



Sharing Only Parts of Me: Selective Categorical Self-Disclosure Across Internet Arenas

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Abstract: Research that has considered how individuals share their personal information in online compared to offline disclosures has often demonstrated heightened and accelerated disclosures in online interactions. Recent work has shown that this acceleration may be more likely to occur for the sharing of superficial self-information in initial general online interactions. This work was extended to explore the reported content of online disclosures in four different Internet arenas, social networking, instant messaging, general communication and online shopping. Using a self-disclosure scale amongst a sample of students to measure the revelation of information pertaining to individuals' beliefs, relationships, personal matters, interests and intimate feelings, the current findings showed that self-disclosure could be more categorical and goal-directed than can be accounted for by existing cue-impoverished and text-based explanations of online self-disclosure. Participants reported self-disclosing significantly less on online shopping sites than in the three communications type arenas. A consistent pattern of significant differences in the sharing of superficial (interests, relationships & personal matters) and more personal or intimate (intimate feelings & beliefs) information in instant messaging, social networking and general communication, along with an absence of significant intra-categorical disclosures is in line with hyperpersonal computer-mediated communication theory in that people selectively choose which information to self-disclose online, a proposal further supported by a significant decrease from relationship to personal matters information in instant messaging. These findings imply that categorical disclosures could be mapped onto the social cognitive self-memory-system model of autobiographical memory in line with the social penetration theory of self-disclosure. The findings along with non-significant differences in reported levels of overall self-disclosure across the Internet arenas are theoretically and empirically discussed, giving particular emphasis to considering future directions for research aiming to elucidate and explain the social cognitive processes associated with self-disclosure online.

Keywords: Online self-disclosure, categorical disclosure, social cognition, instant messaging, social networking, online shopping, self online

Introduction

How much personal information people reveal about themselves online has become the topic of much debate. Sharing information about the self with individual or multiple others is called *self-disclosure* (SDC) (Cozby, 1973; Wheelless, 1978; Wheelless & Grotz, 1976). It has been studied offline for all types of information, ranging from facts to the most intimate and private details about an individual's life (Chelune, 1979; Derlega & Berg,

1987) and has been shown to be a reciprocal and gradual exchange of information that influences the development and maintenance of human relationships (Altman & Taylor, 1973; Collins & Miller, 1994; Derlega, Metts, Petronio & Margulis, 1993; Keyes, 1998). With the Internet constantly developing and changing as a collection of communications tools, some researchers have suggested that it provides an alternative social context for forming, maintaining and even ending relationships (Yum & Hara, 2006). This continuing evolution of technology and inter-personal online behaviour requires that research rapidly expands, changes and evolves to explain SDC online. Some research has focused on considering the role that a multitude of factors play in eliciting online SDC. Joinson, Reips, Buchanan, and Schofield (2010) found, for example, that trust and privacy interact to influence non-disclosures on a web survey whilst others have demonstrated a role of personality traits (Krämer & Winter, 2008), relationship type and relationship ethnicity (Schwartz, Galliher, & Rodriguez, 2011) in online SDC. A lot of research has focused on demonstrating differences in online compared to offline disclosures, more specifically that individuals display accelerated SDC in online compared to offline interactions (Baker, 2005), not only sharing information online that they would not so quickly disclose in similar offline interactions (Bonebrake, 2002; Cooper & Sportolari, 1997), but also revealing intimate details online after only a few email exchanges (Parks & Floyd, 1996; Wallace, 1999). This accelerated online disclosure was initially attributed to a sense of anonymity (Baker, 2005) and a reduced fear of social rejection (Pennebaker, 1989) in online compared to offline communications.

