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An Investigation into Asynchronicity as a Contributing Factor to Self and Social Perceptions of Online Self-Disclosure

Christopher Edmondstone
University of Windsor

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By

Christopher Edmondstone

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Christopher Edmondstone

APPROVED BY:

_____
Dr. Suzanne McMurphy,
Sociology, Anthropology, Criminology

_____
Dr. Alan Scoboria,
Psychology

_____
Dr. Ken Cramer,
Psychology

September 7, 2016

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ABSTRACT

The present study involved the examination of asynchronicity in eliciting online self-disclosure. Using an experimental design with 94 participants, researchers investigated the extent to which self-disclosure levels were impacted by using an asynchronous versus synchronous mode of communication. Participants had either a synchronous or asynchronous online interaction with a researcher, who they were told was a fellow participant, in which they answered a series of increasingly personal self-disclosure questions. Participants' self-disclosure levels were determined by raters who examined the transcripts as well as self-report questions participants completed after concluding the interaction. The results indicated that there were no significant differences between groups across depth, breadth, and decline-to-answer variables. The findings are interpreted within the context of online self-disclosure research and suggestions for future studies are made.

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CHAPTER 1

INTRODUCTION

As of 2012, 83% of Canadian households had access to the Internet (Statistics Canada, 2013). These users have contributed to a total of over 3.3 billion internet users globally, or roughly 46% of the world's population (Internet World Stats, 2015). Of the various activities carried out online, one of the most common is communication, for example e-mail, as the number of worldwide e-mail accounts reached 4.1 billion in 2014, and is expected to grow to 5.2 billion by the end of 2018 (Radicati, 2014). Another form of communication carried out online is instant messaging. Although not as ubiquitous as e-mail, instant messaging remains a popular and frequently used communication tool for internet users as the number of global accounts totalled over 3.2 billion as of 2015, and is expected to reach 3.8 billion by the end of 2019 (Radicati, 2015).

One of the factors facilitating and encouraging growth for these two communication modalities involves the varieties of technology being used to access them. A major contributor to online communication account growth includes mobile devices, which make access and use of accounts both easier and more convenient for users, thus permitting increased use (Radicati, 2014). Inextricably linked to the growth in user accounts for online communication is the amount of time people spend online each day. A recent report illustrated that, as of 2015, people in the United Kingdom were spending an average of 20 hours and 30 minutes online per week, up from 9 hours and 54 minutes in 2005 (Ofcom, 2015). Indeed, the statistical evidence pointing to the ubiquitous nature of digital media exposure is vast; a recent cross sectional study of 350 children, aged six months to four years, revealed that three fourths own a mobile device themselves, 96.6% use a mobile device, and most of the children started using a mobile device before age

one (mostly tablets and smartphones for the purpose of content delivery applications such as YouTube and Netflix) (Kabali et al., 2015).

In addition to time, individuals are also spending more money on communication services and devices: recent data from a report by the Canadian Radio-television and Telecommunications Commission showed an increased expenditure of 10% in the average Canadian household between 2013 and 2014 on Internet services as well as an increase of 14% on mobile wireless expenditures in the same time span (CRTC, 2015).   Proportionally, online communication takes up approximately 19% of total time users spend online with an additional 22% occupied by social networking websites (GO-Gulf, 2012). The increasing bifurcation of people's lives between the on- and offline world leads to questions regarding discrepancies in behaviour between the two contexts. Specifically, in the social domain, researchers have begun to investigate the differences seen in how individuals interact and communicate with each other on various online platforms versus every day conversations in the real world.

Research has indicated that some people behave in appreciably different ways on- versus offline when faced with similar situations (Joinson, 2003). Broadly, Joinson (2003) has identified several domains in which on- and offline behaviour may be incongruent. Examples of dual and contradicting behaviours may include: an individual who is shy and socially anxious in real world situations may be flirtatious and comfortable with making romantic overtures on the Internet; someone may act with discretion and reservation offline but engage in rumour mongering and gossip online; another individual may seek out material online that he or she would never pursue in real life such as pornography, violent videos, or even more benign yet potentially embarrassing material such as personal health information. Researchers interviewed a group of youth regarding the rules that govern offline social behaviour and those that apply to

social networking sites; the participants consistently identified a discrepancy in the amount of

information shared between the two venues, always in the direction of greater openness, or a

tendency to share more information, in online contexts (Hooper, 2012).

Theory of Online Disinhibition

This loosening of the restrictions around what people are willing to do and say online (as

opposed to offline) has been termed disinhibition, or the *online disinhibition effect* (Joinson,

1998; Suler, 2004). Per Suler, (2004) online disinhibition occurs when "…people say and do

things in cyberspace that they wouldn't ordinarily say and do in the face-to-face world" (p. 321).

It encompasses the behaviours produced by the reduction in anxiety concerning public

evaluation, specifically a reduction of self-consciousness and anxiety over social situations. The

behaviours stem from an absence of the normal social constraints that regulate face-to-face

interactions; they result from attenuation of an individual's concerns over self-presentation,

social desirability, and the judgment of others (Joinson, 1998).

As a construct, online disinhibition has been divided into two separate sub-classifications:

toxic and benign (Suler, 2004). The concept of toxic online disinhibition involves those

behaviours that are deemed to be undesirable, malevolent, or destructive and produced as a result

of conditions specific to the online world. Toxic online disinhibition encompasses a variety of

malicious and destructive behaviours that one may partake in online including such activities as

cyber bullying, flaming (sending hostile and insulting messages), consuming violent/hateful

content, and other online behaviours that can generally be considered antisocial, or disruptive

and destructive. Although empirical study of the construct is in its infancy, there is some

evidence linking online disinhibition and at least one of the aforementioned negative behaviours

– cyber bullying, or deliberate and repetitive harmful and harassing behaviours through the use of information and communicative technologies (Hinduja & Patchin, 2015; Udris, 2014). Based off of Suler's theory, Udris (2014) developed the Online Disinhibition Scale, an 11 item scale created to assess online disinhibition levels, and administered it to a sample of Japanese high school students. Udris found that those endorsing toxic disinhibition items were 1.15-1.20 times more likely than those who did not to have engaged in cyber bullying when variables of gender, age, and Internet use were controlled for.

An effective illustration of toxic online disinhibition comes from a series of incidents that transpired at Colgate University in the fall of 2014 (Vogt & Goldman, 2015). A group of minority students at Colgate, a traditionally white, non-ethnically diverse university, reported experiencing various acts of racial insensitivity at the hands of staff and students, and formed an organization aimed at improving conditions for minority students – the Association of Critical Collegians (ACC). The ACC executed a five day sit in at the university's admissions office and presented school administration with a list of 21 demands including: diversity training for staff at the financial aid office, hiring more diverse faculty, and building a discussion of privilege and systemic power dynamics into the school's core curriculum. The ACC's protest was met with a parallel protest of sorts on the social networking application Yik Yak, an app that allows users within a ten mile radius of each other to post and read anonymous messages (the app is popular at college campuses for its geographic specificity). Students at the school used the app to chastise the group's cause and make personally degrading comments, consistently of a racial nature, against its members. The ACC organized another on-campus solidarity protest, in conjunction with protests that were occurring in Ferguson, MO at the time. Students opposed to the group's goals escalated their vitriol on Yik Yak to target specific members of the ACC, who were

degraded and threatened with violence. Yik Yak posters promised to organize a counter-protest to the ACC's, however, when the time came, no members of the student body were present to actively counter-protest the ACC's Ferguson solidarity rally.

On the opposite end of the online disinhibition spectrum is benign disinhibition, which includes behaviours that are potentially constructive, productive, and benevolent, but at the very least are not harmful. These behaviours include acts, carried out online due to the specific conditions present on the internet that do not exist in an offline context, that may produce some beneficial result for the participant or another individual. Examples of benign disinhibition behaviours include increased charitable donations, greater therapeutic self-disclosure, or more acts of kindness or generosity (Suler, 2004). One such example of benign disinhibition in the form of charitable donations was seen when a Greece, NY bus monitor was bullied by a group of students who then uploaded the video to the Internet (Ortiz, 2012). In response, anonymous contributors from across the Internet donated over $700,000 to the woman through a fundraising campaign (Del Giallo, 2012).

Suler (2004) has theorized six factors that are inherent to the Internet and that combine to create the conditions that facilitate online disinhibition. Individually, the factors are theorized to promote an equal opportunity for toxic or benign disinhibition to occur – they are not predicted to be more or less likely to result in one disinhibitive subtype over the other. Whereas some factors may produce more disinhibition than others, it is proposed that they work in concert to produce online disinhibition. The first factor is *dissociative anonymity*, or the reduced sense of vulnerability that people experience when they believe their actions online are separate from their in-person identity. Second is *invisibility* – the fact that people are often neither seen nor heard on the Internet – which amplifies disinhibition as individuals do not experience worry over

how they may be perceived from an appearance standpoint. The third factor is *solipsistic*

introjection which involves the alteration of self boundaries caused by the absence of social cues

including verbal, paraverbal, and facial cues that typically guide conversation and provide a

distinction between the self and other in interactions. Solipsistic introjection includes the

theorized phenomenon of experiencing online conversations as talking to/with oneself (i.e.,

reading another's message as a voice in one's own head, not a separate human who exists outside

of the online context) which ultimately encourages disinhibition because, for the participating

individual, it feels safer and less likely to produce negative consequences than communicating

with others. The fourth factor, *dissociative imagination*, encompasses the process through which

an individual experiences the online world as fiction and offline world as fact, thus encouraging

behaviour on the Internet that he/she believes will be free of repercussions in reality. Fifth,

minimization of status and authority, involves the disinhibition that is a product of an absence of

the normal markers of status and authority that are apparent in everyday life; things such as

dress, speech, and body language.

Asynchronicity in Online Communication

The final proposed factor, and the focus of the present study, involves asynchronicity, or

the disinhibition that results from the absence of real-time feedback. It is theorized that when

communication taking place online offers long gaps between responses, the individual becomes

disinhibited due to an absence of immediate feedback which would normally steer a conversation

toward the direction of adhering to social norms (Suler, 2004). This process has been likened to

an emotional hit and run, the real life analogy for which may be "…speaking to someone,

magically suspending time before that person can reply, and then returning to the conversation

when one is willing and able to hear the response" (Suler, 2004, p. 323).

While asynchronous modes of communication present gaps of varying lengths between communication turns, synchronous modes involve real-time interactions between conversational partners who are aware their messages are being actively received, and are generally aware exactly who is receiving those messages (Dennis, Fuller, & Valacich, 2008). Synchronous forms of communication include situated (face-to-face) conversations and telephone conversations. Additionally, instant messaging is considered semi-synchronous because it has the potential to be either asynchronous or synchronous due to varying delays in length of feedback. Asynchronous communication is marked by delays in feedback and a potential lack of awareness regarding the time at which one's message will be read and returned (Dennis et al., 2008). The primary form of asynchronous communication in an online context is e-mail, however, this form of communication has been existence for a significant period of time as letter-writing can be considered the offline predecessor to e-mail. A visual representation of Suler's (2004) theory, including the specific elements relevant to this study can be found below in Figure 1.
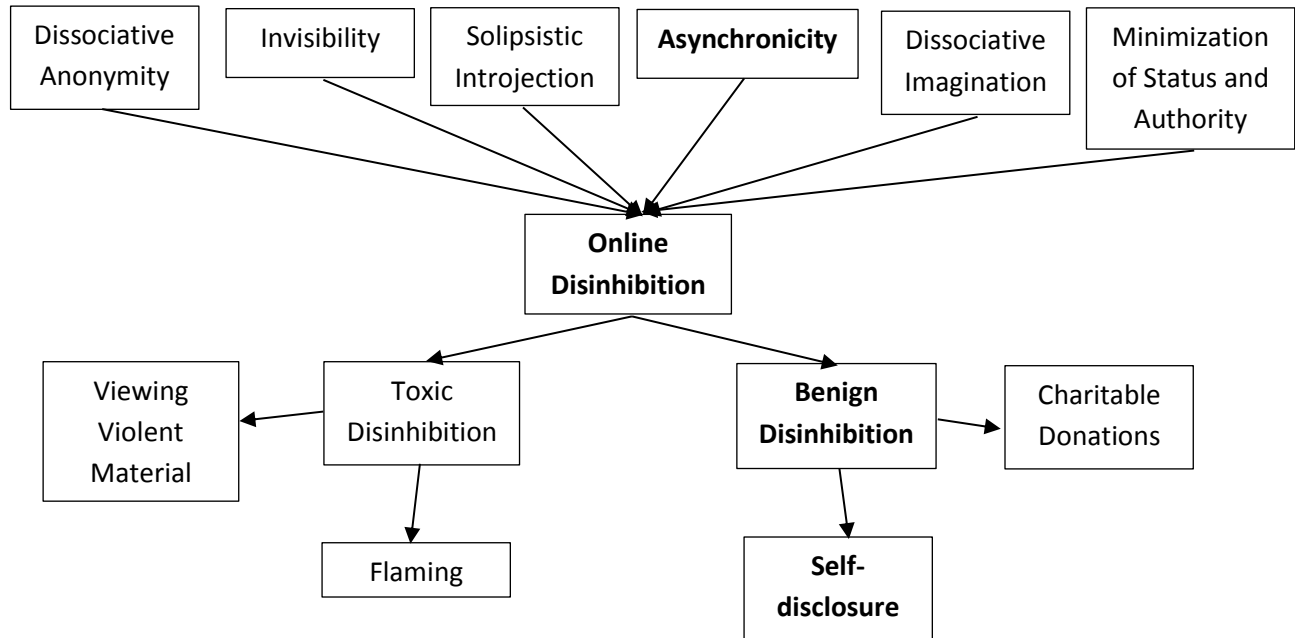
Figure 1. Visual representation of the theory of online disinhibition. The bolded pathway represents the specific elements examined in the present study.

Deindividuation Theory

In considering explanations of disinhibited social behaviour that pre-date the online world, it is necessary to review deindividuation theory and examine potential conceptual links. Deindividuation was originally described as the reduced inhibition and accountability an individual experiences when he/she is in a group setting (Festinger, Pepinger, &Newcomb, 1952). Additionally, theorists have asserted that the individual in a group setting loses his or her sense of self-identity and self-awareness, facilitating the conditions for him or her to act in ways he or she otherwise would not (Diener, 1980; Zimbardo, 1969). Originally, deindividuation was proposed to disinhibit exclusively antisocial behaviour (Zimbardo. 1969). However, subsequent studies showed that, like online disinhibition theory, deindividuation may lead to pro- or antisocial behaviour (Johnson & Downing, 1979). Johnson and Downing (1979) found that an

individual's likelihood of engaging in either pro- or antisocial behaviour was largely cue

dependent and could be experimentally manipulated.

