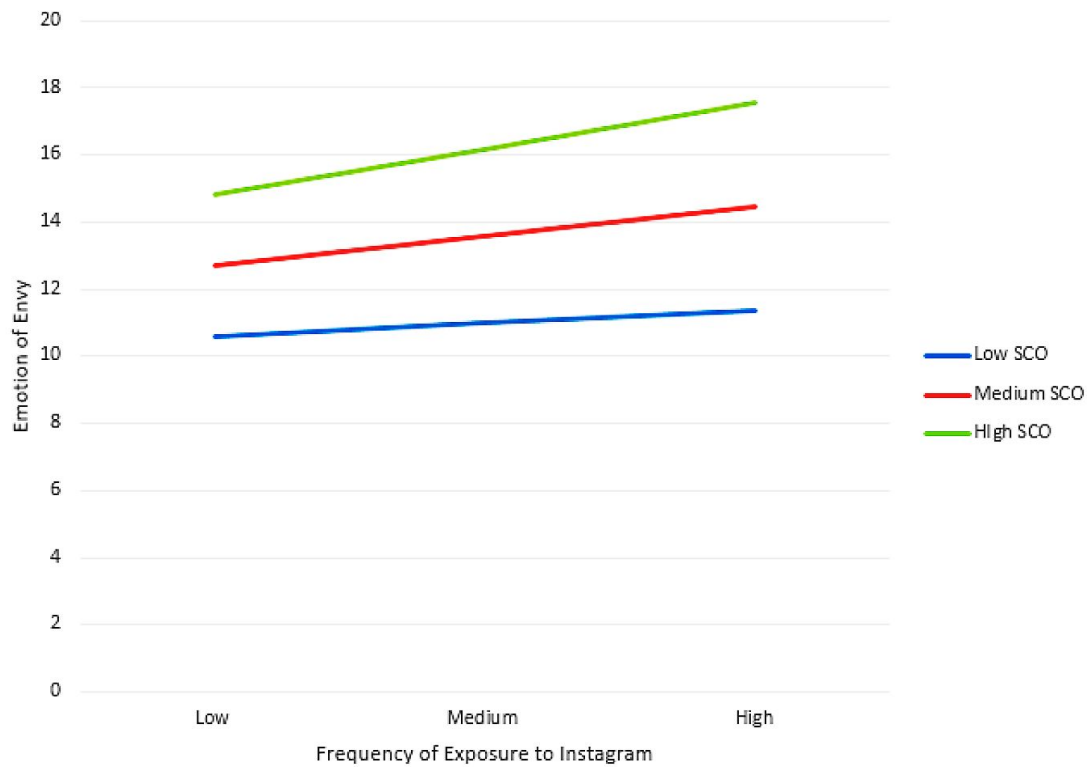
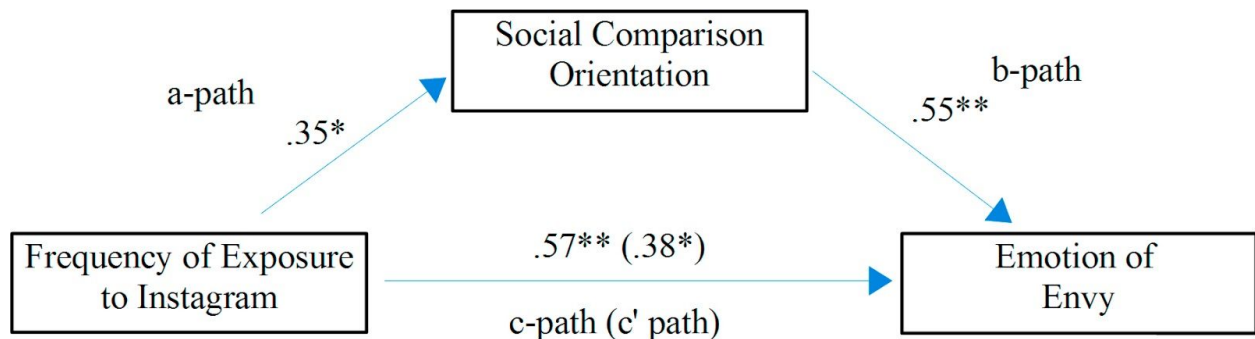