One commonality of much of the existing literature considering SDC online is that most of the reported work has focused on a comparison of the *quantity* of information revealed in similar online and offline interactions, without giving consideration to either the *quality* or *types* of self-information disclosed. Counting the amount of words in a statement such as “... *bubbly and looking for long-term love*” in a SDC on an Internet dating site is, for example, very different to the count of the seven words “... *just browsing, not really looking for love*”. These are two qualitatively different statements, yet in previous research could have been counted as equal disclosures given the amount of words they use. An example of early conflicting research findings is offered in a comparison of Schoeman’s (1994) observation that anonymity enhanced the self-disclosure of intimate information to unknown others, whilst Cialdini (1993; see also Kelly & McKillop, 1996) found that participants were reluctant to share too much personal information online. Whereas the former were measuring the amount of revelations made to strangers, the latter were counting how much information was disclosed. These are two different research objectives that clearly demonstrate a concern of comparing existing findings of SDC online. This inconsistency in findings is further highlighted in a recent meta-analysis by Nguyen, Bin and Campbell (2012). Using a sampling technique they selected 20% of 1266 abstracts that they had initially identified as including words relevant to online SDC. Of the selected 20%, they identified 15 articles which included 24 comparisons of online to offline SDC using selection criteria that included SDC being considered as a dependent variable, the work being published in English and not duplicated elsewhere. Of these 15 publications, they identified five as showing heightened levels of online SDC (Antheunis, Valkenburg, & Peter, 2007; Coleman, Paternite & Sherman, 1999; Carballo-Diéguez, Miner, Dolezal, Rosser, & Jacoby, 2006; Joinson, 2001; Tidwell & Walther, 2002), with five further studies reporting no significant differences between online and offline SDC (Buote, Wood, & Pratt, 2009; Chiou & Wan, 2006; Kiesler, Zubrow, Moses, & Geller, 1985; Mallen, Day, & Green, 2003; Parks & Roberts, 1998), and further studies displaying higher levels of SDC offline than online (e.g., Coleman et al., 1999; Daft, Lengel, & Trevino, 1987; Dias, & Teixeira, 2008; Moon, 2000; Park, Jin, & Jin, 2011; Schouten, Valkenburg, & Peter, 2007). Whilst these considerations could suggest that online SDC may not be as different to offline disclosure as initially proposed by the literature, as pointed out by Nguyen et al. (2012), the studies reported in their meta-analysis did not consistently measure both breadth and depth of information shared, making it somewhat difficult to draw comparative conclusions from those studies.

Research has, however, demonstrated that in offline face-to-face (FtF) interactions individuals do initially exchange superficial information, progressing to more personal and intimate details over time (Rosen, Cheever & Cummings, 2008). Extending this line of reasoning to online behaviour, the accelerated SDC that has been demonstrated online has recently been shown to be likely to occur for superficial information rather than deeply personal self-information in initial general online communications (Attrill & Jalil, 2011). This finding is similar to work that has recorded adolescents’ shift away from displaying heightened levels of disclosures of personal and intimate information on social networking sites (SNSs) such as MySpace during the period of 2006–2009 (Patchin & Hinduja, 2010). Whilst this work highlights the ongoing challenge for theory and research to keep abreast of shifts in levels and types of SDC made by adolescents across many Internet arenas, it does not consider differences in the types of disclosures made by participants beyond their adolescent years. After all, in westernised countries, SNSs are no longer a playground reserved for a digital generation (e.g., Tapscott, 2008), but have evolved to provide a communications tool for old and young alike from diverse socioeconomic backgrounds with a multitude of usage goals. In order to understand the complexities of SDC online, research not only needs to assess different types of information disclosed across a multitude of Internet arenas, but also the *quality and quantity* of self-information shared in a way that helps elucidate and consolidate the diverse results observed thus far in the literature. It can then advance to aid our understanding of what role different

types of Internet arena might play in evoking different types of SDC. This suggestion is underpinned by additional observations of SDC being shown to be higher in some Internet arenas than others. Individuals have, for example, been shown to display heightened SDC in online support compared to online discussion forums (Barak & Gluck-Ofri, 2007). Once this initial interplay of online arenas and SDC is better understood, future research can not only turn to exploring and explaining the role that factors such as age, gender and socioeconomic status might play on arena-specific disclosures, but also to attempting to identify the cognitive factors that drive this interplay. Indeed, prior to attempting to unpick these more complex relationships of SDC online, research needs to be grounded in a theoretical framework from which predictions as to the intricacies of these relationships can be derived and tested.