In terms of the proposed causal mechanism of deindividuation, a body of evidence has

emerged pointing to the importance of anonymity as a potential causal factor (Diener et al.,

1976; Silke, 2003; Zimbardo, 1969). In Diener et al.'s (1976) now classic study of

deindividuation, anonymity was cited as the proposed cause explaining the behaviour of trick-or-

treaters who took extra candy from bowls while in large groups or in identity-concealing

costumes. Zimbardo (1969) likewise demonstrated that women who wore hoods to conceal their

identities were more likely to administer a shock, that they believed would be delivered to an

individual in another room, than were women without hoods. A study of the effects of self-

differentiated and undifferentiated groups revealed that exposure to transgressive and prosocial

behaviour (of an experimenter's confederates) had stronger effects on the behaviour of self-

undifferentiated groups in anonymous as opposed identifiable conditions (Nadler, Goldberg, &

Jaffe, 1982). The role of anonymity offers a conceptual bridge spanning between disinhibition in

the online and offline world. In fact, multiple studies have been conducted that have corroborated

the role of anonymity in online disinhibition, lending further support to Suler's (2004) first

proposed causal factor. One study examined participants' responses to a controversial white

supremacist message, all of whom opposed the message, asking them to compose a response,

either anonymously or as an identified individual, to a hypothetical person who also opposed the

message (Douglas & McGarty, 2002). It was found that those in the anonymous condition were

less likely to use abstract language than those in the identifiable condition when describing the

author of the hateful letter, meaning that the anonymous group used more (often insulting)

adjectives, and fewer description action verbs to characterize the original author (Douglas &

McGarty. 2002). Deindividuation and anonymity have also been examined in relation to online survey responses and self-disclosure, specifically, the proclivity for adolescents to share sexual information with others (Chiou, 2006). Respondents, particularly males, exhibited a greater tendency to disclose sexual information online when they were aware that their identities were unknown (Chiou, 2006).

Contrasting Asynchronous and Synchronous Communication

One of the most salient differences between synchronous and asynchronous communication modes is the availability of social control processes, or attempts to exert influence over the behaviour of others – effort that is invested to produce an effect in another person that would not have existed had that effort not been invested (Edinger & Patterson, 1983). It can generally be stated that, as communication types move from synchronous to asynchronous, there are fewer options available in terms of the varieties of social control processes that are accessible to those participating in the communication. When considering the purest form of synchronous communication – situated conversation, the nonverbal behaviours at the disposal of an individual are abundant: interpersonal distance, gaze, touch, body orientation, lean, facial expressiveness, talking duration, interruptions, posture openness, head nods, as well as paralinguistic cues such as volume, speech rate, and intonation (Edinger & Patterson, 1983). As the mode of communication moves to semi-synchronous (a mode of communication that can be either synchronous or asynchronous e.g. online chat) and then asynchronous, especially in online contexts, the aforementioned nonverbal involvement behaviours begin to diminish in their availability, which ultimately introduces considerations regarding the impact of the reduction of social manipulation strategies.

Types of Social Control Processes

In considering the variety of social control processes presented herein it is important to weigh their relevance to the present course of research. The herein cited studies' relation to the present research is in the consideration of how these foundational patterns of interaction translate, if at all, to different modes of communication, since all the studies described involve synchronous modes of communication. The studies cited herein serve to offer insight into what potential differences may form between synchronous and asynchronous communication modes. Lastly, it is worth considering the contrast between how individuals conduct themselves in contexts of online and offline communication because this study will be conducted online whereas much of the discussed research was conducted in person. Much of what is outlined is not present in the online communication world, which raises questions regarding what the effects are of fewer social control processes being available to individuals engaged in communication with each other.

Social control processes work in a variety of ways to exert influence over the actions of others (Edinger & Patterson, 1983). Social control processes include: status, power, and dominance; persuasion; feedback and reinforcement; deception; and impression management. The social control process of status, power, and dominance involves the hierarchy that is evident in social situations; it includes nonverbal behaviours such as gaze and touch relations within the context of establishing social hierarchy. A nonverbal behaviour that is often deployed with the goal of establishing one's high status, power, and dominance is eye contact. Eye contact has been shown to separate those perceived as powerful, dominant, and high in status from those perceived as weak, submissive, and low in status in that various studies have found that those who engage in more eye contact are routinely associated with belonging to the former group (Ellsworth & Carlsmith, 1973; Thayer, 1969). In a study conducted by Ellsworth and Carlsmith

(1973), participants were provoked by the experimenter, who they were sitting across the table from, to be angry. Following this anger manipulation, participants were allowed to administer an electric shock to the experimenter provided they first give him a warning. After being informed that they were about to be shocked, the experimenter either cast his gaze downward or made eye contact with the participant. It was found that those participants who had their gaze met were significantly less likely to shock the experimenter. The authors have interpreted these results to be an indication of the wielding of dominance in that once the experimenter made eye contact the exchange became a confrontation and the lack of shock represented a forfeiture or backing-down on the part of the participant (Ellsworth & Carlsmith, 1973).

A second nonverbal behaviour studied within the context of status, power, and dominance has been touch (Goffman, 1967; Henley, 1973). Researchers have identified a phenomenon known as "touch privilege" whereby, in social interactions, those of a higher status partake in the touching of others as a way to communicate and fortify their position in the immediate social hierarchy. One study examined asymmetrical touch relations between doctors and nurses on a single floor of a hospital, and found that doctors touched other employees as a way to convey friendly support and comfort, but those same employees felt that it would be presumptuous for them to reciprocate a doctor's touch and definitely would not initiate an equivalent touch (Goffman, 1967). Another study looked at naturalistic instances of touch behaviour with the hypothesis that nonreciprocal touch is an indicator of status or dominance (Henley, 1973). Researchers observed people at banks, shopping centres, a beach, and a college campus and found that touch was more often initiated by males than females, by older persons than by younger persons, and by individuals of higher socioeconomic status than lower SES (Henley, 1973).

More recently, research has focused on individual's beliefs about nonverbal behaviours expressed by more or less powerful individuals (Carney, Hall, & Lebeau, 2005; Tiedens, Ellsworth, & Mesquita, 2000). One study asked participants to think of individuals of low or high power, or low or high rank within an organization, and to rate to what extent such persons would exhibit 70 different nonverbal behaviours or skills (Carney et al., 2005). Participants thought that powerful, high-ranking people would execute the following behaviours significantly more frequently than less powerful, low ranking people: initiating hand shaking, glaring, gesturing, touching the other, and orienting their head toward the other. Likewise, they considered low ranking, less powerful people to be significantly more likely to do the following: avert their gaze, pause often (during speech), and display "facial fear". These results indicate that people may be likely to carry out these behaviours themselves, or interpret others' doing so in a predetermined way (Carney et al., 2005).

Another social control process is persuasion, or how effective an individual is at convincing others of something. The implementation of nonverbal behaviours has been associated with higher levels of perceived persuasiveness (Burgoon, Birk, & Pfau, 1990; LaCrosse, 1975; Maslow, Yoselson, & London, 1971). Most recently, it was found that video-recorded speakers who were rated as more persuasive than others were more likely to engage in greater vocal pleasantness, particularly fluency and pitch variety, facial expressiveness, and bodily relaxation (Burgoon, Birk, & Pfau, 1990). Compared to counsellors who initiated minimal nonverbal behaviours, those who implemented nonverbal affiliation behaviours (smiling, positive head nods, gesticulations, maintenance of eye contact at least 80% of the time, direct shoulder orientation, and a 20 degree forward body lean) were perceived by participants as being more persuasive (LaCrosse, 1975). Similar results have been uncovered in studies using different

methods: participants viewed video tapes of law students delivering defense arguments in either a kinaesthetically confident manner – hand gesticulations and near constant eye contact maintained with the camera – versus those in a kinaesthetically unconfident manner – neither hand gesticulations nor eye contact with the camera. Participants were subsequently asked to deliver a verdict regarding the guilt of the hypothetical individual standing trial, and it was found that they were significantly more likely to proclaim the defendant not guilty had they viewed a defense argument from a student engaging in various confidence-enhancing nonverbal behaviours.

A third social control process includes feedback and reinforcement, both of which can be subtle ways of exerting influence over another person, affect subsequent performance, and alter another person's role in an interaction. In two separate studies, nonverbal reinforcement has been shown to affect test performance (Isenberg & Bass, 1974; Stewart & Patterson, 1973). To begin, it was found that individuals receiving nonverbal reinforcement in the form of head nodding, smiling, and eye contact performed better on the WAIS than those who received no nonverbal reinforcement (Isenberg & Bass, 1974). Similarly, it was found in a study of Thematic Apperception Test respondents that those who received eye contact and a forward body lean gave more thematic responses than those who received no nonverbal reinforcement (Stewart & Patterson, 1973). Another context in which the impact of nonverbal reinforcement has been studied is in employment interviews (Keenan, 1976). Participants were asked to view videos of individuals who had been interviewed and who were reinforced differentially, either receiving nonverbal approval or disapproval. Candidates in the approval condition were judged to be more relaxed, more comfortable, and less ill-at-ease than subjects in the disapproval condition. They

were also seen as being friendlier toward the interviewer, more talkative, and more successful in creating a good impression (Keenan, 1976).

Nonverbal behaviour has also been examined within the context of the social control process of deception. In one elucidating study, researchers (Ekman & Friesen, 1974) asked participants to view a film and then respond to questions, in person, to an interviewer in either a truthful or deceptive manner, which was recorded. A second set of participants were asked to watch the recorded interview and answer whether or not they believed the interviewee to be responding truthfully. Individuals in the deceptive condition stated that, when lying, the behaviours that they censored the most in order to successfully deceive the interviewer were facial expressive behaviours more than body behaviours. Contrarily, those who viewed the videos and were most successful in identifying liars indicated that the behaviour they observed most to come to the conclusion of whether a person was lying or not was body behaviour. These individuals identified that the hallmark nonverbal behaviour of an individual being deceptive was a calm facial expression but active hands, feet, legs, and arms (Ekman & Friesen, 1974). Audiotapes of the same interviews were then examined to establish paralinguistic correlations to deception. It was found that a high vocal pitch was associated with deception while a low vocal pitch was perceived by listeners as being sociable and relaxed. Additionally, it was found that answering a question immediately after being asked, or latency, was associated with truthfulness while a longer answer, or duration, was associated with deception (Ekman & Friesen, 1974). Other researchers have shown that when there is additional information – besides the content of speech – available to listeners, such as third party opinions and physical evidence, listeners will seek out such information to detect a lie (Park, Levine, McCornack, Morrison, & Ferrera, 2002).

However, when no such alternate evidence is available, listeners will pay primary attention to nonverbal behaviours to detect lies (Vrij & Mann, 2005).

A final social control process that has been studied is impression management – a person's behavioural strategy designed to create some beneficial image or presentation of the individual. One study simulated an interview for a bank loan, asking participants to decide on the suitability of the applicant who had low, average, or high financial resources paired with either the employment or absence of nonverbal involvement including smiling, hand gesturing, eye contact, and appropriate tone of voice (Wexley, Fugita, & Malone, 1975). It was found that those who employed nonverbal behaviours were deemed more suitable for a bank loan compared to those who did not when the "applicants" had equivalent financial resources. Gaze, or eye-contact, had specifically been highlighted as important for creating a positive impression (Sherer, 1974). One study conducted interviews with participants and had the interviewer engage in either low or high gaze (Sherer, 1974). In comparison to their high-gazing counterparts, the non-gazing interviewers were rated by respondents as less attractive, they were given the shortest answers to their questions, and had subjects sit farthest from them during a debriefing session (Sherer, 1974). More recently, in a field study of real job interviews, it was shown that nonverbal reactions occurred faster, perhaps even to the point of being spontaneous, than verbal attempts at impression management, suggesting that these behaviours may be beyond the control of the individual (Stevens & Kristof, 1995).

Self-Disclosure

The specific online-disinhibition behaviour of interest in this study, and the study's dependent variable, is self-disclosure. Generally, self-disclosure is the process in which an individual reveals personal information to another person or group; it can involve any type of

information about the person that was not known prior to an interaction including age, religion, gender, thoughts, emotions, interpersonal relationships, and problems (Jourard, 1958). It plays a central role in the developing and maintaining close relationships in which individuals like each other (Sprecher, Treger, & Wondra, 2012). Throughout the literature, self-disclosure has conceptually been divided between depth and breadth where depth refers to the intimacy of the disclosure and breadth refers to the amount, or extent of unique pieces, of information disclosed. An intimate self-disclosure typically contains high-risk information that may leave an individual feeling a sense of personal vulnerability or discomfort (Derlega, 1988; Kelly & McKillop 1996; Laurenceau, Barrett, & Pietromonaco 1998). The disclosure may reveal information about the discloser's personally-held emotions, thoughts, beliefs, attitudes, and ultimately lead to feelings of personal vulnerability. The vulnerability inherent in intimate self disclosures may be associated with psychological/emotional vulnerability (i.e., expressing previously-secret feelings for someone), physical harm (i.e., revealing personal contact information), or material damage (i.e., revealing personal financial information) (Moon, 2000). The self-disclosures elicited by the manipulations in the present study were projected to be most likely to result in potential feelings of psychological and emotional vulnerability, as opposed to physical or material.

From a theoretical context, three consequences have been proposed to result from self-disclosure, they are: 1) the individual being disclosed to learns the extent to which he or she differs from or are the same as those who disclose to him or her, 2) the individual being disclosed to learns about the discloser's needs which enables him or her to help the discloser meet those needs or ensure those needs will not be met, and 3) the individual being disclosed to learns the extent to which the discloser behaves in a moral and ethical way or deviates from moral and ethical standards (Jourard, 1971). The effects of self-disclosure on interpersonal

relationships have been examined empirically as well. Researchers conducting a meta-analysis reported three distinctive effects that emerged in an interdependent feedback loop: 1) people who engage in self-disclosure tend to be liked more than those who do not engage, 2) people disclose more to those whom they like, and 3) after disclosure, people like others as a result of having disclosed to them (Collins & Miller, 1994).

The consequences of intimate self-disclosures have been empirically investigated; those consequences have been accumulated and categorized into positive and negative outcomes by Kelly and McKillop (1996). One study examined the impact of self-disclosure in the form of writing about traumatic experiences on student health (Pennebaker & Beall, 1986). Participants were assigned into four conditions that asked them to write about: a) a trivial event, b) the facts surrounding a personal traumatic event, c) the emotions surrounding a personal traumatic event, or d) the facts and emotions surrounding a personal traumatic event. It was found that those participants who wrote about the facts and emotions surrounding a traumatic event made significantly fewer visits to a student health center at a six month follow up compared to the other three conditions (Pennebaker & Beall, 1986). A similar experiment analysed more specific health outcomes resulting from a traumatic writing task, specifically, immune system functioning (Pennebaker, Kiecolt-Glaser, & Glaser, 1988). Participants were instructed to write about trivial or personal traumatic events for four days. Before and after the writing period, researchers measured the participants' responses of white blood cells to stimulation of substances foreign to the body. It was found that those in the traumatic-writing group had significantly higher white blood cell responses to one of the foreign bodies by the conclusion of the writing period compared to the trivial-writing group indicating that writing about trauma may in fact boost immune functioning (Pennebaker, Kiecolt-Glaser, & Glaser, 1988). One negative consequence of

self-disclosure, or a perceived negative consequence on behalf of the discloser that prevents instances of disclosure, was negative reactions from the listener (Hill, Thompson, Cogar, & Denman, 1993). Hill and colleagues (1993) queried a sample of long-term therapy clients to find that the most common reason cited for concealment of intimate information was that they were too ashamed or embarrassed to tell them. Further, individuals may refrain from disclosing if they anticipate or fear that their intimate disclosure will be met with unhelpful comments or unsolicited advice (Pennebaker, 1993).