Figure 3. Relationship between frequency of exposure to Instagram and emotion of envy for different levels of SCO

4.4 Social Comparison Orientation as a Mediator

Mediation was analysed through PROCESS model 4 for simple mediation. As can be observed in Figure 3, frequency of exposure to Instagram (x) was positively related to the emotion of envy (y): $b = .57$, $t(141) = 3.05$, $p < .01$ (path c). Frequency of exposure (x) was also positively related to SCO (m): $b = .35$, $t(141) = 2.24$, $p < .05$ (path a). SCO (m) was also positively associated with the emotion of envy (y): $b = .55$, $t(140) = 6.08$, $p < .001$ (path b). Mediation analysis was conducted using bootstrapping method with 1000 bootstrap resamples to produce the 95% confidence interval. SCO as a mediator was significant and the indirect effect of exposure on envy was .19 with confidence intervals at .03 and .40. As the confidence intervals did not include zero, the mediation effect was significant despite c-prime path being significant therefore confirming H3 (the more frequent the exposure to Instagram, the more likely an individual scores higher on the SCO scale) and H4 (the higher the level of SCO, the more likely an individual experiences the emotion of envy).



.19 (CI .03, .40)

Figure 4. Standardized regression coefficients for the relationship between the frequency of exposure to Instagram and the emotion of envy as mediated by Social Comparison Orientation.

* $p < .05$, ** $p < .01$

4.5 Other Findings of Interest

As the survey collected data on a wide variety of topics based on previous studies, our analysis contained findings that are not directly related to our research question yet are still of interest to the academy. One such finding is the correlation between the percentage of strangers followed and the emotion of envy. The analysis found the two to be positively correlated and the correlation to be statistically significant. This suggests that the more strangers users follow, the more likely the users experience envy. In the analysis of how passive or interactive/active users are in relation to the emotion of envy, we found a negative correlation between the level of activeness and the level of envy. This suggests that the more interactive/active one is on social media, the less one tends to be envious. However, this correlation was not statistically significant.

Table 7. Correlation between Percentage of Strangers Followed and Emotion of Envy

			Strangers	Envy
Spearman's rho	Strangers	Correlation Coefficient	1,000	,246**
		Sig. (2-tailed)	.	,003
		N	143	143
	Envy	Correlation Coefficient	,246**	1,000
		Sig. (2-tailed)	,003	.
		N	143	143

** . Correlation is significant at the 0.01 level (2-tailed).

Table 8. Correlation of Instagram Activity and Emotion of Envy

			Activity	Envy
Spearman's rho	Activity	Correlation Coefficient	1,000	-,131
		Sig. (2-tailed)	.	,120
		N	143	143
	Envy	Correlation Coefficient	-,131	1,000
		Sig. (2-tailed)	,120	.
		N	143	143

5. Discussion

5.1 The Effect of Exposure to Instagram on Wellbeing

Previous studies have concluded that an important factor when it comes to social comparison opportunities and consequently to levels of psychological wellbeing is the frequency and intensity of exposure to social media platforms (Fox & Moreland, 2015; Batenburg & Das, 2015). Furthermore, research has also emphasised the fact that when using social networking sites, the posted information and images tend to be socially desirable (Wallace et al., 2016). Consequently, this may contribute to misperceptions of others' wellbeing, influencing the viewer's comparative wellbeing (Apple et al., 2015; Chou & Edge, 2012; Jordan et al., 2011; Lim & Yang, 2015). Close to what the current study aimed to investigate and in line with the aforementioned research, several studies have emphasised that the social comparison that occurs on social networking platforms has the potential to be harmful for some individuals, possibly leading to negative emotions (Chou & Edge, 2012; Fox & Moreland, 2015; Gonzales & Hancock, 2011; Haferkamp & Krämer, 2011; Johnson & Knobloch-Westerwick, 2014).