Theoretical considerations

One of the hurdles to overcome in explaining online SDC is that of developing a theory from which clear predictions as to who will disclose what information in what arena, when and how, can be made. A number of theories have been used to explore online disclosures, of which many have been used to compare online to offline SDC. For instance, both reduced cues theory (Joinson, 2003; Suler, 2004) and hyperpersonal computer mediated communications theory (Tidwell & Walther, 2002; Walther, 1995, 1996) suggest a role of reduced social and individuating cues in eliciting heightened online compared to offline disclosures. This cue-absent mediated online SDC is explained by social information processing theory (SIP) as being due to exchanges being framed in written text in online communications (Walther & Burgoon, 1992). According to SIP, it is the depth of SDC that is increased in online communications with people developing affinity through increased numbers of CMC exchanges. Walther (2009) provides a comparison of SIP theory with the social identification/deindividuation (SIDE) model, according to which SDC occurs as a by-product of group identity and affinity. Whilst group identities might drive disclosures under some situations online, a lot of CMC takes place between two individuals who are not garnering for social or group identification, thus rendering context-specific group norms somewhat superfluous. Take, for instance, a flirty text-based instant messaging exchange between two individuals who believe that only they are privy to their correspondence. Any kind of social norms might go out the window in this dyadic exchange, but the same two people having a flirty exchange via status updates on a SNS such as Facebook might be very much governed by the norms of disclosure present in this exchange arena. According to the SIDE model, in this example, the norms of disclosure that could restrain SDC would likely be more absent in IM than in SNS. It is therefore important to consider whether SDC follows a universal process across different types of Internet site, governed by either present or absent social norms, or whether individuals selectively share self-information not based on social rules and regulations, but on the types and aims of interactions in which they are engaged.

Whilst these theories can explain early demonstrations of accelerated SDC online due to an absence of cues and text-based communications, they do not necessarily offer any indication of the *types or categories* of self-information that individuals might share on different types of Internet website, or indeed why people might selectively and voluntarily reveal information about themselves on one type of website but not another. Moreover, these theories struggle to accommodate recent technological developments that render text-based communication superfluous, such as cue-rich webcam exchanges. Although SIDE theory might suggest that SDC through webcams is increased in depth if not breadth due to the absence of norms. More important to the current research focus is, however, that whilst all three of these theories predict an accelerated disclosure of the breadth and/or depth of self-information in online compared to offline interactions, none of them make clear predictions as to the hierarchical and possibly categorical exchanges of those accelerated disclosures that could be expected according to Altman and Taylor's (1973) social penetration theory (SPT). Just as in FtF interactions, individuals might equally engage in a gradual and reciprocal exchange of self-information online as described by SPT. That is, depending upon the goals of their online communications, individuals may selectively choose both the type and amount of self-information that they wish to reveal to others. Walther's (1996) conceptualisation of the hyperpersonal model of computer-mediated communication (HCMC), by its very nature of assuming that people carefully and strategically edit their online presentations, suggests that people exert control and selectivity in what self-information they share online. This carefully managed and manipulated self-presentation is influenced by a number of factors including social desirability factors, the luxury of time and the ability to edit communications in a goal-directed manner (Walther, 2006). Individuals' online SDC to a specific other may thus be superficial at first, but over time and through prolonged interactions may take on an increasingly personal and intimate nature. Some evidence for this type of proposed selective categorical and hierarchical SDC comes from Tang and Wang (2012) who recently showed that bloggers' disclosures could be categorised according to nine topics (attitude, body, money, work, feelings, personal, interests, experiences and unclassified). Thus, rather than attempting to use a theory that evaluates online SDC by considering one specific aspect such as the context cues used to explain differences between online and offline SD, it may be more advantageous to explore the usefulness of a theory that considers the revelation of categorical hierarchical self-information in a possibly sequential and gradual exchange akin to the processes outlined by SPT.