A variety of studies, using different methods and populations, have contributed to a foundation of evidence suggesting that computer-mediated communication (CMC) and the online environment promote self-disclosure. Parks and Floyd (1996) found that those who met in an online message board related to discussions of the news later form friendships that were characterized by high levels of intimate disclosure; moreover they found that these relationships tended to migrate to other settings as people used other forms of communication like phone calls, letter writing, and meeting face-to-face in an effort to maintain the relationships. Another study looked at intimacy and long-distance relationships and found that couples in long-distance relationships tended to use more adaptive self-disclosure than couples who were geographically close (Jiang & Hancock, 2013). Further, researchers examined transcripts of stories posted online, on a site called *Web Story Base*, and found that 81 of 133 posted stories contained personal information of some sort (Rosson, 1999). There is also experimental evidence that indicates self-disclosure may occur at a higher rate in computer-mediated contexts versus offline interactions. Computer-mediated communication has twice been compared to face-to-face interactions and in both instances it was found that when anonymity was manipulated by experimenters, those who were in an anonymous online chat condition displayed more instances

of spontaneous self-disclosure in a chat interaction than those whose identities were known (Joinson, 2001; Tidwell & Walther, 2002).

Online self-disclosure has also been investigated within the context of online health services, including counselling and therapy (Bradford & Rickwood, 2015; Mishna, Bogo, & Sawyer, 2015). In one exploratory study, a pilot cyber-counselling project was carried out with a sample of 34 undergraduate students serving as clients (Mishna et al., 2015). The students receiving the counselling as well as those delivering it were then interviewed regarding their perspective of the experience where they generally indicated the online environment made students more comfortable to disclose sensitive personal information. Many of the responses from the participating undergraduates indicated that not having to witness the physical reaction of their counsellor was a primary reason for deciding to self-disclose (Mishna et al., 2015). A second study investigated the prospective use of an electronic tool for mental health assessment in young people, the impetus of the study being the need for a tool that facilitates client disclosure absent an established clinician-client relationship (Bradford & Rickwood, 2015). The results of 129 interviews with young people aged 18-25 indicated a general support for an electronic tool in mental health assessment, with respondents stating that it would ease in the disclosure of potentially embarrassing problems and attenuate their fear of clinician judgment. Despite a dearth of quantitative evidence, early research on online therapy indicates that the online setting may facilitate instances of self disclosure.

A comprehensive review of disclosure studies comparing on- versus offline instances of disclosure in dyads only, the social situation used in the present study, was compiled by Nguyen, Bin, and Campbell (2012). The researchers selected studies where computer-mediated communication was explicitly compared to face-to-face interactions in terms of any of breadth,

depth, or frequency of self-disclosure in dyads. Interestingly, among the studies that were

deemed suitable for inclusion in the review (15 total), an equal amount showed greater online

self-disclosure (5), greater face-to-face self-disclosure (5), and no difference between online and

face-to-face disclosure (5). The authors reported that under the most stringent research

conditions (experimental studies) four found significantly more self-disclosure in the online

condition than the offline one. Only one study did not follow this trend, as it showed no

difference between the two communication modes. The reviewers reported that findings became

more mixed and inconclusive when different methods were used including self-reported

disclosure following an experiment and self-reported self-disclosure on surveys. The results of

this systematic review provided a strong justification for the present study, as the methods used

by studies finding greater self-disclosure in computer-mediated communication versus face-to-

face interaction are the same ones that will be used here, namely, an experimental design and

transcript analysis.

Objectives and Hypotheses

Firstly, it was the goal of this study to continue empirical investigation into the theory of

online disinhibition (Suler, 2004). The components of invisibility and anonymity in the theory

have been empirically validated as contributing to online disinhibition (Joinson, 2001; Tidwell &

Walther, 2002). This invites exploration into the third theorized causal factor of asynchronicity.

A second component of the present study was to situate the results of the present study within the

context of existing empirical findings relevant to online disinhibition, specifically those of

Joinson (2001). Comparing the results of this study to those of previous research efforts, that are

linked to the theory of the online disinhibition effect, will provide a greater context to the

magnitude of the effects of various causal factors and assist in identifying what components of

the theory may be more or less influential than others. Lastly, this study endeavoured to uncover the unique impact that asynchronicity in online, computer-mediated communication has on self-disclosure. The theory of the online disinhibition effect is multifaceted and complicated. This study represents an effort to find a relationship between one of six proposed causal factors, and one of many proposed outcomes. In considering all prior theoretical and empirical research on online disinhibition and self-disclosure it was hypothesized that, compared to individuals communicating in a synchronous mode, those communicating in an asynchronous one would: 1) exhibit greater depth of self-disclosure, 2) exhibit greater breadth of self-disclosure in the form of more discrete instances of self-disclosure, and 3) exhibit fewer instances of declining to answer self-disclosure-eliciting questions.

CHAPTER 2

METHOD

Participants

Participants were recruited through the Psychology Participant Pool at the University of Windsor. In exchange for their participation in the study, the participants received 1.0% course credit. Two criteria were required to be met in order for participation in this study. Participants had to 1) be fluent in English, and 2) have experience with both a chat program (e.g., MSN messenger, Facebook Messenger, chat in Gmail) and an e-mail service.

Data were collected from 94 participants, 47 in each condition. In the synchronous condition the mean participant age among the 34 females and 13 males was 21.51 years ($SD =$ 5.47). In the asynchronous condition, the mean age of participants was 20.57 ($SD = 2.43$) and the group consisted of 35 females, 11 males, and one individual who identified as "genderqueer". Participant ethnicity was collected as an open-response field and resulted in a large variety of

responses, however, self-reported ethnicity was similar in both conditions as the majority of participants identified as white/Caucasian, followed by black/African Canadian. In addition to age, gender, and race, other demographic variables involving school enrolment and education were collected which saw similar responses across conditions.

Measures

Before completing the interaction, participants were administered a demographic questionnaire (Appendix A). The primary measure for this study was adapted from Moon (2000) in which a series of questions, gradually increasing in the intimacy of the self-disclosure they were intended to elicit, were posed to the participant (see Appendix B). Questions began with normative self-disclosure queries, centred on basic demographic information (e.g., *Where is your home town?*) and progressed to queries seeking more personal information (e.g., *What are some things that really hurt your feelings?*). In analyzing these responses, the variable of self-disclosure was sub-divided into three: depth of disclosure, discrete disclosures, and number of "prefer not to answer" responses. As was the case in Moon's (2000) study, two raters (one who was the primary investigator, and one who was an undergraduate student – blind to hypotheses and condition – recruited to serve as a rater) analyzed the transcripts to determine the score for each participant's three disclosure categories. A coding package (Appendix C) was developed along with examples of transcripts that had the coding package applied to them (Appendices D-F), as were other example transcripts that were used for the purpose of practice (Appendices G-I) (N: The examples were written to mimic the style of responding and content from participant transcripts but do not contain actual responses). Raters judged the depth of the disclosure on a five point scale (1 = low intimacy; 5 = high intimacy). Breadth of self-disclosure was determined by assigning discrete disclosure scores to each response provided by a participant. The "prefer

not to answer" variable was measured by simply indicating and adding each time a participant declined to answer a question.

After completing the online interaction in which they answered the 18 self-disclosure questions, participants were directed to a series of self-report questions in which they indicated how vulnerable and uncomfortable they felt, whether or not they told the truth, and how much information they felt they shared (Appendix J). These questions were not taken from any pre-existing scale, but were developed (by the author) for the purpose of this study. These questions were intended to assess participants' own opinions of the degree to which they shared personal information, rather than deferring to the analyses of outside raters. Additionally, participants were asked to answer questions regarding to whom they believed they were speaking, and (for those in the asynchronous condition) when they believed their responses would be read. These questions were included to determine if the participants had indeed believed the elements of deception included in the design of this study.

Design

The experiment consisted of two conditions that differed in their mode of online communication, namely online synchronous and asynchronous modes. Instructions (outlined below and in appendices L and M) to all participants were as similar as possible, with minor variations made to accommodate the differing elements in the communication modes. Both conditions involved an exchange between the participant and the experimenter who posed as a fellow University of Windsor student. The synchronous condition took the form of a text-based online chat on a Gmail account. The chat took place as an exchange between the participant and the experimenter who posed as another participant tasked with asking questions to a fellow

student. The asynchronous condition likewise took place in Gmail. Instead of a chat interaction it took the form of an e-mail exchange where the participant was to open an "unread" e-mail from another hypothetical participant that contained a brief introduction followed by the list of questions that he/she was to respond to.

Procedure

After signing up for the study on the Psychology Participant Pool (Appendix K for advertisement), participants were randomly assigned to either the synchronous or asynchronous condition using a random number generator where numbers from 1-100 were drawn, wherein even numbers represented the synchronous condition and odd numbers represented the asynchronous condition. Once an initial participant was assigned to a condition, the next participant to register was assigned to the opposite condition.

Once the time arrived that the participant had registered for, he or she was sent an initial contact e-mail containing the link to the study as well as preliminary instructions (Appendix L for the synchronous condition, Appendix M for the asynchronous condition). Prior to commencing the study, participants were asked for their informed consent (Appendix N). After completing the demographic questionnaire, participants were directed to a page that contained a final set of instructions as well as how to access the e-mail account that was created for this study, participants in both conditions received the same set of instructions (see Appendix O).

Once the participants in the synchronous condition accessed the Gmail account, the experimenter initiated the chat (See Appendix P for chat opening). Following the opening, the experimenter began to administer the series of self-disclosure questions. Throughout the conversation, the experimenter intermittently replied with a series of pre-approved neutral-

positive statements in order to observe conversational norms (see Appendix Q for responses). At the end of the chat, the experimenter instructed the participant to return to the survey page to complete the post-interaction questions. Before the participant could navigate to the page containing the post-interaction questions they were asked to ensure that they had completed the interaction itself (Appendix R). This was implemented to prevent participants from navigating to the post-interaction questions before completing the interaction. Participants assigned to the asynchronous condition completed the study using the same Gmail account and were met with an opening to the unread e-mail reminding them of the time delay between their reply and when it would be read (Appendix S). After participants in both conditions completed the post-interaction self-report questions, they were directed to a debriefing form in which the purpose of the study as well as the various elements of deception were explained to them (Appendix T). Participants were required to re-consent in order to have their data included in the study.

CHAPTER 3

RESULTS

Coding Reliability

The reliability of the coded transcripts was assessed four times in total throughout the coding process; reliability checks were held three times in intervals of roughly 20 transcripts, and then a final reliability which included all transcripts once coding was complete (coded transcripts 1-10 for each condition, coded transcripts 11-22 for each condition, coded transcripts 23-35 condition, and lastly all transcripts, including coded transcripts 36-47 for each condition). The intermittent reliability checks ensured that raters were coding the transcripts in a similar fashion, and to indicate any potential problems including rater drift (Syed & Nelson, 2015). Reliability was determined using the interclass correlation coefficient (two-way mixed model with consistency), a reliability metric appropriate for use with constructs that are ordinal or

continuous in nature (depth of disclosure and discrete disclosures in this study, respectively; Shrout & Fleiss, 1979; Syed & Nelson, 2015). Throughout the coding process, the raters coded the transcripts independently and then met to compare their scores. All of the reliability outcomes presented were determined using each rater's original score for the response. In assessing reliability, two coefficients were calculated for each variable: one coefficient that included participants' responses to all 18 questions and one coefficient that included questions 7-18 for the depth variable, since questions preceding question 7 elicited very little variability for that variable (when including each individual response in analysis), comparatively ($N = 94$, $M = 1.01$, $SD = .11$ for responses to questions 1-7 and $N = 94$, $M = 2.63$, $SD = 1.06$ for responses to questions 7-18). Likewise, for the discrete disclosures variable two coefficients are presented: one coefficient that includes participants' responses to all 18 questions and one coefficient that includes responses to questions 6-18 as responses preceding question 6 also elicited little variability among participants, comparatively ($N = 94$, $M = 1.28$, $SD = 0.7$ for responses to questions 1-5 and $N = 94$, $M = 2.47$, $SD = 2.18$ for responses to questions 6-18). Reliability coefficients can be found in Table 1 for the depth variable and Table 2 for the discrete variable.

Table 1

Transcript coding reliability coefficients for depth variable

Transcripts (both conditions)	Responses included	ICC	95% CI	*p*-value
1 through 20	1 through 18	.89	.87-.91	<0.001
1 through 20	7 through 18	.80	.75-.84	<0.001
11 through 22	1 through 18	.91	.89-.92	<0.001
11 through 22	7 through 18	.85	.81-.88	<0.001
23 through 35	1 through 18	.93	.91-.94	<0.001
23 through 35	7 through 18	.87	.85-.90	<0.001
All transcripts	1 through 18	.91	.90-.92	<0.001
All transcripts	7 through 18	.86	.85-.88	<0.001

Table 2

Transcript coding reliability coefficients for discrete variable

Transcripts (both conditions)	Responses included	ICC	95% CI	*p*-value
1 through 20	1 through 18	.85	.82-.88	<0.001
1 through 20	6 through 18	.84	.80-.87	<0.001
11 through 22	1 through 18	.91	.89-.93	<0.001
11 through 22	6 through 18	.91	.89-.92	<0.001
23 through 35	1 through 18	.96	.95-.97	<0.001
23 through 35	6 through 18	.95	.94-.96	<0.001
All transcripts	1 through 18	.93	.93-.94	<0.001
All transcripts	6 through 18	.92	.91-.93	<0.001

Manipulation Checks

After participants completed the self-disclosure interaction they were asked a pair of questions tapping their perception of two of the deceptive elements of this study: to whom they believed they were talking, and how long until their e-mailed response would be read (for those in the asynchronous condition). Frequencies for believed message-read time among those in the asynchronous condition (*n* = 47) can be found below in Table 3.

Table 3

Frequencies for believed message-read time, asynchronous condition

Response	Frequency
One month	37
Missing	3
2 hours	2
"I don't know"	2
4 hours	1
One day	1
Immediately	1

Responses to the question of who participants believed they were responding to can be found below in Table 4 for both conditions ($N = 94$).

Table 4

Frequencies for believed message-receiver, synchronous condition

Response	Frequency
Researcher	46
Student	26
"A computer"	6
"A female"	5
Missing	4
"A male"	3
"I don't know"	3
"Interviewer"	1

Primary Analyses

Prior to testing the primary hypothesis, missing data and outliers were examined. There were only three cases in total of self-disclosure questions that were left blank, or unanswered without a "prefer not to answer" response, all of which were in the asynchronous condition. Researchers interpreted this to mean that the participant did not wish to answer the question and thus scored the responses as 0 for the depth and breadth variables, and added a "prefer not to answer" response score. Outliers were investigated using the outlier labelling method (Hoaglin, Iglewicz, & Tukey, 1986), in addition to a visual examination of the data, which uncovered only a single outlier in the data for the asynchronous condition's discrete disclosure variable. A group comparison was performed with and without the outlier which demonstrated that no appreciable difference resulted with the removal of the datum, and it ultimately remained in the analysis.

Hypothesis 1 stated that those in the asynchronous condition would be rated as disclosing deeper, more intimate information than those in the synchronous condition. Questions 7-18 were used for the analysis due to a lack of variability found in the preceding questions, which mostly garnered scores of 1. The synchronous group ($n = 47$) had a mean depth score of 2.62, 95% CI [2.54, 2.71] ($SD = .44$) while the asynchronous group ($n = 47$) had a mean depth score of 2.63, 95% CI [2.54, 2.72] ($SD = .51$). A significant difference was not found between groups $F(1,92) = 0.01$, $p > .05$.