Our research focused on the negative emotion of envy as an outcome of exposure to Instagram, in relation to the personal orientation for social comparison (Apple et al., 2015; Lin & Utz, 2015; Nabi & Keblusek, 2014; Ven et al., 2009; Wallace et al., 2016). As Instagram affords great potential for constructing idealised self-presentational posts due to its image-oriented nature (Lup et al., 2015), this study equated exposure to Instagram with exposure to idealised self-presentation. The results of our data confirmed much of the previous research that showed the negative consequences of high exposure to social networking platforms.

In exploring whether Social Comparison Orientation acts as a mediator or moderator of the relationship between the frequency of exposure to Instagram and the emotion of envy, we found that it is a statistically significant mediator. This means that the frequency of exposure to Instagram predicts the level of SCO, which in turn predicts the level of envy experienced by the user. Our results revealed that the frequency of exposure to Instagram was positively related to both SCO and the emotion of envy. These positive relations between the variables mean that the

more the user is exposed to Instagram, the higher the user's SCO level tends to be (i.e., tendency to compare more) and the more likely the individual is to experience envious feelings. Thus, exposure to Instagram can be considered a significant predictor of the level of SCO. In turn, SCO is a significant predictor of the outcome (i.e., envious feelings). The indirect effect of exposure to Instagram on envy was .19 with confidence intervals at .03 and .40, making SCO a statistically significant mediator.

The implication of this finding that SCO acts as a mediator between the frequency of exposure to Instagram and the level of envy is that users are becoming more likely to compare with other people both online and off. As exposure predicts SCO (i.e., more exposure, the higher the tendency to compare), this translates to life offline. While it is not inherently negative to compare with others nor to have a high SCO (Gibbons & Buunk as referenced in Schneider & Schupp, 2013), it can be harmful to be engaged in constant upward comparisons (Rentzsch & Gross, 2015). Moreover, as our data illustrates that the level of SCO is positively related to the level of envy, there is little doubt that users are engaging in upward comparisons. The feeling that one lacks something that another has, whether it be material or immaterial, can be harmful to one's wellbeing, especially because envy is often kept secret (Smith & Kim, 2007).

While our analysis showed that SCO was not a significant moderator of the relationship between exposure to Instagram and the emotion of envy, the data illustrated that people with higher SCOs scored higher on the level of envy than those with lower SCOs at the same level of exposure to Instagram. Thus, although statistically insignificant, a higher SCO can potentially strengthen the outcome of being exposed to idealised self-presentational posts on Instagram.

5.2 The Perils of Communicating through Social Media Platforms

As stated in the theory chapter, computer-mediated communication allows its users to optimise their self-presentation through several different techniques (Chou & Edge, 2012). CMC is often asynchronous, which allows messages to be rehearsed, edited, and reprocessed (Toma & Carlson, 2015). Photographs are effective tools for constructing an ideal image of oneself

through careful selection and digital alteration. Therefore, Instagram offers the perfect social media platform for idealised self-presentation.

One of the advantages of social media platforms is being able to connect with people outside of one's immediate social sphere. On Instagram, this is facilitated even further through non-reciprocal following (Lup et al., 2015). However, previous studies have also found that individuals who follow a higher number of strangers on social media platforms are more likely to suffer negative emotions than those who follow fewer (Chou & Edge, 2012; Lup et al., 2015). This can be due to the fact that users do not have any information about strangers' lives other than the idealised image presented on social media, while users have other examples from their friends' lives that provide balance.

Our results confirmed previous studies and indicated a correlation between the percentage of strangers followed and the emotion of envy. There was a positive correlation between the percentage of strangers followed and the emotion of envy experienced, meaning that those who followed more strangers were more likely to experience envy. While the research also included an analysis of whether a correlation existed between the percentage of friends and acquaintances followed and the emotion of envy experienced, the results were not significant.