One existing social cognitive theory that has recently been used to explore this notion is the *self-memory-system model* (SMS) (Conway & Pleydell-Pearce, 2000). This model is based on hierarchical categorical processing of self-referent information within an autobiographical knowledge base, and suggests that individuals have selective and conscious control over information drawn from categories within that memory base for revelation to others. Basic self-knowledge, such as one's interests, resides at a *lifetime periods* level which feeds into a *general events* level of self-information. This level contains slightly more detailed self-knowledge such as where an individual once had a first date. For more specific details about that date, the individual draws on self-information from the *event-specific knowledge* level of the SMS model. Here reside the most intimate feelings, beliefs and knowledge about particular events and relationships that make up the individual's social existence. This flow of revealing knowledge from one level of the SMS model to the next (lifetime periods → general events → event-specific knowledge) is akin to the progressive sharing of personal information characterised in SPT as the elemental foundation for building an intimate and close relationship (Altman & Taylor, 1973). On considering the extent to which social interactions now occur online (Yum & Hara, 2006), Attrill and Jalil (2011) proposed that the progressive and voluntary SDC typical of the SMS model and SPT could be used to explore SDC online. Adapting Magno's (2009) SDC scale to test five sub-categories of SDC relating to beliefs, relationships, personal matters, interests and intimate feelings online, they provided preliminary evidence to suggest that when engaging in general non-specified online communication, individuals are significantly more likely to reveal information about their personal matters and interests. These two types of basic self-information are stored at the lifetime periods level of the SMS model, with related less superficial information about those personal matters and interests, such as relationship information, being held at a more general events level. Detailed self-knowledge, such as intimate feelings and beliefs about those relationships, personal matters and interests are held at the highest and most detailed level of autobiographical memory, event-specific knowledge. As Nguyen et al. (2012) point out, no single theory that has hitherto been used to explain online SDC can singularly account for observations of differential types and amounts of self-information shared online. Nonetheless, Walther's (1996) HCMC model does suggest that people selectively manipulate their online impressions. In doing so, they choose which information to share. According to the SMS model, this selectivity would be guided in offline exchanges by the selective retrieval from hierarchically organised categories of self-information. It therefore follows that if selective SDC occurs online according to HCMC, and if the processes of SDC online are akin to the gradual revelations associated with SPT, as well as that gradual selective sharing being categorical as implied by the SMS model of autobiographical memory, then selective categorical disclosures could be expected to occur online. More specifically, given Walther's suggestion of online exchanges being selective due to their goal-directed nature, choice of Internet arena upon which SDC occurs may be made by the discloser based on their goals or aims of communications. Differences in categorical disclosures could therefore be expected to emerge for different types of Internet sites.

Applying a social cognitive categorical approach such as that offered by the SMS model thus not only offers a novel way of making predictions about types of SDC that could be expected to emerge online in a way prescribed by SPT, but also enables hypotheses to be derived as to differences that could be expected in SDC according to the type of Internet arena used. Furthermore, it would enable a research focus that considers the Internet as a multi-arena tool that offers numerous ways in which people can communicate to form, maintain and end various types of relationships in much the same way as the offline world offers people different ways and social settings to meet their relationship needs. Offline SDC occurs across a variety of situations, from meeting in a pub, through a blind date or at a bus stop, to gradually getting to know a person with whom one shares an office. Not only might the intentions of disclosures in these situations be very different at the onset of a communication, but one of the largely neglected considerations of offline SDC is that it is not necessarily aimed at building romantic relationships. People might share self-information with others offline for a multitude of reasons, from building friendships to creating support networks. If offline SDC operates in different ways according to situations and aims, the question arises as to why we should expect SDC online to operate identically and at the same pace across all types of Internet arena regardless of online communications aims, not to mention the diverse activities that individuals can engage in online to build social relationships that have no synonymous offline equivalents.

Arena-specific disclosures

Based on initial observations of category specific SDC in general online communication, and demonstrations of variations in SDC according to Internet arena (Barak & Gluck-Ofri, 2007; Rosen, Cheever, Felt, & Cummings, 2008), the current study followed Attrill and Jalil's (2011) use of Magno's (2009) SDC scale to consider participants' self-reports of categorical disclosure across four Internet arenas, instant messaging (IM), social networking (SNS), online shopping (OS) and general communication (GC). This choice of arenas was based on the notion that the disclosure of different types of self-information could be voluntary or involuntary (Attrill, 2012) in different types of arena, and that these particular arenas would likely show evidence of selective and controlled SDC. If, for example, an individual is seeking to develop or maintain a personal relationship, they