Hypothesis 2 stated that those in the asynchronous would disclose more information in the form of unique discrete disclosures than those in the synchronous group. In the synchronous condition, a mean discrete disclosure score of 2.53, 95% CI [2.16, 2.89] ($SD = 1.26$) was found, while in the asynchronous condition, a mean discrete disclosure score of 2.42, 95% CI [1.98, 2.86] ($SD = 1.49$) was found. Again, there was no significant difference found between the two groups $F(1, 92) = 0.14$, $p > .05$.

Hypothesis 3 stated that those in the asynchronous condition would refuse to answer questions on fewer occasions that those in the synchronous group. The synchronous condition saw an average of 0.81, 95% CI [0.46, 1.16] ($SD = 1.19$) usages by participants while participants in the asynchronous condition used the response an average of 0.92, 95% CI [0.59, 1.24] ($SD = 1.12$) times. There was no significant difference between groups $F(1, 92) = 0.20$, $p > .05$.

Self-report Analyses

Participants were asked to respond to a series of self-report questions, following the interaction, meant to elucidate their own perception of the amount of information they shared

and depth of their answers (questions listed in Appendix J). The correlations for those responses

can be found in Table 4 for both conditions. Additionally, the self-report correlations were tested

to examine if they were significantly different from each other across groups, this information is

also contained in Table 5.

Table 5

Correlations for self-report questions

	Truth	Info amount	Vulnerability	Comfort
Truth		-.11 †	-.07	-.08
Info amount	.32*		.10	.37*
Vulnerability	.13	.07		.43**
Comfort	.17	.38**	.24	

Note: The upper triangle includes data from the asynchronous condition, the lower triangle

includes data from the synchronous condition. * indicates p < .05; ** indicates p <.01; †indicates

a significant difference between groups for the same correlation.

Asking participants about the amount of information they perceived they divulged was

meant to be analogous to rater's views of their discrete disclosure score. Higher scores on this

question indicate that participants believed they revealed more information (1 = None at all, 5 =

a lot). In the synchronous condition, participants' average score was 3.72, 95% CI [3.47, 3.97]

($SD = 0.85$) whereas participants in the asynchronous condition had an average score of 3.58,

95% CI [3.30, 3.85] ($SD = 0.93$). There was no significant difference between groups $F(1, 92) =$

$0.66, p > .05$.

Participants were then asked two questions intended to correspond with their perceived

depth of disclosure, as they answered about their level of comfort and vulnerability when

responding in the interaction. With both questions, a lower score means more discomfort and

more vulnerability (1 = very vulnerable, 5 = not vulnerable at all; 1 = very uncomfortable, 5 = I

felt completely comfortable). Regarding the question about vulnerability, participants in the synchronous condition had a mean score of 3.28, 95% CI [3.00, 3.56] ($SD = 0.95$) while those in the asynchronous condition had a mean score of 2.96, 95% CI [2.60, 3.31] ($SD = 1.26$). There was no significant difference between groups $F(1, 92) = 2.01$, $p > .05$. When asked about feelings of comfort, the synchronous group had a mean of 3.15, 95% CI [2.84, 3.46] ($SD = 1.06$) while the asynchronous group had a mean of 3.06, 95% CI [2.70, 3.43] ($SD = 1.24$). There was not a significant difference between groups $F(1, 92) = .13$, $p > .05$.

Exploratory Analyses

In light of the fact that significant results for the primary hypotheses were not found, data was analyzed further to determine if redistributing participants into groups between those who thought they were speaking to a researcher and those who did not (regardless of condition) would yield different results. Group sizes remained nearly equal as 46 participants believed they were speaking to someone involved in the research, and 48 specified they were speaking to a student, or provided an answer outside of "researcher." These two groups were compared across all variables, including those derived from transcript ratings and participant self-report. In addition to group comparisons, the correlations among self-report scores for these two groups were analyzed and can be found below in Table 6.

Table 6

Additional correlations for self-report questions

	Truth	Info amount	Vulnerability	Comfort
Truth		.11	-.16	.02
Info amount	-.03		.46** †	.30*
Vulnerability	-.16	-.06		.39**
Comfort	-.06	-.07	.28	

Note: The upper triangle includes data from those participants who believed they spoke to a student or someone other than a researcher, the lower triangle includes data from those who believed they spoke to a researcher. * indicates p < .05; ** indicates p <.01; [†]indicates a significant difference between groups for the same correlation.

Some interesting results emerged from the above correlation table wherein several significant correlations were observed for those who believed they were not speaking to a researcher, but none were found for those believing they were speaking to a researcher. The greatest discrepancy between these groups involves the correlation between vulnerability and perceived amount of information shared. The positive correlation in the "researcher disbeliever" group illustrates that as they felt less vulnerable (vulnerability was reverse-coded), they shared more information. The fact that this correlation was not replicated among "researcher believers" suggests that as they felt less vulnerable they did not share more information. Perhaps this is an indication that, during the interaction, the participants had surmised that they were speaking to a researcher and did not feel overwhelming vulnerability because a) they had control over how much information they could share, and b) there was no longer any ambiguity or uncertainty for them regarding who they were talking to. The participants may have simply decided that, since they were talking to a researcher, they did not wish to disclose a broad amount of information. A similar phenomenon may have occurred when it came to comfort and perceived information amount, which was likewise a nonsignificant correlation in this group, as it is closely linked to vulnerability (Derlega, 1988; Kelly & McKillop 1996; Laurenceau et al., 1998).

The "researcher believer" group also saw a nonsignificant correlation where the "research disbeliever" group saw a significant one when it came to comfort and vulnerability. What may have been responsible for this is a disconnect between the participants' sense of vulnerability and

comfort among those believing they were speaking to a researcher. It is possible that while those in this group did not feel vulnerable, owing to the fact that they could share as much or as little information as they wanted to, they still may not have felt comfortable, considering they had come to the conclusion that they were speaking to a researcher, and had thus surmised that an attempt at deception had been made. Perhaps these participants were not comfortable with the fact that they were not speaking to who they were told they were speaking to and the interaction did not match the expectation that they had when they agreed to participate in the study. While this explanation remains speculative, it is certainly plausible that participants in this group maintained a feeling of control over the interaction (and thus little vulnerability), as they were not forced to share information they did not want to, but did not feel entirely comfortable, considering they thought they were speaking to someone who they may have believed was monitoring their answers for specific content, or just experienced general discomfort at the idea of being observed.

Analyzing the depth of disclosure variable revealed a mean score of 2.70, 95% C.I. [2.56, 2.83] (SD = .46) for those who thought they were talking to a researcher and a mean score of 2.56, 95% C.I. [2.44, 2.72] (SD = .48) those who they believed they were speaking to a student or someone else. This difference was not significant $F(1, 92) = 1.54$, $p > .05$. On the discrete variable, those believing they spoke to a researcher had a mean score of 2.63, 95% C.I. [2.18, 3.08] (SD = 1.52), and those believing otherwise had a mean score of 2.33, 95% C.I. [1.98, 2.69] (SD = 1.23). The difference between means was not significant $F(1, 92) = 1.09$, $p > .05$. On the decline to answer variable, participants who believed they were speaking to a researcher had a mean score of .78, 95% C.I. [.46, 1.10] (SD = 1.07), and those believing they were speaking to

someone other than a researcher had a mean score of .90, 95% C.I. [.54, 1.25] (SD = 1.23). This difference was not significant $F(1, 92)$ = .23, p > .05.

A similar trend of results emerged when comparing the same groups' scores across the self-report items. When queried about their comfort level, those who believed they were speaking with a researcher had a mean score of 2.98, 95% C.I. [2.65, 3.31] (SD = 1.11), and those who did not had a mean score of 3.15, 95% C.I. [2.80, 3.50] (SD = 1.20). This was not a significant difference $F(1, 92)$ = .49, p > .05. Regarding their feelings of vulnerability, the participants who believed they were speaking to a researcher reported a mean score of 3.26, 95% C.I. [2.95, 3.57] (SD = 1.04), and those who did not had a mean score of 3.04, 95% C.I. [2.70, 3.38] (SD = 1.17). This was not a significant difference $F(1, 92)$ = .92., p > .05. Lastly, when evaluating how much information they shared, participants who believed they were responding to a researcher had a mean score of 3.74, 95% C.I. [3.49, 3.99] (SD = .83), those believing otherwise had a mean score of 3.50, 95% C.I. [3.22, 3.78] (SD = .97). This was not a significant difference $F(1, 92)$ = 1.65, p > .05.

CHAPTER 4

DISCUSSION

One goal of this study was to expand the literature examining the relationship between the online environment and increased levels of self-disclosure. Past research, as outlined above, has largely examined the combined role of anonymity and physical invisibility, which have been verified as contributing to increased levels of self-disclosure when compared to interactions where an individual can be seen and his or her identifying information can be known (Joinson, 2001; Tidwell & Walther, 2002). The present study sought to develop this area of research by investigating an additional proposed causal factor, inherent to some elements of the internet,

namely increased self-disclosure. The specific condition of internet-based communication investigated in the present study was the amount of delay between the sending and receiving of a message between two parties. As outlined in Suler's (2004) theory of online disinhibition, as the amount of time increases between the sending and receiving of a message, so too should an individual's disinhibition, thus amounting to increased levels of self-disclosure. That supposition was investigated presently with participants assigned to conditions in which the sending and receiving of messages was either instantaneous or delayed by (they believed) one month.

The first hypothesis of this study was that those in the asynchronous e-mail condition would be rated as scoring higher on the depth of their self-disclosures compared to those participants in the synchronous chat condition; this hypothesis was not supported. The second hypothesis – that those in the asynchronous condition would be rated as having shared more discrete self-disclosures – was likewise not supported. And finally, the third hypothesis – that those in the asynchronous condition would refuse to provide answers to questions on fewer occasions than those in the synchronous condition – was not supported.

A similar trend of results was uncovered when asking participants to report on their own experience of the interaction. Participants were asked two questions about their vulnerability and comfort levels, which were meant to be analogous to asking them about the depth of the information they shared; no significant differences were found between groups. Likewise, when asked about the amount of information they felt they shared (an attempt to ascertain the participants' perspective on their own breadth of disclosure), participants across groups did not differ significantly in their scores. The nature of these self-report results indicated there was some agreement between the raters' view of participant responses and participants' own view of

their responding, as data obtained for neither source indicated any significant differences between groups.

Despite the dearth of significant results among the main hypotheses, some significant correlations did emerge between the self-report items. For both conditions, a significant positive correlation between the participants' level of comfort and the amount of information they shared was found. This correlation is somewhat intuitive as it stands to reason that an individual who feels more comfortable with being asked questions of a personal nature, would ultimately be willing to disclose more about themselves. A second significant positive correlation was found in the asynchronous condition between comfort and vulnerability. This positive correlation indicates that as participants felt more comfortable, they felt less vulnerable (vulnerability was reverse coded, so that those who scored higher were indicating lower vulnerability). Again, this correlation aligns with definitions of these two states, as comfort and vulnerability are intimately related components of deep emotional disclosures (Derlega, 1988; Kelly & McKillop 1996; Laurenceau et al., 1998). A third significant correlation was found in the synchronous condition where amount of information shared and the degree to which the participant reported telling the truth were positively correlated. This correlation indicates that those who told the truth more frequently were likelier to share more information.

In an attempt to approach the data from a different perspective, post-hoc exploratory analyses were carried out that re-grouped participants into those who believed they were speaking to a researcher and those who did not (they believed they were speaking to a student, a peer, or someone else not involved with the research). These two groups were re-examined across all variables including those derived from the transcript analyses and those based on the self-report measures. The impetus for this re-analysis was that researchers thought it might be

possible that those who believed they were speaking to a researcher involved in the study may have been inhibited in their responses in comparison to those who did not.

Similar to the original findings, when participants were re-divided into groups based on who they were believed they were speaking to, a trend of insignificant results emerged. Again, across transcript analysis and participant self-report, group means were extremely similar and the small differences among groups were not significant. However, like the initial self-report findings, some significant correlations did come to light. Both vulnerability and comfort levels were positively correlated with the amount of information those who believed they were speaking to a student, or someone else not involved in the research, shared. Additionally, vulnerability and comfort levels were positively correlated with each other. There were no significant correlations in self-report items among those who thought they were speaking to a researcher.

The results of this study did not align with the hypotheses, which may have occurred for a number of reasons. Firstly, it is important to note that this study is the first of its kind, and, as a novel study, researchers were not able to benefit from a methodological foundation for manipulating synchronicity and asynchronicity. In examining the group means for each variable what is evident is that the groups performed extremely similarly across nearly all variables. The groups differed to such a small degree that it suggests that the attempted manipulation may have not been successful, and that those in the asynchronous condition did not truly believe that their message would be read one month after participating. If this is in fact the case, and participants did not believe that their e-mail response would be read in one month, it is plausible that these results are the product of two groups who, in reality, differed very little in their experience of this experiment. Adjustments that could be made to the design of this experiment in order to properly

convince participants that they are participating in an asynchronous exchange will be outline below.

A failure of manipulation is one potential explanation for the findings of this study. Additional explanations are outlined below, as well as potential adjustments to the methods used in the current study that may promote self-disclosure in future courses of research. Further, literature offering alternative explanations of self-disclosure and the causal processes that seek to promote it will be outlined and discussed within the context of online communication. The present study will be situated within the broader theory of online disinhibition outlined by Suler (2004), and the implications for that theory with respect to the present results will be discussed.

Evidence exists of the importance of the personality characteristics and qualities of the individual who seeks to elicit disclosures from others, as opposed to the mode of communication that is used in attempting to elicit those disclosures. Prior to considering those characteristics that elicit self-disclosures from others, it is necessary to examine the characteristics that may have been represented by the hypothetical individual to whom participants were responding in this study. The "responder/recipient" in this study, with whom the participant was exchanging, was so devoid of human warmth or any social personality characteristics that a not insubstantial number of participants (6/94) believed they were speaking to a computer. In situations where individuals exchanging in a conversation are free to fully express their personalities, one quality has been seen as particularly important, among recipients, in facilitating self-disclosure from others: trustworthiness (Rotter, 1971, 1980). Particularly, when the recipient is deemed trustworthy by the discloser, he or she is more likely to disclose to that person. One extension of trustworthiness studied extensively involves confidentiality, as it appears peoples' willingness to self-disclose is increased when confidentiality is assured. Adolescents' proclivity to self-disclose

to physicians about substance use, sexuality, mental health, and their likelihood of seeking future assistance from the same doctor was enhanced when they were guaranteed confidentiality (Ford, Millstein, Halpern-Felsher, & Irwin, 1997). Another study indicated that when the certainty of confidentiality was made dubious via instructions in a study that created conditions analogous to a counselling situation college students were less likely to share information about themselves (Woods & McNamara, 1980). In considering other characteristics of the recipient that may increase disclosures, it is worthwhile to review a study previously outlined. Collins and Miller (1994) completed a comprehensive review of the self-disclosure literature to that point and one of their findings was that individuals tend to disclose more to those who they like. Thus, it is reasonable to assume that establishing some kind of emotional rapport that enhances the likability of the recipient may serve to increase disclosures. Other researchers have attempted to create a profile of "openers," or those who are adept at getting others to disclose to them (Miller, Berg, & Archer, 1983). Over a series of studies, the researchers developed an "opener" scale and then designed an experiment whereby those who rated themselves as high openers were placed in interactions with other individuals to examine whether they were markedly effective in eliciting intimate information from others. It was found that those who were adept at eliciting self-disclosures from others rated themselves highly on items such as "I've been told that I'm a good listener," "People trust me with their secrets," "I enjoy listening to people," "I easily get people to 'open up'," and "People feel relaxed around me."