5.3 Practical Contributions

This research was conducted with the aim of furthering the understanding of the relationship between exposure to social media, in this case Instagram, and individuals' wellbeing. It has added to the extensive research on the subject of consequences of social media use while addressing a gap in literature on Instagram use in relation with Social Comparison Orientation and envy. The results confirmed previous studies' findings that there are dangers to engaging in social comparisons on social media.

Our results illustrated a positive relationship between frequency of exposure to Instagram and SCO as well as a positive relationship between SCO and the emotion of envy. While we are fully aware of the positive aspects of social media interaction and even of the motivational power of envy, our recommendation to users is to be conscious of the dangers of high exposure to

Instagram. If an individual could develop a higher tendency to compare with others through the frequent use of Instagram as our research implies, this means that he or she would seek more opportunities to compare socially. Thus, the individual would most likely be even more drawn to social media. This can be detrimental to an individual's wellbeing given the positive relationship observed between SCO and envy.

Although Instagram is harmless and social entertainment to some, it might be beneficial for other individuals to reduce their exposure. Individuals who find themselves higher on the SCO scale should avoid extensive use. Furthermore, parents and educators of youth should become aware of issues regarding Social Comparison Orientations and extensive exposure to social media. As mentioned in the introduction, RSPH in the United Kingdom found that Instagram was the worst rated amongst social media platforms in terms of its effect on youth's mental health (RSPH, 2017). In the report, #StatusofMind, published by RSPH in collaboration with Young Health Movement, recommendations for the government as well as for social media companies are outlined. Recommendations include highlighting when photos of people have been digitally manipulated and signposting support for those who may suffer from mental health issues. This research adds further support that these recommendations should be pushed forward for the welfare of the global population.

Furthermore, this research contributes to the discussion surrounding safer social media use at an opportune moment. While it has been a passionately debated topic for years, new studies (Primack et al., 2017; RSPH, 2017) have emerged recently that focus on consequences of extensive exposure on individuals' wellbeing. This study contributes to this discussion by furthering the understanding of the role that Social Comparison Orientations can play in the outcome of exposure to social media.

6. Conclusions

6.1 Findings of the Paper

This study investigated the role Social Comparison Orientation plays in the relationship between the frequency of exposure to Instagram and the emotion of envy by an analysis of data collected through an online survey. The research question set was as follows:

To what extent is Social Comparison Orientation a moderator or mediator of the relationship between frequency of exposure to Instagram and the emotion of envy?

In regards to SCO as a moderator, the results indicated that it was not statistically significant. However, an analysis of the relationship between frequency of exposure and envy for different levels of SCO showed that individuals who were more exposed to Instagram experienced higher levels of envy than those with less exposure (H1). Furthermore, those with higher SCOs scored higher on envy than those with lower SCOs at the same level of exposure to Instagram (H2). Due to the fact that this result proved statistically insignificant, this cannot be treated as a generalisable trend.

The results indicated that SCO is a statistically significant mediator. The indirect effect of exposure on envy was .19 with confidence intervals at .03 and .40. The fact that SCO functions as a mediator means that frequency of exposure to Instagram predicts the level of SCO and the SCO in turn predicts the level of envy experienced. These results confirmed that the more frequent the exposure to Instagram, the more likely an individual scores higher on the SCO scale (H3) and the higher the level of SCO, the more likely an individual experiences the emotion of envy (H4).

6.2 Significance for Communication Research

As we are connected to one another more than ever today due to the widespread use of social media platforms, a great part of our social lives take place online. Social networking sites can be used as facilitating tools for creating or enlarging social networks as well as for being connected

at all times to network members' experiences and life events. However, this great exposure and plethora of information offers rich opportunities for engaging in comparisons with others. This affordance of social networking platforms to generate social comparison behaviour has a great influence on the psychological wellbeing of the user and in turn may facilitate the experience of negative emotions such as envy.