might be more likely to reveal deeper personal information from their event-specific knowledge in a synchronous one-on-one IM scenario than in an asynchronous general communication. Indeed, they will likely have already progressed through some level of GC at the lifetime periods level of self-memory to reach this more personal level of IM communication. These types of disclosures can be considered to be of a voluntary nature. The individual is freely revealing information about themselves that they wish to share with (an)other person(s). In order to complete an online purchase, however, this information is superfluous and participants might be more inclined to reveal interest-related information in line with the type of purchase they are engaging in. Indeed, to engage in an online purchase, individuals *need* to share basic information about themselves such as their name and address in order to complete the purchase. This type of involuntary or need disclosure is typical of a number of online activities that require the sharing of some self-information if a goal is to be achieved. Differences in online SDC across different types of Internet arena do not end there. On considering the intended recipient of disclosures, for example, the four chosen Internet arenas for the current study could be perceived to evoke the sharing of different types of self-information based on who people think they are sharing their personal information with. Instant messaging generally occurs between two individuals whilst SNS disclosures can be aimed at a range of group or individual recipients. Disclosures to online shopping sites, on the other hand, do not have an intended recipient as such and self-information is often shared without consideration of who will be able to view that information within a retailer's or company's employee group. In order to lay some foundations that could aid our understanding of possibly hierarchical categorical online SDC, the current study focuses on the four chosen Internet arenas as an exploratory starting point for building an independent theory of online SDC. Whilst HCMC inherently suggests selectivity and goal-directedness in online SDC, this and most other available theories are unable to make predictions about the categorical disclosures that could be expected to emerge across different types of Internet sites according to the goals and aims of these interactions. Establishing that SDC is influenced by type of Internet site in which self-information is revealed, and moreover that this SDC may be of a categorical nature could thus either extend extant theories or work towards creating a novel theory from which future hypotheses can be derived as to the nature and mechanisms of selective goal-directed online SDC. On reviewing the available research to underpin the suggestion that online disclosures could be selectively categorical across different Internet arenas, many studies compare revelations about the self to either single or multiple others in a given arena. To the author's knowledge, no work has specifically compared both depth and breadth of categorical SDC *across* a number of different Internet arenas as will be the case in the current study. The need for this empirical exploration becomes even more apparent on considering the limited available research that has specifically focused on each of the following types of Internet site:

Online shopping

Very little work has directly assessed what types of self-information individuals readily reveal on online shopping sites, with one notable exception being Gupta, Iyer and Weisskirch's (2010) observation that individuals selectively chose what personal information to reveal to online retailers. In their comparison of Indian and North American consumers, Gupta and colleagues found that the former were likely to reveal a range of information to online retailers, including details from their medical history, that North Americans reported being less likely to share. There is thus some limited evidence to suggest that individuals could be selective in the categorical self-information that they are willing to share with an online retailer.

Instant messaging

Some work has suggested that people display increased levels of disclosure when using an IM service compared to offline interactions (e.g., Leung, 2002), with further research showing that the tendency to share intimate information in IM online positively affected adolescents' existing offline friendships (Valkenburg, 2009). There is a tendency for much of the empirical work carried out in relation to IM to consider SDC as an independent or mediating factor, rather than assessing direct SDC as a dependent variable within an IM exchange. One study is, however, reported by Schouten et al. (2007) that showed online SDC to be influenced by participants' perceived disinhibition as mediated by perceptions of the relevance of reduced cues and controllability in IM, thereby demonstrating that disclosures are not uniformly accelerated in IM, but could fluctuate and are possibly selectively regulated.

Social networking sites

Whilst a number of studies have considered disclosures on SNSs, it again becomes apparent that few studies focus on SDC as a dependent variable. Two noteworthy studies that do however suggest that SNS disclosures could be of a selective and categorical nature are those of Gross and Acquisti (2005), and Nosko, Wood, and Molema (2010). Whilst Gross and Acquisti found that Carnegie Mellon University students were most likely to reveal basic demographic material rather than more personal or sensitive information on the SNS Facebook, Nosko and colleagues found that participants chose to reveal only 25% of the information that they could have shared on a SNS. They also observed that participants who were actively seeking a relationship revealed more

highly sensitive and potentially stigmatizing information than other participants, thus demonstrating not only a selective but also a goal-directed feature to disclosures within SNSs.