Additionally, as Rubin (1975) reported, the attractiveness of the recipient also appears to play a role in how much information will be disclosed unto him or her. In the study, there was a positive relationship between the physical attractiveness of a male assistant, as rated by the experimenter, with the amount of information participants, both male and female, disclosed to

him. However, a female assistant rated as highly attractive by the experimenter only increased the disclosures of male (not female) participants. The explanation offered for these findings was that the attractive male assistant benefited from a halo effect and participants considered him to be kind, sensitive, and trustworthy; whereas the female participants felt threatened by the female assistant's attractiveness and perceived her to be unapproachable.

Other interesting gender differences have been found in self-disclosure studies. Early self-disclosure studies observed that women typically disclosed more than men which was attributed to what would now be considered stereotypical gender roles as authors claimed that the male role required him to be tough and unsentimental, qualities that would be affronted by instances of intimate self-disclosures (Jourard & Lasakow, 1958; Jourard & Richman, 1963). Meanwhile, women's perceived social role was that of a caring and nurturing type, characteristics congruent with acts of intimate self-disclosure. A meta-analysis of studies investigating gender differences in self-disclosure found that among 23,702 participants across 205 studies women did tend to disclose more than men (Dindia & Allen, 1992). It was also found that the gender of the recipient of the disclosure moderated the magnitude of the effect such that situations with female recipients had a greater effect than those with male recipients (no effect). However, individual studies have found more nuanced results as the genders of discloser and recipient are examined in unison. McGuire, Graves, and Blau (1985) discovered that males in their study disclosed more to male (rather than to female) interviewers, whereas females' disclosure levels did not vary as a function of recipient gender. This finding was attributed to males' tendency or need to boast or brag about themselves to other males in the spirit of competition to affirm their masculinity, especially when topics turned to sexual behaviours and sexual attitudes.

Other researchers have investigated the qualities of the physical environment that may facilitate or prevent self-disclosure. Whereas the interaction of this study itself took place on the internet, the individual responding to the questions was, of course, somewhere situated in a physical environment. Since participants were not required to come into a predetermined space to complete the study, the physical environment they occupied may have influenced their likelihood to disclose. Counselling research has demonstrated that individuals disclose more when in *architecturally soft* rooms versus *hard* ones (Chaikin, Derlega, & Miller, 1976). A soft room was marked by indirect lighting, framed pictures, a floor rug, and a cushioned arm chair, whereas a hard room featured bright, glaring fluorescent lighting, asphalt tile, and bare cement block walls. Room size as well as the number of occupants, or the perceived atmosphere of crowding, also seems to have an impact on self-disclosure (Sundstrom, 1975). As room size decreased participants who were made to feel crowded – by leaning forward, looking directly into their eyes, physical contact being made – disclosed less.

An additional possible explanation for the findings of this study goes beyond the characteristics of the recipient, discloser, and space of the interaction involves the process of disclosure itself. Researchers have highlighted four main reasons that people choose to disclose, these include: self-focused, other-focused, interpersonal, and situational reasons (Vangelisti & Perlman, 2006). Self-focused reasons for disclosing or not disclosing involve decisions around what will ultimately benefit the discloser. Self-focused reasons that encourage and promote disclosures include attaining catharsis or seeking support from others whereas self-focused reasons for abstaining from disclosing include the fear of rejection or compromised privacy. Other-focused motivations for disclosing include a sense of duty to inform or educate others, while other-focused reasons for not disclosing involve the fear that the recipient will not protect

the information, or that she or he may share it with others without the discloser's consent. Interpersonal motivation for disclosure involves the maintenance of a relationship. Interpersonal reasons include an individual feeling as if the disclosure will serve to nurture and enhance the relationship, while a reason not to disclose may be fear of damaging the relationship. Situational reasons for or against disclosing involve logistical factors that serve as facilitators or impediments to disclosures. Situational reasons for and against disclosing include the availability or unavailability of a recipient, the presence or absence an appropriate location for the disclosure, and having a suitable length of time to discuss the disclosure. In considering the above reasons for disclosure within the context of the present study, it is difficult to identify a strong reason participants would have had for disclosing such personal information; whereas there are several reasons against disclosing that may have been present. It is likely that, while the aim of the study was to activate disinhibition using different communication modes, the apparent imbalance in the risks versus rewards of disclosing ultimately inhibited participants. Although confidentiality was guaranteed to participants, they still had no relationship with their recipient and thus no relationship to nurture or maintain (interpersonal). Additionally, participants may have been inhibited by a fear of rejection considering the intimate nature of many of the questions, and judged the situation as too risky to sacrifice their private thoughts, feelings, and experiences (self-focused). Finally, participants may have experienced a series of other-focused motivations for not disclosing, including concerns that the information would be used in some way they were uncertain of, as they knew they were participating in a study, but the reason given for the interaction was quite vague (to examine patterns of online interaction).

An additional element that appears to be influential in the elicitation of self-disclosure absent in this study is reciprocity. Originally, Gouldner (1960) proposed that the norm of

reciprocity – that people feel compelled to return the services they receive from others, whether favours, money, or self-disclosure – dictates much of social behaviour. Supporting his hypothesis is a broad literature that affirms the phenomenon of the norm of reciprocity and self-disclosure (Berg & Archer, 1980; Chaikan & Derlega, 1974). Ultimately, this phenomenon appears to have achieved normative status within human social exchanges due to the fact that individuals who reciprocate disclosures, and reciprocate them on a similar level of intimacy, are liked more and, in turn, like those to whom they disclose (Chaikan & Derlega, 1974; Collins & Miller, 1994; Sprecher, Treger, Wondra, Hilaire, & Wallpe, 2013). Sprecher et al. (2013) recruited unacquainted pairs to participate in a self-disclosure activity and manipulated reciprocity. Pairs either took turns asking and answering questions (reciprocal), or one partner disclosed while the other listened (non-reciprocal). It was found that those who disclosed in the reciprocal interaction reported greater liking, perceived similarity, and enjoyment of the interaction than those in the non-reciprocal condition. Reciprocity in self-disclosure has also been examined in an online setting. Barak and Gluck-Ofri (2007) investigated the degree of reciprocity present in online discussion and support forums, particularly examining the degree to which first messages in a thread had instances of self-disclosure reciprocated. Investigators found that not only did those whose initial messages contained self-disclosure have those disclosures reciprocated, but also that the depth of the disclosure in the response was proportional to that of the depth of the disclosure in the original message. This study provides evidence that the early findings of the norm of reciprocity and self-disclosure, which were attained by studying face-to-face interactions, extend to the online world.

While there are a dearth of studies comparing self-disclosure across synchronous and asynchronous communication modes, studies that have examined self-disclosure in online versus

offline settings have found no significant differences as well (Buote, Wood, & Pratt, 2009; Chiou & Wan, 2006; Kiesler, Zubrow, Moses, & Geller 1985; Mallen, Day, & Green, 2003; Parks & Roberts, 1998). These studies used various methods, but all resulted in the same conclusion: no significant difference. Kiesler et al. (1985) carried out an experiment in which 40 dyads of partners (strangers to each other) were allocated to one of four conditions in a factorial design of face-to-face versus computer mediated communication and high versus low evaluation anxiety. Disclosure intimacy and frequency was measured as were various metrics of physiological arousal; no significant differences were found between groups on the disclosure variables. Other researchers using an experimental design have likewise found no differences (Mallen et al., 2003) – here, 32 stranger dyads were assigned to face-to-face or computer-mediated interactions, and participants were asked to rate both their own and their partner's self-disclosure levels. There were no significant differences in participants' rating of their own as well as their partner's disclosure across conditions. Nonsignificant results have likewise been found by researchers who have investigated the same question using self-report survey methods (Buote et al., 2009; Chiou & Wan, 2006). Chiou and Wan (2006) surveyed adolescents from Taiwan on the depth and breadth of their sexual self-disclosures, in terms of their willingness to do so, in online and offline settings. Respondents were willing to disclose more in terms of depth in face-to-face interactions, but there was no difference regarding breadth. Buote et al. (2009) surveyed 141 people regarding their attachment styles, friendship quality, and self-disclosure to an online and offline friend. The researchers reported that no significant differences in levels of self-disclosure to an online versus offline friend were expressed by participants.

In considering all of the preceding findings regarding conditions that effectively elicit self-disclosure, the results of the current study may be understood more clearly. Self-disclosure

in the synchronous condition may have been facilitated by the fact that it was an actual interaction and the participants' disclosures, regardless of how tame or intimate, were consistently met with neutral-positive statements that were nonjudgmental in nature. It is possible that self-disclosures were facilitated in this condition based on the mere fact that the researcher, or "recipient", in the interaction took on a "listener" role and provided no negative or judgmental replies that may have dissuaded subsequent disclosures in the interaction. The individual disclosing was consistently met with neutral feedback from his or her conversational partner, and may have even interpreted some of the pre-approved responses as being supportive, empathetic, or understanding which could have facilitated further disclosures in the interaction. These responses may have contributed to the conversational recipient taking on the "opener" profile described above as one who is capable of nonjudgmental listening. The conversational nature of the synchronous condition may have felt like a more natural interaction to the participants, which ultimately may have produced disclosures in that condition on a similar level as those who may have been disinhibited by the asynchronous condition. Another explanation for the findings is that perhaps any asynchronous disinhibition was offset by synchronous participants being motivated to achieve closeness, or other self- and interpersonal-focused goals, with their conversational partner. Self-focused motivations for self-disclosure include attaining catharsis and seeking support from other people. It is possible that these goals were present for those in the synchronous condition who may have sought closeness and reassurance from an individual they were actively talking to. As alluded to earlier, it is possible that other-focused reasons for not disclosing (fear of having the information misused, not trusting the individual receiving the information) may have impacted the asynchronous condition more so than the synchronous one. Those in the synchronous condition knew that they were actively engaging in a

conversation with another person and some trust may have developed when their answers were replied to with generally neutral statements. However, those in the asynchronous condition never had a direct interaction with their recipient and were perhaps more concerned with other-focused reasons for not disclosing since they would have comparatively less experience with their recipient compared to those in the synchronous condition. An alternate explanation for the findings is that, considering the group scores were consistently so close to each other, there is simply no difference in the amount and depth of self-disclosures these two modes of communication elicit.

Adjustments for future research

Beyond examining the theoretical and empirical evidence outlined above, looking at the specific methods of online self-disclosure studies may provide some insight regarding what conditions of the current study would need to be altered in order to find the predicted outcome. A number of studies have found significant differences between self-disclosure scores in online vs. offline scenarios – contrasting the methods employed in those studies with those implemented in the present one may shed light on important methodological elements that serve to enhance the likelihood of finding significant differences (Antheunis, Valkenburg, & Peter, 2007; Carballo-Dieguez, Miner, Dolezal, Rosser, & Jacoby 2007; Coleman, Paternite, & Sherman, 1999; Joinson, 2001; Tildwell & Walther, 2002). In Tildwell and Walther's (2002) study, opposite-gender strangers were instructed either to "get to know each other" or to come to a solution on a decision-making problem, over a computer or in-person. The researchers found that the computer-mediated group had a greater proportion of disclosures while the face-to-face group disclosed more deeply. In Joinson's (2001) study, as outlined above, same-gender dyads were paired and asked to come to a joint solution on a scenario. Here, the participants in the computer-

mediated condition were found to disclose both more often and more deeply than those in the face-to-face condition. Coleman et al. (1999) had groups of 3 to7 same-gender participants reach consensus on an experimental decision-making task in either a chat or face-to-face condition. Among other variables, spontaneous self-disclosure was rated in the decision-making transcripts, which the computer-mediated group was found to have done more of. Researchers conducting a study on the effects of computer-mediated communication versus face-to-face communication on interpersonal attraction created 81 opposite-gender dyads and assigned them to CMC text only groups, CMC visual groups (in which participants could see each other on web cameras), and face-to-face groups (Anthenius et al., 2007). Participants were simply instructed to "get to know one another," and it was found that self-disclosure, only in the CMC text only condition, stimulated increased interpersonal attraction. Increased interpersonal attraction was not found in the other two conditions.

What is evident when examining the methods in the above studies is that researchers consistently matched participants with each other rather than posing as participants themselves. Researchers were more likely to use methods that allowed for natural, organic conversations to develop between people instead of a highly structured interview that was used in the present study. It is possible that participants were more open to disclosing with the knowledge that they were speaking to another individual in the study as opposed to a researcher. Despite the fact that participants in the present study were told that they were interacting with a fellow participant, the majority still reported they believed they were talking to a researcher. Creating conditions in which participants feel they are actively engaging with another person, who discloses to them in kind and observes other conversational norms, may have proven fruitful for eliciting levels of self-disclosure that may have differentiated the groups.

A specific adjustment that could be made in response to the possibility that asynchronicity was unsuccessfully manipulated in this study is to create an actual asynchronous exchange between participants instead of simply stating that the response would not be read for a month. Since the feasibility of one month exchanges between participants is limited, perhaps one week could be the delay in time, and participants could exchange e-mails back and forth on a number of occasions to provide a greater breadth of evidence that the stated time frame is being followed. Additionally, it may help if participant receive a notification when their message has been read. Receiving a "read" notification one week after having sent his or her message may contribute to convincing participants that they are in fact participating in a weekly e-mail exchange in which their messages go unread for a substantial amount of time.

Considering that the research question in the present study involved asynchronicity and not other proposed online disinhibition causal factors, such as invisibility and anonymity, that were, too an extent, nested within the present study's design, perhaps these other factors could be done away with altogether and participants could meet each other in person before engaging in the conversation in each condition. Having participants meet in person, before engaging in a chat or e-mail exchange at another time, would aid in providing evidence that they are in fact speaking to another person, and may make for a more socially realistic situation in which two people who are already acquainted exchange with each other. An additional adjustment that could be made to future research projects investigating the same problem involves the actual content of the interaction. In the studies cited above, participants were typically asked to either get to know each other or work to solve a task or decision-making problem. In the present study, a very straightforward interview was used to elicit instances of self-disclosure. Implementing a "get to know you" task or decision-making scenario like those used in the aforementioned

studies may facilitate in making the conditions more natural rather than a series of questions that go unreciprocated.

Conclusion

Past research on the online disinhibition effect and self-disclosure has focused mainly on the causal factors of anonymity and invisibility. The current study sought to expand this investigation to include asynchronicity. Results indicated that, compared to those answering questions in a synchronous online chat condition, those answering the same questions in an asynchronous e-mail interaction did not demonstrate a greater depth of disclosure, meaning that they information they shared was not deemed to be more intimate, personal, or vulnerability-inducing, a greater breadth of disclosures, meaning they did not share more discrete pieces of information, or a greater willingness to provide answers to the questions at all. These results include the perception of external raters as well as feedback provided by participants. Contrary to predictions, having the belief that a month's long span of time will elapse before one's answers to a series of personal questions are read did not elicit an enhanced tendency to disclose. These results appear to cast doubt on at least one tenet of Suler's (2004) theory of online disinhibition.