Even though there is extensive research concerning aspects of social comparison, idealised self-presentation, and positive and negative effects of exposure to social media platforms such as Facebook and Twitter (Batenburg & Das, 2015; Chou & Edge, 2012; Fox & Moreland, 2015; Fox & Vendemia, 2016; Gonzales & Hancock, 2011; Michikyan et al., 2015; Taylor & Strutton, 2016; Young et al., 2017), there has not been equal amount of attention on Instagram. Furthermore, even though Social Comparison Orientation has been researched in terms of its role as a simple moderator (Yang, 2016), limited focus has been cast on its potential as a simple mediator. Thus, this research deemed it important to further the understanding of the relationship between the frequency of exposure and the emotion of envy on Instagram and to explore the role of Social Comparison Orientation as a moderator or mediator of this relationship. The findings of this research highlighted that Social Comparison Orientation was a statistically significant mediator rather than a moderator. The results indicate that individuals' SCO levels can be increased as a result of high exposure to social media. This is significant due to the relation between higher SCO levels and negative emotions.

6.3 Suggestions for Future Research

While this study has been conducted with the intent of representing a fairly distributed sample of Instagram users, a disproportionate amount of the respondents were highly educated. 87.4% were educated to at least Bachelor's level and 37.8% were educated to a Master's level or higher. This study believes that while there were other demographic factors that could have influenced the results, education level was one of the most important. Thus, this study could be repeated with a more controlled sampling of respondents.

The conclusion of this study that Social Comparison Orientation acts as a mediator of exposure to Instagram and the emotion of envy is a topic that needs further exploration in future research. As this conclusion entails that exposure to social media platforms such as Instagram is related to the increase of a person's tendency to compare with others, a study measuring a person's SCO and exposure to social media over time should be conducted.

Moreover, further exploration into the other findings of the study such as the correlation between strangers followed and the level of envy would be beneficial. The research has been consistent with previous studies that have stated that the more strangers followed, the more negative the impact of using social media. As the emotion of envy on its own has not been studied isolated from depressive symptoms, it is a worthy topic for exploration.

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Appendix 1: Survey

A Study on Instagram and Social Comparison

Please note that this survey is solely intended for frequent users* of Instagram.

(*uses the Instagram app at least 2-3 days a week on average)

The data collected in this survey will remain anonymous and will only be used for academic purposes. This research is conducted for a master level thesis project as part of the Master in Communication programme at Gothenburg University. The survey is divided into five parts and will take approximately 10 minutes to complete. By completing the survey, you are consenting to participate in this research.

If there are any questions regarding the research, please contact:

Ikumi Maekawa gusmaeik@student.gu.se

Noemi Elia Barac gusbarano@student.gu.se

* Required

Part I. Demographic Information

1. What is your age? *

Mark only one oval.

- 19 and below
- 20-29
- 30-39
- 40-49
- 50-59
- 60 and above

2. What is your gender? *

Mark only one oval.

- Male
- Female
- Other

3. Where is your region of origin? *

Mark only one oval.

- Africa
- Asia
- Europe
- Oceania
- North America
- South America
- Other: _____

4. What is your highest level of education? (completed/ a year left from completion) *

Mark only one oval.

- Lower than High School level education
- High School/ Gymanasium
- Bachelor's degree
- Master's degree
- Doctorate
- Other: _____

Part II. Social Comparison Orientation

"Most people compare themselves from time to time with others... There is nothing particularly 'good' or 'bad' about this type of comparison, and some people do it more than others. We would like to find out how often you compare yourself with other people. To do that we would like you to indicate how much you agree with each statement below by using the following scale."

- 1 = I disagree strongly
- 2 = I disagree
- 3 = I neither agree nor disagree
- 4 = I agree
- 5 = I agree strongly

(Abbreviated from the Iowa-Netherlands Social Comparison Orientation Scale)

5. I always pay a lot of attention to how I do things compared with how others do things. *

Mark only one oval.

	1	2	3	4	5	
I disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I agree strongly

6. **If I want to find out how well I have done something, I compare what I have done with how others have done.** *

Mark only one oval.

	1	2	3	4	5	
I disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I agree strongly

7. **I often compare how I am doing socially (e.g., social skills, popularity) with other people.** *

Mark only one oval.