Current study and hypotheses

Given the theoretical considerations of a selective categorical type of disclosure versus a cue-absent and text-based accelerated SDC, along with the observation that empirical assessment of SDC as a dependent variable across diverse Internet arenas is scarce, it appears intuitive to provide an initial consideration of a) whether reported levels of SDC do indeed fluctuate across different types of Internet arenas, and b) whether categorical SDC can be demonstrated within the different types of Internet sites. Based on HCMC theory, it could be expected that individuals do report selective SDC according to the different goals that might be associated with different types of Internet communications arenas. The current study thus provides an exploration of online SDC, but unlike previous research it focuses on considering SDC from a social cognitive perspective in that it gauges categorical and possibly progressive SDC across different types of Internet arena. As it offers a starting point for this unique consideration, it gauges participants' reported levels of SDC across the four types of Internet arena for the five sub-categories of self-information (beliefs, relationships, personal matters, interests and intimate feelings) included in the Magno (2009) self-disclosure scale. Based on the information contained within each of these categories, these can be considered to reflect progressively more intimate and personal information. This study thus enables the hypothesis to be tested that participants should report revealing the least amount of information about themselves in online shopping than other Internet arenas. Offering a baseline of minimum online SDC due to the limitations of the type of self-information that is usually required to complete online purchases, participants should report the highest level of online SDC within OS sites for superficial types of information, that is, information from either their lifetime periods or general events levels of self-information (personal matters, interests and relationships).

A further prediction pertains to the amount of information reportedly shared across the remaining three types of arena. General communication, SNS and IM type communications can be ordered in a way that suggests the least to the most amount of involvement with potential disclosure recipients. If the goal of online communications is, for example, one of building or maintaining relationships, IM or SNSs provide more likely arenas for interpersonal relationship disclosures than does GC. Indeed, in order to advance to the level of IM communications, individuals have likely progressed from GC to IM, possibly via SNSs. Higher levels of overall SDC are therefore expected to be reported for IM than for SNSs, with the least amount of reported overall SDC for GC. If, however, heightened online disclosures result from a cue-absent Internet environment as proposed by both reduced cues theory (Joinson, 2003; Suler, 2004) and hyperpersonal communications theory (Tidewell & Walther, 2002; Walther, 1995, 1996) due to the framing of exchanges in written communications (Walther & Burgoon, 1992), a different pattern of online SDC could be expected to occur across these three arenas. If participants consider GC to reflect mainly email communications, this asynchronous medium enables the careful crafting and consideration of text-based exchanges, which could suggest that overall levels of SDC should be highest for GC, followed by text-based IM type sites. Instant messaging is, however, nowadays often rich in emoticons and other compensatory mechanisms that have evolved to supplement cue-absent communications. SNSs also offer a range of cue-compensatory tools that, whilst not the same as offline social and individuating cues, do offer some cues to ongoing communications within the sites, such as pictures and videos that are now frequently posted to SNSs. If online SDC becomes accelerated due to text-based, cue-absent or impoverished communications, the reverse pattern of overall SDC should emerge with increased cues resulting in the least amount of SDC. GC should therefore evoke the most reported overall SDC, followed by IM and the least amount of reported SDC on SNSs. A SIDE model approach would predict a further different pattern of sharing, namely of SDC followed by GC and lastly SNSs disclosures. If SDC is guided by the social norms that are either present or absent on a site, then IM could be expected to achieve the highest level of overall SDC since this is the arena where the least amount of social norms are likely to be present. GC interactions could, however, be expected to evoke higher levels of SDC than SNSs since the latter is synonymous with the public sharing of self-information that is governed by the presence of social norms. In terms of the types of information that are most likely to be shared *across* the Internet arenas, given that IM type sites offer the most intimate and spontaneous, or synchronous, level of personal communication between two individuals, a categorical approach to online SDC would predict that participants report being more likely to share their event-specific knowledge (beliefs & intimate feelings) here than on the other types of websites.

The final prediction derived from the categorical nature of the SMS model is that if online disclosure is of a superficial nature as proposed by Attrill and Jalil (2011), then regardless of Internet arena, participants should report being least likely to disclose information from their event-specific knowledge (i.e., beliefs and intimate feelings) *within* the GC, SNS and IM arenas, and most likely to report the sharing of information relating to their personal matters, interests and relationships. No intra-category differences would however be expected to

emerge. Such an observation would offer further support to the notion that individuals are not necessarily splurging deep and meaningful personal information uniformly online, but are selectively sharing increased amounts of shallow non-intimate material with online communications partners, and would offer some preliminary evidence for a social cognitive categorical approach to online SDC.