When situating the results of the present study within the great self-disclosure literature, it suggests that what contributes more to instances of self-disclosure than the mode of communication, or the medium, one uses to self-disclose are the social characteristics of the individuals involved in the interaction, their perceptions of the situation, and their reasons or motivations for investing in the act of disclosing.

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Appendix A

Demographic Questionnaire

Please indicate your age: _____

Are you: Male " Female " Transgender " Open: _____

What is your racial/ethnic background? Open:_____

School enrollment: Full time student " Part time student

Year in university: First year " Second year " Third year " Fourth year " More than fourth years "

What is/are your major(s)? _____

What is/are your minor(s)? _____

Appendix B

List of Questions

1. How old are you?

2. What gender are you?

3. Where is your home town?

4. What is your major?

5. What ethnicity are you?

6. Do you have any siblings – if so, how many?

7. What are your favourite things to do in your free time?

8. What characteristics of yourself are you most proud of?

9. What are some things that make you furious?

10. What is your relationship like with your parents?

11. What are some of the things you dislike about yourself?

12. What has been the biggest disappointment in your life?

13. What do you dislike about your physical appearance?

14. What is your most common sexual fantasy?

15. What have you done in your life that you feel most guilty about?

16. What are some things that others do that really hurt your feelings?

17. What characteristics of your best friend really bother you?

18. Can you describe the last time you were sexually aroused?

Appendix C

Coding Protocol

<u>**Depth**</u>

1 point response – There is nothing of an intimate or personal nature revealed. What is provided are objective facts (e.g. age, gender, ethnicity). There is nothing of a subjective or emotional nature. The participant is not disclosing thoughts or feelings, but strictly verifiable information.

Example: How old are you? *18.*

2 point response – The answer goes beyond verifiable facts about the individual but remains benign in terms of the information disclosed. Little personal information is disclosed and what personal information is disclosed is tame and accompanied by little detail. It is a surface-level answer that exposes the person to little to no vulnerability. The response may be predominantly about other people with little reference to the individual's views/feelings/thoughts about them.

Example 1: What do you like to do in your free time? *I like to exercise – run mostly, I also enjoy watching TV and reading – Game of Thrones for both.*

The disclosure has gone beyond verifiable facts, but remains quite tame.

Example 2: What characteristics of your best friend really bother you? *He can flake sometimes.*

This response is exclusively about another person and has exposed the participant to little vulnerability.

3 point response – The information that has been revealed is somewhat personal. While the information is predominantly regarding the individual involved and not others, the disclosure is not substantial. There is little social risk involved in revealing such information and the individual has only opened him- or herself up to some minor ridicule or judgment. The disclosure may leave the individual somewhat vulnerable. In addition to being only somewhat personal, the disclosure includes little detail. The individual may have revealed information that is indicative of behaviour/views/opinions that are minorly socially undesirable (e.g. minor dishonesty). The answer goes beyond surface level and involves some level of introspection. There is more detail involved than a 2 point response. If the answer is with respect to another person, the individual has disclosed some negative views about that person (representing higher social risk taken in the disclosure).

Example: What characteristics of yourself are you most proud of? *I think I'm pretty empathic – I've been told as much anyway. I've consistently been willing to put myself in other's shoes and try to understand where they're coming from, like, there were a few times in high school when I*

invited people out who normally didn't get invitations to things, or asked them to sit with me and some friends during lunch.

The disclosures are still relatively benign, but there is a level of detail, including tangible examples, and introspection present that merits a response higher than 2.

4 point response – Information has been revealed that is quite personal and intimate in nature. There is appreciable social risk involved in revealing such information as the person may be opening themselves up to the possibility of ridicule or judgment. The disclosure may leave the individual quite vulnerable. The individual may have revealed information that is indicative of behaviour/views/opinions that are somewhat socially undesirable (e.g. impactful dishonesty, infidelity). While the disclosure is quite personal the response may be lacking in detail. If the disclosure is with respect to another person, the participant has disclosed some harsher negative views about that individual.

Example: What is your most common sexual fantasy? *I've always wanted to be dominated by a woman.*

Considerable social risk taken in answering with this, but not quite enough detail to merit a 5.

5 point response – Information has been revealed that is profoundly personal and intimate in nature. Revealing such information would be considered taking a social risk in that the individual may be opening themselves up to the possibility of more severe ridicule or harsher judgment. The disclosure leaves the individual very vulnerable. The individual may have revealed information that is indicative of behaviour/views/opinions that are quite socially undesirable (e.g. crimes, participation in social taboos). Not only is the disclosure extremely personal, it is made all the more so by the high level of detail involved. If the disclosure is with respect to another person, the participant has disclosed a very harsh and negative view of that person with substantial detail.

Example: Can you describe the last time you were sexually aroused? *I can't even think of it. I just really don't have anything to do with that. I don't really see myself as being able to participate in any of that – I don't see myself as "sexy" and I can't even begin to imagine how hard it would be to be intimate with someone. I don't want anyone else to see me without clothes; I can't even look at myself like that. They'd probably take off.*

This is an extremely personal answer in which a high level of shame and vulnerability is present. Additionally, the answer is quite detailed.

Note: As the questions progress, the level of depth involved in the disclosure necessarily increases simply as a product of the nature of the questions. It is likely that questions beyond #10 will merit a score of 3 or higher simply due to the fact that they have been answered. What will

separate 3 from 4 from 5 point answers is, as described, the level of vulnerability shown, the social risk taken, and the detail of the disclosure.

Note: Just because an answer is detailed does not alone mean it should receive an increased depth score, for example, the answer to question 7 (What are your favourite things to do in your free time) can merit a very detailed response, however, it should remain as a 2 point response unless there is some vulnerability or intimacy shown. Responses must first be intimate, and then detailed to merit higher depth scores

Note: If an answer contains information that can be coded using multiple numbers, use the highest number.

Note: A response of "prefer not to answer" receives a score of 0.

Note: If the participant does not provide an actual answer (e.g. "I don't know" or "I can't remember") it should be scored a 0.

Note: If the participant provides a response denying that they have an experience or quality relevant to the question (e.g. "I don't have…a sexual fantasy OR guilt OR problems with my best friend" for questions 14, 15, 17) code the answer 2.

Discrete Self-Disclosures

Indicate any time a new piece of information has been revealed by the participant. "New" means anything we did not already know about this person (i.e. do not code the same disclosure more than once). It can be an objective fact (e.g. age or major), or views, thoughts, opinions, and details of events. Longer answers will typically lead to higher scores on this variable, particularly if the individual is relating a story or event and each additional detail of the story is unique. However, in order to be considered a self-disclosure, the element of the answer (whether story or not) must be about the respondent and not an objective external event that is not directly related to the individual (e.g. Question 15. What have you done in your life that you feel most guilty about? Answer: *I stole from a restaurant I worked at. I took money right from the till. It was a mom and pop restaurant, not a big chain one and it closed down while I was still working there. I feel bad because I kind of feel responsible for it closing*. This constitutes 3 disclosures: stealing from a restaurant, taking money right from the till (this is unique enough because the theft could have involved stealing product, or taking other employees' tips off of tables, etc.) and feeling bad due to a sense of responsibility for the closure. The sentence about the size of the restaurant and it not being a chain is certainly new information, but it does not relate directly to the participant's thoughts, feelings, actions, perceptions, etc.)

An elaboration of a stated disclosure does not merit an additional disclosure unless it offers new information (e.g. Question 10. What is your relationship like with your parents? A: *Good, I get*

along well with them = 1 disclosure; saying that the relationship is good implies the respondent gets along well with them. An example of an elaboration that does contain new information: Question 7. What are your favourite things to do in your free time? Answer: *Exercise, mostly running*. This merits two disclosures, one because we've found out that the individual likes to exercise and two because we've found out his/her exercise of choice is running, which is one among many possibilities.).

A discrete disclosure will <u>not</u> be counted when an element of the answer is implied by the fact that they have answered that question – this counts as a redundancy. For example: Question 16. What are some things that others do that really hurt your feelings? *I've been called names before, that was pretty hurtful*. This answer counts as 1 disclosure – the comment about being called names. The individual states that the experience was hurtful, but that is not a new piece of information as it is assumed that it was hurtful due to the fact that it was his/her answer to this specific question.

When the participant is referring to another person (most often question 17) a discrete disclosure should only be counted when the participant's perception or opinion of that person is given, usually in the form of a descriptive statement or adjective. A discrete disclosure will <u>not</u> be counted when the individual is relating a story or details of an event about another person and is speaking about things that happened to that person.

Example: Question 15. What have you done in your life that you feel most guilty about? *I was dating a guy back in high school – before I came out – and I knew I was interested in girls, but didn't want to act on it publicly, so I started seeing a girl without breaking up with my boyfriend first, in order to keep up appearances. Anyway, he eventually found out and was pretty hurt. I feel really bad about that.* The statement "he eventually found out and was pretty hurt" constitutes two new pieces of information, but do not count as discrete disclosures as they do not relate directly to the participant.

Do not count "people" as a discrete disclosure when it is just used as a generalization to various questions. Example: What are some things that make you furious? *Seeing people text and drive.* The "seeing people" element of this answer does not merit a disclosure

Do not break down something that is a singular answer into its component parts to form multiple disclosures. Example: What are some things that make you furious? *When people drink and drive.* This is only a single disclosure, "drink and drive" is what is infuriating to this person, it would not be correct to give two disclosures: one for "drink" and one for "drive".

Words that are synonyms do not constitute multiple disclosures (e.g. Question 17. What characteristics of your best friend really bother you? A: *I dislike when he gets mad, frustrated, or angry easily.* = 1 disclosure).

One method for determining if something should count as a unique disclosure is to consider: "Can this piece of information be an answer to a unique question?" If the answer is yes, it may qualify as a disclosure.

For example: Question 6. Do you have any siblings – if so, how many?

Answer: *Yep, two biological siblings, both brothers, one's older, one's younger and a half sister who my mom had with her new husband.*

This constitutes 8 unique disclosures: 2 bio siblings, both male, birth order = 2 (one is younger, one is older), half-sister = 2 (half sibling + half sibling's gender), half-sister is her mother's child, the mother had the half-sister with a new husband

The 8 unique questions we can formulate from this answer are – How many biological siblings do you have? What gender are your two biological siblings? Is one of your brothers older? Is one of your brothers younger? Do you have any half siblings? What gender is your half-sibling? Is your half-sister your mother or father's child? Who did your mother have your half-sister with?

Note: A response of "I'd prefer not to answer" receives a disclosure score of 0.

Note: Responses of "I don't know" or "I can't remember" do not merit a disclosure score, they should be scored 0

Note: A response of "I don't have one" (most often used for question 14) receives a single disclosure score.

<u>Prefer not to answer</u>

Simply note in the transcript whenever this statement, or a related one (e.g. "I don't want to

say"), is used by the participant and indicate all usages at the top of the first page of the

transcript.

Appendix D

Coding Example 1

1. How old are you?

I'm 19 years old, I was born in 1997.

Depth score: 1 – this is verifiable, factual information

Discrete disclosure score: 2 – While including age and birth year may seem redundant, it is actually possible that the individual was born in either '96 or '97, so, in this case, the birth year constitutes "new information".

2. What gender are you?

Female

Depth score: 1

Discrete disclosure score: 1

3. Where is your home town?

Windsor, Ontario

Depth score: 1

Discrete disclosures: 1

4. What is your major?

Psychology and Philosophy

Depth score: 1

Discrete disclosures: 1 – While the answer given constitutes a double major, it is really only a single piece of information.

5. What ethnicity are you?

I'm kind of mixed, my dad is Greek and my mom is Thai.

Depth: 1

Discrete Disclosures: 3 – "mixed", and the unique ethnicity of each parent

6. Do you have any siblings – if so, how many?

Yep, two biological siblings, both brothers, one's older, one's younger and a half sister who my mom had with her new husband.

Depth: 1 – while the answer includes information not asked in the question (that her parents were divorced, her mother remarried, and had a child) it is all completely factual and verifiable.

Discrete: 8 – 2 bio siblings, both male, birth order = 2 (one younger, one older), half-sister = 2 (half sibling + half sibling's gender), half-sister is her mother's child, the mother had the half-sister with a new husband

7. What are your favourite things to do in your free time?

I like to exercise – run mostly, I also enjoy watching TV and reading – Game of Thrones for both.

Depth: 2 – the disclosure has gone beyond verifiable facts, but remains quite tame.

Discrete: 5 – Exercise, run, watch TV, read, preferred material to watch/read

8. What characteristics of yourself are you most proud of?

I like that I'm not a pushover, I'm really not afraid to stand up for myself. Also that I'm resilient, I've been through a lot of challenges in my life and have bounced back and made it to post-secondary schooling.

Depth: 3 – It goes beyond factual as well as benign personal details. We learn about some challenges, but the answer is not specific regarding those challenges to earn a higher score.

Discrete: 2 – 1 for "not a pushover," the second clause of the sentence does not provide enough new information to merit an additional disclosure; not being a pushover implies you stand up for yourself. 1 for "resilient," again, the second clause does not provide any new details; being resilient implies that you've experienced challenges and bounced back. The participant also says she has made it to post-secondary schooling, but we already know that, this is a study that recruits participants solely from a pool at a post-secondary institution.

9. What are some things that make you furious?

I can't stand when others mistreat those with disabilities. Also those who are intolerant of others who are different from them. It actually really gets under my skin when people interrupt me as well.

Depth: 2 – there is little here that constitute intimacy or vulnerability, the information is quite benign.

Discrete: 2 – The second sentence is a unique disclosure while the first is an elaboration of that – it is assumed that if someone does not like it when others are intolerant of those with differences they would not like it when people with disabilities are mistreated. Being interrupted is an additional unique disclosure.

10. What is your relationship like with your parents?

It could be better, they're divorced, but we get along well enough.

Depth: 3 – There is some vulnerability present in the sentiment of "it could be better" that goes beyond benign.

Discrete: 1 – Only "it could be better" is new and unique. We've learned already that the parents are divorced from question 6 and this fact has been accounted for when we coded for the "new husband". Likewise, "get along well enough" is not distinct enough from "could be better" to merit an additional disclosure.

11. What are some of the things you dislike about yourself?

I can't stand the amount of procrastinating I do, I've actually failed two tests this semester because I've put off studying so long. Other than that, there are some things about my body I don't really like.

Depth: 3 – There is definitely some emotional vulnerability here, but the comment about body image is not specific enough to elicit a higher score.

Discrete: 3 – Procrastinating; the fact that she has failed two tests merits its own disclosure as it is an elaboration of procrastination but is still unique and new information; the body image comment.

12. What has been the biggest disappointment in your life?

I'd have to say it's when my parents got divorced.

Depth: 3 – There is some emotional vulnerability in this response, but there is a lack of detail that prevents it from meriting a higher score.

Discrete: 1 – Despite the fact that we already know that her parents are divorced the information has been prevented in an entirely different context here and thus merits a new disclosure. It previously earned a discrete disclosure score because we learned that they were divorced, it now merits one because she states that it has been the biggest disappointment in her life, these two contexts are distinct enough to merit their own scores.