	1	2	3	4	5	
I disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I agree strongly

8. **I am not the type of person who compares often with others.** *

Mark only one oval.

	1	2	3	4	5	
I disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I agree strongly

9. **I often compare myself with others with respect to what I have accomplished in life.** *

Mark only one oval.

	1	2	3	4	5	
I disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I agree strongly

10. **I never consider my situation in life relative to that of other people.** *

Mark only one oval.

	1	2	3	4	5	
I disagree strongly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I agree strongly

Part III. Instagram Exposure

11. How many days a week do you use Instagram? *

Mark only one oval.

- 2-3 days/week
- 4-5 days/week
- 6-7 days/week

12. How long do you spend on Instagram per visit on average? *

Mark only one oval.

- 0-10 minutes
- 11-20 minutes
- 21-30 minutes
- More than 30 minutes

13. How much time do you spend on Instagram in a week? *

Mark only one oval.

- Less than 30 minutes
- 30-60 minutes
- 60-90 minutes
- 90-120 minutes
- More than 120 minutes (2 hours)

14. Out of the people you follow on Instagram, what percentage are your friends in real life? *

Mark only one oval.

- 0-25%
- 26-50%
- 51-75%
- 76-100%

15. Out of the people you follow on Instagram, what percentage are acquaintances? *

Mark only one oval.

- 0-25%
- 26-50%
- 51-75%
- 76-100%

16. Out of the people you follow on Instagram, what percentage are strangers you have never met? *

Mark only one oval.

- 0-25%
- 26-50%
- 51-75%
- 76-100%

Part IV. Instagram Activity

Please select the relevant point on the scale where

- 1= Never
- 2= Rarely
- 3= Sometimes
- 4= Very Often
- 5= Always

17. How often do you comment on or reply to others' posts? *

Mark only one oval.

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

18. How often do you tag others in your posts or comments? *

Mark only one oval.

	1	2	3	4	5	
Never	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Always

19. How often do you "like" others' posts? *

Mark only one oval.

1 2 3 4 5

Never Always

20. How often do you browse the home page without liking or leaving comments? *

Mark only one oval.

1 2 3 4 5

Never Always

21. How often do you check out others' profiles without liking or leaving comments? *

Mark only one oval.

1 2 3 4 5

Never Always

Part V. Emotions

Please select the relevant point on the scale where

1 = Not at all

2 = To a small extent

3 = To some extent

4 = To a moderate extent

5 = To a large extent

22. When using Instagram, I feel like other people are happier than I am. *

Mark only one oval.

1 2 3 4 5

Not at all To a large extent

23. When using Instagram, I feel like other people have better lives than I do. *

Mark only one oval.

	1	2	3	4	5	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	To a large extent

24. **Using Instagram makes me feel like other people are more socially satisfied than I am. ***
Mark only one oval.

	1	2	3	4	5	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	To a large extent

25. **It inspires me when I see others' posts of happy/exciting events of their lives. ***
Mark only one oval.

	1	2	3	4	5	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	To a large extent

26. **It bothers me when I see others' posts of happy/exciting events of their lives. ***
Mark only one oval.

	1	2	3	4	5	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	To a large extent

27. **It eats me up inside when people I follow post pictures of parties I was not invited to. ***
Mark only one oval.

	1	2	3	4	5	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	To a large extent

28. It is hard for me to bear when people I follow post beautiful pictures of themselves. *

Mark only one oval.

	1	2	3	4	5	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	To a large extent

29. It bothers me when people I follow post pictures of their luxurious vacations. *

Mark only one oval.

	1	2	3	4	5	
Not at all	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	To a large extent

Appendix 2: Students' Contribution to the Joint Thesis

	Major	Minor
Introduction	Noemi	Ikumi
Theoretical Background	Noemi	Ikumi
Methodology	Ikumi	
Results	Ikumi	
Discussion	Noemi, Ikumi	
Conclusions	Noemi, Ikumi	