13. What do you dislike about your physical appearance?

I really have a hard time looking at my midsection and thighs, I've actually come a long way in the way I see my body but there's still some work to do. I used to really hate parts of my

body and saw someone about it for a while, so it's a little better these days but I still avoid mirrors if I can.

Depth: 4 – Some information that is quite personal including disclosing some serious body image disturbances and the fact that she sought help for those disturbances. An even higher score would have been merited if more detail was involved about the nature of the previous disturbances, the emotional impact, the nature of the help, etc.

Discrete: 5 – 1 midsection, 2 thighs, 3 "…come a long way…" is unique but makes "used to really hate" redundant, 4 sought help, 5 "avoid mirrors" is unique and makes "still some work to do" redundant.

14. What is your most common sexual fantasy?

I'd prefer not to answer

Make note of 1 "prefer not to answer" response

Depth: 0

Discrete: 0

15. What have you done in your life that you feel most guilty about?

I lost touch with a friend a few years ago after she moved. We used to be quite close but we stopped talking and I really miss her. I guess I feel some guilt and regret over not trying to maintain that relationship.

Depth: 3 – Some vulnerability is displayed in stating that she misses the friend and feels guilt and regret.

Discrete: 4 – 1 lost touch with a friend, 2 Used to be close, 3 really miss her 4 guilt/regret over not trying to maintain the relationship

Note: "after she moved" does not merit a disclosure as it does not directly relate to the participant. "Stopped talking" does not merit a disclosure as it is not unique from "lost touch". Guilt and regret are similar enough to not merit distinct disclosures.

16. What are some things that others do that really hurt your feelings?

Basically any time someone comments about my weight, or if I even think they're looking at me because of my weight.

Depth: 3 – There is some vulnerability and minor social risk, but not enough detail to merit a higher disclosure.

Discrete: 1 – Others making comments and perceiving that others are looking at her because of her weight are two distinct disclosures.

17. What characteristics of your best friend really bother you?

I actually don't have a best friend. I'd say the friend that I mentioned earlier was my last best friend and I haven't really had one since she left. It's definitely something that I miss and think about a fair amount.

Depth: 4 – There is quite a bit of vulnerability and social risk involved here – she has disclosed that she does not have anyone in her life who is a close friend and states that it impacts her thoughts and emotions.

Discrete: 4 – 1 Doesn't have a best friend, 2 the friend mentioned earlier was her last one (this makes not having one since she left redundant), 3 something she misses, 4 something she thinks about a fair amount.

18. Can you describe the last time you were sexually aroused?

I can't even think of it. I just really don't have anything to do with that. I don't really see myself as being able to participate in any of that – I don't see myself as "sexy" and I can't even begin to imagine how hard it would be to be intimate with someone. I don't want anyone else to see me without clothes; I can't even look at myself like that. They'd probably take off.

Depth: 5 – This is an extremely personal answer in which a high level of shame and vulnerability is present. Additionally, the answer is quite detailed.

Discrete: 4 - 1 I don't have anything to do with that/don't participate in that, 2 doesn't see self as "sexy", 3 it is hard to even imagine, 4 don't want anyone to see me without clothes

Note: "I can't even think of it" does not constitute a disclosure. "I can't even look at myself like that" is redundant with the "I avoid mirrors" comment from question 13. "They'd probably take off" is a redundant elaboration of not wanting others to see her without clothes, it contributes more to depth.

Appendix E

Coding Example 2

1. How old are you?

22

Depth: 1

Discrete: 1

2. What gender are you?

Male

Depth: 1

Discrete: 1

3. Where is your home town?

Windsor

Depth: 1

Discrete: 1

4. What is your major?

Business

Depth: 1

Discrete: 1

5. What ethnicity are you?

White

Depth: 1

Discrete: 1

6. Do you have any siblings – if so, how many?

No

Depth: 1

Discrete: 1

    7. What are your favourite things to do in your free time?

    Gym, hang with friends, drink

Depth: 2

Discrete: 3

    8. What characteristics of yourself are you most proud of?

    Funny, good looking, smart

Depth: 2

Discrete: 3

    9. What are some things that make you furious?

    Bad drivers

Depth: 2

Discrete: 1

    10. What is your relationship like with your parents?

    Good, I still live with them and we get along

Depth: 2

Discrete: 2 – 1 "good", 2 "live with them"

Note: "we get along" is redundant with "good"

    11. What are some of the things you dislike about yourself?

    I'm really bad at talking to girls.

Depth: 3 – some vulnerability is present, but little detail is given.

Discrete: 1

    12. What has been the biggest disappointment in your life?

    Not getting into the school I wanted to because of my grades.

Depth: 3 – Some vulnerability shown as he shows acknowledges he missed an opportunity due to his own actions

Discrete: 2 – 1 not getting into the school, 2 due to his grades (an elaboration that provides a new piece of information)

13. What do you dislike about your physical appearance?

I'm kind of short.

Depth: 3 – Some vulnerability and social risk is demonstrated by disclosing a specific trait he is self-conscious of.

Discrete: 1

14. What is your most common sexual fantasy?

2 girls.

Depth 3 – Some social risk taken by answering the question at all.

Discrete: 1

15. What have you done in your life that you feel most guilty about?

Cheated

Depth: 3 – cheating is a violation of social norms and expectations and thus he takes a risk in admitting it here, however, it is not detailed enough to merit a higher score: what kind of cheating is it? On a test? Infidelity?

Discrete: 1

16. What are some things that others do that really hurt your feelings?

Nothing really, don't invite me out I guess.

Depth: 3 – again, some vulnerability is implied just by answering the question as in doing so he describes something he finds hurtful.

Discrete: 1 – Only the "don't invite me out" merits a disclosure, "nothing really" was evidently not true.

17. What characteristics of your best friend really bother you?

He can flake sometimes.

Depth 2 – it's entirely about his perception of someone else with very little detail and no description of its impact on him.

Discrete: 1

18. Can you describe the last time you were sexually aroused?

Yesterday when I woke up.

Depth: 3 – Even though there is very little detail the answer is somewhat personal due to the intimate nature of the question.

Discrete: 2 – Yesterday and "woke up"

Appendix F

Coding Example 3

1. How old are you?

I'm 20.

Depth: 1

Discrete: 1

2. What gender are you?

I'm male.

Depth: 1

Discrete: 1

3. Where is your home town?

I'm from Stouffville, it's just a bit outside of Toronto.

Depth: 1

Discrete: 1 –We're given multiple pieces of information but only the home town counts, we can discern for ourselves after learning the location of the hometown where it is located with relation to other cities.

4. What is your major?

Right now I'm an English major with a psychology minor, I used to be in Theatre but I didn't really see that going anywhere.

Depth: 2 – the participant provides some information beyond verifiable facts as he discloses the reason he changed majors.

Discrete: 4 – 1 English major, 2 psychology minor, 3 formerly a Theatre major, 4 reason for changing

5. What ethnicity are you?

I'm Caucasian.

Depth: 1

Discrete: 1

6. Do you have any siblings – if so, how many?

Yes, I have two younger sisters.

Depth: 1

Discrete: 3 – 1 two siblings, 2 both younger, 3 both sisters

7. What are your favourite things to do in your free time?

I can't really say I have a lot of free time. I'm mostly busy with school and work, but when I do get some time alone I like to spend it with my family.

Depth: 2 – it goes beyond verifiable information but is relatively benign.

Discrete: 4 – 1 for the first sentence, 2 for being busy, 3 for being busy with work (we already knew he was in school, but did not know he was employed), 4 for spending it with family

8. What characteristics of yourself are you most proud of?

I think I'm pretty empathic – I've been told as much anyway. I've consistently been willing to put myself in other's shoes and try to understand where they're coming from, like, there were a few times in high school when I invited people out who normally didn't get invitations to things, or asked them to sit with me and some friends during lunch.

Depth: 3 – The disclosures are still relatively benign, but there is a level of detail, including tangible examples, and introspection present that merits a response higher than 2.

Discrete: 3 – 1 for "empathic", 2 for the story of inviting people out, 3 for the story about asking people to sit with him.

Note: "I've been told as much" is not a self-disclosure, the start of the second sentence "I've consistently…" is a redundant elaboration of the first.

9. What are some things that make you furious?

I guess it could be boiled down to rude people, like, people who don't hold the door for other's or say thank you, etc.

Depth: 2

Discrete: 1 – only for "rude people" the other two examples are not instances of self-disclosure, they are only examples of what his answer to the question is, we learn nothing new about him from these examples except that he doesn't when people do these things which is redundant as he's already stated he is made furious by rude people. This is scored differently from the previous question's examples because those related directly to something he participated in.

10. What is your relationship like with your parents?

It's actually really great, I have so much respect for them, they've been the most consistent and supportive presence in my life for a long, long time.

Depth: 2 – this goes beyond verifiable facts but is primarily about other people and provides little detail.

Discrete: 4 – 1 "really great", 2 "respect", 3 "consistent", 4 "supportive"

Note: "long time" is redundant with consistent

11. What are some of the things you dislike about yourself?

Not a ton now, actually, I've seen my share of difficulties in the past, but right now I'm pretty happy with myself.

Depth: 3 – Some vulnerability shown in alluding to previous difficulties, though not enough detail to warrant a higher score.

Discrete: 2 – 1 for "not a ton now" which makes "right now I'm pretty happy" redundant, and a 2nd for the "difficulties" disclosure.

12. What has been the biggest disappointment in your life?

I guess the way I've acted in the past, I made some poor decisions and it resulted in some pretty big headaches for my friends and family.

Depth: 3 – again, some vulnerability shown when alluding to past difficulties, especially when indicating he was the source of those difficulties, but not enough detail or specificity for it to be higher.

Discrete: 3 – 1 "acted in past", 2 resulting in consequences for friends 3 resulting in consequences for family

Note: Making poor decisions is redundant with "the way I've acted in the past" – if he is disappointed with how he acted before it is assumed he sees himself as having made poor decisions.

13. What do you dislike about your physical appearance?

I have some scars that I'm not thrilled about.

Depth: 3 – some vulnerability implicit in admitting this at all, however, not detailed enough to merit a higher score - we do not know what the scars result from – was it a medical procedure? Self-inflicted? An accident?

Discrete: 1 – having scars

Note: the fact that he is not thrilled about them does not constitute an additional disclosure as that is assumed by the fact he chose them as the answer to this question.

14. What is your most common sexual fantasy?

I've always wanted to be dominated by a woman.

Depth: 4 – considerable social risk taken in answering with this, but not quite enough detail to merit a 5.

Discrete: 2 – 1 being dominated, 2 by a woman

15. What have you done in your life that you feel most guilty about?

I mentioned this before – but it's what I put my parents through. I was cutting on and off when I was in high school and I once went a little deeper than I meant to. It was a pretty big ordeal and I ended up in the hospital for a couple nights followed by a few years of counselling. I just regret that I made them worry so badly.

Depth: 5 – displays extreme vulnerability in disclosing something so serious, and is accompanied by an appreciable level of detail.

Discrete: 5 - 1 "what I've put my parents through" although he's stated this before it was within the context of "life's biggest disappointment" it is now within an entirely new context and thus is not redundant, 2 cutting on/off, 3 "once went deeper," 4 hospitalized, 5 counselling

Note: "regret I made them worry" is redundant with 1. "Big ordeal" is not a unique exposure as that is captured by most of his answers here.

16. What are some things that others do that really hurt your feelings?

It kind of hurts when my friends don't check in on me, when they don't call or text for a while.

Depth – 3 some emotional vulnerability and pain is expressed

Discrete: 1 – the two examples of not calling or texting are not unique enough from not checking in.

17. What characteristics of your best friend really bother you?

He can get a little too invested when it comes to girls, like he kind of falls of the face of the earth whenever he starts seeing someone new.

Depth: 2 – no detail in terms of how it has affected him, how it makes him feel.

Discrete: 2 – 1 "too invested", 2 "fall of the earth"

Note: these sentiments are unique enough to merit separate disclosures as the first indicates a general sentiment while the second is a specific enough example that it could not have been safely assumed that this is what he meant. Too invested could have meant spending too much money, too emotionally invested, etc.

18. Can you describe the last time you were sexually aroused?

Well it was actually just yesterday. I was in line at a book store and I saw a woman holding 50 shades of gray which kind of aroused me because I know that book's pretty racy and it was fun to see a pretty attractive woman holding it. I actually started thinking about her doing some of those things to me – the domination stuff from the book – while I was in line and had to gather myself before I got carried away.

Depth: 5 – This is taking a very high social risk with a fair amount of detail. Discusses something at length that may be considered a bit of a social taboo.

Discrete: 5- 1 "yesterday", 2 he was in a bookstore, 3 he saw an attractive woman holding a book, 4 he thought about her "doing those things" 5 it got to the point where he had to collect himself.

Note: the title of the book is not a self-disclosure as it isn't directly related to him (i.e. he didn't say "it's my favourite book," he just shares some common knowledge about the book – that it's racy).

Appendix G

Coding Practice Example 1

1. How old are you?

21

2. What gender are you?

Female

3. Where is your home town?

Tecumseh

4. What is your major?

Psychology

5. What ethnicity are you?

Caucasian

6. Do you have any siblings – if so, how many?

Yes, I have 3 brothers, all older.

7. What are your favourite things to do in your free time?

I enjoy looking through social media and watching YouTube videos.

8. What characteristics of yourself are you most proud of?

I'm most proud of my moral conduct.

9. What are some things that make you furious?

I think just mean-spirited people who go out of their way to hurt others.

10. What is your relationship like with your parents?

It's pretty good, we don't talk that often, but there's no hate between us or anything.

11. What are some of the things you dislike about yourself?

I have VERY bad breath!

12. What has been the biggest disappointment in your life?

I kind of wish I got along with my parents better, that we were closer.

13. What do you dislike about your physical appearance?

I don't really like my feet – they're kind of hairy.

14. What is your most common sexual fantasy?

There are a couple of movie stars I fantasize about quite often.

15. What have you done in your life that you feel most guilty about?

I cheated on an exam back in first year. Didn't get caught, but I don't feel great about it.

16. What are some things that others do that really hurt your feelings?

It really hurts when I get assignments back and the comments are kind of mean.

17. What characteristics of your best friend really bother you?

She can be a little flakey, especially if there's a guy she's interested in.

18. Can you describe the last time you were sexually aroused?

I saw a certain movie star on a tabloid magazine in the checkout line at the grocery store and I guess I got kind of aroused.

Appendix H

Coding Practice Example 2

1. How old are you?

I'm 22

2. What gender are you?

Male

3. Where is your home town?

I'm originally from a small city out West

4. What is your major?

Business

5. What ethnicity are you?

I'm Thai and African

6. Do you have any siblings – if so, how many?

Yes, I have a younger sister and a half brother who is older

7. What are your favourite things to do in your free time?

I mostly like to sit along the river and watch the boats drift by

8. What characteristics of yourself are you most proud of?

I like to think that I'm pretty intelligent and I have a strong internal discipline.

9. What are some things that make you furious?

Usually just ignorant people, people who are intolerant of others.

10. What is your relationship like with your parents?

I haven't actually had any contact with my dad since I was 3 or so, but I have a good relationship with my mom.

11. What are some of the things you dislike about yourself?

I wish I was a bit more social, I think I spend too much time alone.

12. What has been the biggest disappointment in your life?

Not having any sort of relationship with my father.

13. What do you dislike about your physical appearance?

My mixed race has resulted in some interesting features that I don't outright dislike, but sometimes they can feel a little out of proportion – my nose, for instance.

14. What is your most common sexual fantasy?

I'd prefer not to answer.

15. What have you done in your life that you feel most guilty about?

I can't really think of anything.

16. What are some things that others do that really hurt your feelings?

I've had some racial slurs directed at me, that was pretty hurtful.

17. What characteristics of your best friend really bother you?

He squanders his potential. He is very bright but wastes incredible quantities of time on the Internet.

18. Can you describe the last time you were sexually aroused?

I'd prefer not to answer.

Appendix I

Coding Practice Example 3

1. How old are you?

18

2. What gender are you?

Female

3. Where is your home town?

Windsor!

4. What is your major?

Psychology and Biology

5. What ethnicity are you?

Vietnamese

6. Do you have any siblings – if so, how many?

I have a younger sister and a younger brother. My younger brother has autism and is pretty low-functioning and I've been caring for him, along with my mom, for as long as I can remember.

7. What are your favourite things to do in your free time?

I don't really have any. Most of my time is spent at school or work or taking care of things at my house.

8. What characteristics of yourself are you most proud of?

I guess I'm pretty mature. I've been forced to grow up pretty fast considering the amount of responsibility that was handed to me when I was younger.

9. What are some things that make you furious?

Definitely ungratefulness. It makes me mad when people complain about small, inconsequential things in their lives when they are free of any big, meaningful problems.

10. What is your relationship like with your parents?

With my mom it's pretty good, we have more of a co-worker relationship than a mother-daughter relationship because we both invest a lot of our time to run the house and take care of my brother. With my Dad it's not as great. He divorced my mom when I was 7 and hasn't been around very much. He lives in the city but doesn't make an effort to see us. I'm not too interested in having a relationship with him either at this point to be quite honest.

11. What are some of the things you dislike about yourself?

I can be pretty critical of others. I have high standards for myself and sometimes I hold others to those standards as well which is pretty unrealistic of me.

12. What has been the biggest disappointment in your life?

I guess it's been the lack of childhood I had. Like I said, I was forced to grow up pretty fast and that left me without some of the innocence and carefreeness a lot of other kids get.

13. What do you dislike about your physical appearance?

I could stand to lose some weight.

14. What is your most common sexual fantasy?

I usually just fantasize about what I like to do with my girlfriend.

15. What have you done in your life that you feel most guilty about?

I was dating a guy back in high school – before I came out – and I knew I was interested in girls, but didn't want to act on it, so I started seeing a girl without breaking up with my boyfriend first, in order to keep up appearances. Anyway, he eventually found out and was pretty hurt. I feel really bad about that.

16. What are some things that others do that really hurt your feelings?

Not much, I think I'm pretty impervious to the behaviour and judgment of others at this point.

17. What characteristics of your best friend really bother you?

Well, my girlfriend is my best friend and there really isn't a whole lot that bugs me about her to be honest.

18. Can you describe the last time you were sexually aroused?

I stayed over at my girlfriend's last night and when we got up this morning we took a shower together – that was pretty arousing.

Appendix J

Post-Interaction Self-Report Questions

1. How much information did you reveal about yourself during the interaction?
    1. None at all
    2. A little
    3. A medium amount
    4. Quite a bit
    5. A lot
2. How often did you tell the truth in your answers?
    1. I always lied
    2. I lied more than I told the truth
    3. I lied and told the truth in equal amounts
    4. I told the truth more than I lied
    5. I always told the truth
3. How vulnerable did you feel during the interaction?
    1. Very vulnerable
    2. Somewhat vulnerable
    3. A bit vulnerable
    4. Not very vulnerable
    5. Not vulnerable at all
4. How comfortable did you feel when revealing personal information in the interaction?
    0. I did not reveal any personal information
    1. Very uncomfortable
    2. Quite uncomfortable
    3. A bit uncomfortable
    4. Not very uncomfortable
    5. I felt completely comfortable
5. Who do you believe you were responding to in the interaction?
    open
6. Note: answer only if you participated in an e-mail interaction, not chat.
    How long until your partner sees your e-mail response?
    open

Appendix K

Participant Pool Recruitment Advertisement

Title: Interacting With Others Online

Researcher: Chris Edmondstone, MA candidate

Duration: 60 minutes

Credit: 1 point

Description:

The purpose of this study is to examine patterns of interactions between individuals online. The study is completed exclusively online. You will be asked to complete a short questionnaire followed by participating in an online conversation with another student at the University of Windsor. All responses will remain confidential. Once you sign up for the study and choose a time slot, you will be e-mailed the URL to the study webpage upon your time slot's arrival by the researcher. You are required to sign up at least 24 hours before your chosen time slot.

Eligibility requirements:

Please only sign up for this study if you are fluent in English and have experience using both e-mail (i.e. Gmail, Hotmail, Outlook, etc.) and a chat service (i.e. the chat function in Gmail, Facebook Messenger, MSN messenger, etc.).

Appendix L

Initial Instructions Contact – Synchronous Condition

Hello (Name)

Thank you for agreeing to participate in the study. At the bottom of this e-mail is a link that will allow you to commence the study. Before beginning the study itself, you will be required to read a Letter of Information for Consent that details your rights as a participant in this study. If you consent to participate in the study, a brief questionnaire will begin, after which, a link will appear to a Gmail account in which you will use the chat function to have a conversation with another student at the University of Windsor. The content of your conversation with the student will be entirely confidential. Instructions for the chat will also appear at the end of the survey. Please complete this study – the questionnaire as well as interaction – alone in a quiet and private place.

Thank you,

Chris Edmondstone, MA candidate

Appendix M

Initial Instructions Contact – Asynchronous Condition

Hello (Name),

Thank you for agreeing to participate in the study. At the bottom of this e-mail is a link that will allow you to commence the study. Before beginning the study itself, you will be required to read a Letter of Information for Consent that details your rights as a participant in this study. If you consent to participate in the study, a brief questionnaire will begin, after which, a link will appear to a Gmail account in which you will use the e-mail function to have a conversation with another student at the University of Windsor. The content of your conversation with the student will be entirely confidential. Instructions for the e-mail will also appear at the end of the survey. Please complete this study – the questionnaire as well as interaction – alone in a quiet and private place.

Thank you,

Chris Edmondstone, MA candidate

Appendix N

Letter of Information for Consent to Participate in Research

Title of Study: Interacting With Others Online

You are asked to participate in a research study conducted by Chris Edmondstone and supervised by Dr. Ken Cramer from the Department of Psychology at the University of Windsor. The study results will be used to fulfill the requirements of a Master's thesis.

If you have any questions or concerns about the research, please feel to contact Chris Edmondstone at edmonst@uwindsor.ca, or Dr. Ken Cramer at kcramer@uwindsor.ca or 519-253-3000 ext. 2239.

PURPOSE OF THE STUDY

The purpose of this study is to explore the ways in which strangers interact with each other online. Various modes of online communication will be implemented to determine differences in communication patterns.

PROCEDURES

If you volunteer to participate in this study, you will be asked to do the following things. You will be asked to complete an online questionnaire and an online task where you will interact with a fellow student from the University of Windsor. At the end of the study you will be directed to a separate form that will ask you to provide your name and student number to verify your bonus credit for participation.

The entire study will take approximately 60 minutes of your time. The study must be completed in one online session. If you volunteer to participate, please set aside one uninterrupted hour and complete the study in a quiet area without distractions.

POTENTIAL RISKS AND DISCOMFORTS

You will be asked some questions that are personal in nature. A risk of this study is the possibility that thinking about these personal issues may cause some psychological or emotional discomfort. You maintain the right to not answer any questions during this study by stating "I'd prefer not to answer." If you have any concerns you wish to discuss, please feel free to contact the Student Counselling Centre at 519-253-3000 ext. 4616.

POTENTIAL BENEFITS TO PARTICIPANTS AND/OR TO SOCIETY

Participating in this study will provide you with an opportunity to learn about psychological research. Specifically, you will gain knowledge in conducting psychological research online. Also, you may learn more about yourself and the way you interact with other people on the Internet. Finally, participating in this research will contribute to scientific knowledge about patterns of communication across different modalities on the Internet.

COMPENSATION FOR PARTICIPATION

You will receive 1.0 bonus point towards a psychology course for 60 minutes of participation, provided you are registered in the psychology participant pool and enrolled in one or more eligible courses.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Your name and student number will be collected in order for you to receive your bonus credit, but all information that you have shared throughout the study will remain confidential. After you have completed the study, your information will be de-identified: it will receive a number that can only be associated with your name by the principal investigator who will assign bonus points. Your data will be kept separate from any identifying information. All files will be encrypted and password-protected. In order to remain compliant with Senate Bylaw 51 1.12.2 your name and awarded bonus point will be kept on record for 12 months from the end of the semester during which you complete the study. Your name and bonus point information will be kept independent of any of your data that is collected in this study.

PARTICIPATION AND WITHDRAWAL

Your participation in this study is completely voluntary. If you decide to participate, you may withdraw at any time during the survey by clicking on the "Discard responses and exit" button without negative consequences of any kind. However, if you choose to withdraw before completing the survey, you will not receive the bonus credit.

During your interaction, you may refuse to answer any questions you do not want to answer by stating "I'd prefer not to answer" without being punished. We encourage you to answer all questions with which you are comfortable answering, as your responses are important to our investigation. Half credit will be awarded if over half of the questions during the interaction are left completely blank (i.e. not answered at all and not answered with "I'd prefer not to answer"). After completing the session, you will have the option of removing your data from the study. You will be awarded the bonus credit if you complete the questionnaire and task, regardless of whether you choose to include or remove your data from the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE PARTICIPANTS

Once the research is complete, results will be available to all participants on the University of Windsor REB website.

Web address: www.uwindsor.ca/reb

SUBSEQUENT USE OF DATA

These data may be used in subsequent publications, and in presentations. If so, any identifying information will be confidential, and only group data will be reported.

RIGHTS OF RESEARCH PARTICIPANTS

If you have questions regarding your rights as a research participant, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

Chris Edmondstone, B.A., MA candidate

Department of Psychology

University of Windsor

It is recommended that you print out a copy of this letter of information for your records. It also is recommended that you turn off your pop-up blockers before beginning the survey, should you choose to do so.

CONSENT OF RESEARCH PARTICIPANT

"I understand the information provided for the study 'Psychological Factors and Person Perception' described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I will print a copy of this form for my own reference."

To acknowledge that you have read the letter of information, and that you are providing informed consent to participate in this study, please click "I agree" below.

I agree

No thank you

Appendix O

Post-Demographic Questionnaire Instructions – Both Conditions

Your next step is to follow the provided link to a Gmail account where you will participate in an online interaction with a fellow University of Windsor student. The content of your interaction with the student will remain entirely confidential. Although the interaction will remain confidential, we ask that you do not use your name. In the conversation, please be as detailed as possible. Your goal is to answer questions as fully and completely as you can. However, if you feel uncomfortable with a question that is posed to you and do not wish to provide an answer please respond with "I'd prefer not to answer."

Please open the link in a new tab.

Please use the following information to log in:

Account: [account]@gmail.com

Password: [password]

[link to Gmail account]

Note: After completing the interaction please return to this page and proceed to the next page for some post-interaction questions.

Appendix P

Chat Opening

Hi! They've given me some questions that they'd like me to ask you, let me know when you can see this and I'll get started.

Appendix Q

Experimenter Responses for Synchronous Condition

"Okay"

"Interesting"

"Cool"

"I see"

"I understand"

"Alright"

Appendix R

Pre-Self-Report Screening Prompt

You should only be on this page if you have completed the interaction. If you have yet to complete the interaction please return to the previous page and follow the instructions.

If you have completed the interaction please ensure you have logged out of the Gmail account and closed the tab.

If you have completed the interaction please proceed to the next page to complete some post-interaction questions.

Appendix S

E-mail Greeting

Hey! Here are some questions I'm going to ask you to respond to. I won't be able to see any of what you've written or reply to you for a full month. Once you're done just press send.

(list of 18 questions)

Appendix T

Debriefing Form

Thank you for participating in the Interacting With Others Online study. Your participation in the study is now over and no further correspondence will take place between you and the individual you participated in an interaction with.

As was described in the Letter of Information for Consent, the purpose of this study was to examine how people interact online. Specifically we were interested in determining how much people self-disclose, or reveal about themselves, across various online platforms (chat and e-mail). You will have noticed that all of the questions that were posed to you were about *you*: your thoughts, feelings, and opinions. The amount of personal information that you disclosed, while being kept completely confidential, will be compared to another group of participants (who participated in either a chat or e-mail exchange). The individual who you interacted with in the exchange was a researcher and not a fellow participant in the study.

This study contained a couple elements of deception, or areas where the truth was not revealed, in an attempt to elicit the theorized findings. You were told that the study would be an exchange with a fellow participant, and not a researcher, so that you would not feel as if you were being directly observed, a factor that has been shown to alter participants' behaviour. If you participated in the e-mail interaction, you were told that your response would not be seen for one month when it is available to researchers immediately, and will not be replied to by another participant. This was done so in order for your perception to be that there would be a delay between your sending the e-mail and an individual's viewing of it. This was an attempt to elicit higher levels of self-disclosure, as it is theorized that the more time between an individual sending a message and another receiving it, the more likely that individual is to self-disclose.

Self-disclosure is a particularly interesting variable because, it is theorized, people do it in different levels across different communication platforms. As we move from in-person conversations, to chat, to e-mail interactions, the amount of self-disclosure people engage in should theoretically increase, which was tested in this study. A major reason we have to believe this is the case is that, as conversations move from "live" (chat) to "delayed" e-mail, people will be less reserved in revealing personal information since there is no one on the other end to immediately react to what was said. Those participating in a live chat interaction may suppress personal self-disclosure if they are concerned about the reaction of the person on the other end of the conversation, while those in an e-mail reaction may feel less inhibited, and ultimately reveal more personal information if they know the content will not be seen or responded to immediately. This specific comparison is what is being tested in the current study.

We would again like to reaffirm that all personal information that was disclosed in this study will be kept completely confidential, and our eventual analysis of the chat and e-mail transcripts will look at the level of perceived self disclosure, and not any of the specific content of the interactions.

If you have any questions please contact the primary researcher, Chris Edmondstone, at edmonst@uwindsor.ca, or his research supervisor, Dr. Ken Cramer, at kcramer@uwindsor.ca.

Some of the questions included were quite personal in nature. If you experienced any emotional or psychological distress in answering or thinking about these questions please feel free to contact the Student Counselling Centre at 519-253-3000 ext. 4616.

If you agree to have your data included in this study, please indicate so bellow, if you would like to have your information and responses withdrawn from the study, please indicate that below.

_____I agree to have my data included in this study.

_____ I would like to withdraw my data from this study.

VITA AUCTORIS

NAME: Christopher Edmondstone

PLACE OF BIRTH: St. Catharines, ON

YEAR OF BIRTH: 1990

EDUCATION: Denis Morris Catholic High School, 2008

                           University of Ottawa, B.A. (Hons), 2014, Ottawa, ON