Methods

Participants

Eleven males and 43 females aged 18 to 23 years ($M = 20$, $SD = 11$ months) were recruited via a Research Participation Scheme at De Montfort University, Leicester in return for course credit. A call for participants was posted to an internal website used solely for recruitment to all research projects within the Division of Psychology at the university. Other than being aged 18+ years, an undergraduate student and engaged in using the four Internet arenas of interest, no other selection criteria were employed. The current data set reflects a 100% positive response rate to all of these criteria and all participants' data sets are included in the analyses.

Design

The research utilised a within-groups self report style questionnaire to measure the self-disclosure for five types of personal information (beliefs, relationships, personal matters, interests and intimate feelings) across four Internet arenas (instant messaging, social networking, online shopping and general online communication) with the measure of SDC thus constituting the dependent variable in this study.

Materials

All participants were given an information sheet that outlined the study and gave instructions for completing the questionnaire. It also recorded their sex and age as well as confirming they were a student at time of completion and that they used the Internet. Magno's (2009) self-disclosure scale was developed to gauge clients' self-disclosures in general conversation for five types of self-relevant information, beliefs (11 statements), relationships (13 statements), personal matters (13 statements), interests (10 statements) and intimate feelings (13 statements). It has previously been shown to have a reliability score of 0.91 (Magno, 2009) and was adapted for assessing Internet communications by Attrill and Jalil (2011; see Appendix). In the current study, participants rated each of the 60 statements on a five-point scale ranging from 1 (*never*) to 5 (*always*) for their online communications via each type of site: instant messaging, social networking, online shopping and general communication. In order to aid participants' understanding of what the researcher considered these arenas to be, they were advised that "general communication" covered online communications in any Internet arena that they felt was not covered by the other three categories. Whilst no specific type of Internet arena was prescribed for this category, a verbal example was given to participants of thinking about the asynchronous type of communication most often associated with email. Types of communication that participants had in mind when completing this part of the study were not recorded. Instant messaging was explained as a private one-on-one communication with another individual. Self-disclosure on a social networking site was considered to be any sharing of self-information with others, and the disclosure of personal information in online shopping settings was counted as any information that needed revelation in order to complete an online purchase. These delineations were verbally outlined to participants upon collection of the questionnaire to be completed. Mean scores were derived for each type of self-information reportedly shared for each of the four Internet arenas, with higher scores indicating increased levels of SDC.

Procedure

All participants were made aware that completing the questionnaire signified their informed consent for their data to be included in the study. They were given a hard copy of the questionnaire which they were asked to complete individually and anonymously at a time convenient to them, and to return it within two weeks. It was emphasised to all participants that there were no correct or incorrect answers, that their responses would be treated with the strictest of confidence, and that they should thus try to be as open and honest in their answers as possible. Upon completion and return of the questionnaire, all participants were given a verbal debrief as to the main purposes of the study, prior to being given the opportunity to ask questions and subsequently being thanked for their participation.

Results

Overall self-disclosure across Internet arenas

The overall mean scores for each type of SDC (beliefs, relationships, personal matters, interests and intimate feelings) across Internet arenas (instant messaging, social networking, online shopping, general communication) were calculated from each participant’s mean scores and are shown in Table 1. A two-way ANOVA revealed a significant interaction of SDC x Internet arena, $F(12, 636) = 8.46, p < .001$, with a small effect size, $\eta_p^2 = .26$ and observed power of 1.0, thus suggesting that individuals reported revealing different sub-types of self-information according to Internet arena. Significant main effects of type of self-disclosure, $F(4, 212) = 38.73, p < .001$, and of Internet arena, $F(3, 159) = 43.52, p < .001$, further supported this notion, with both effects displaying medium effect sizes (SDC $\eta_p^2 = .41$ and Internet arena $\eta_p^2 = .46$) and observed power scores of 1.0.

Table 1.
Mean Levels of Self-Disclosure as a Function of Internet Arena

Internet arena	N	M	SD
Instant messaging			
Beliefs	54	2.24	0.75
Relationships	54	2.77	0.87
Personal matters	54	2.58	0.73
Interests	54	2.76	0.81
Intimate feelings	54	2.27	0.72
Total SDC	54	12.62	3.59
Social networking			
Beliefs	54	2.19	0.73
Relationships	54	2.67	0.93
Personal matters	54	2.55	0.74
Interests	54	2.74	0.82
Intimate feelings	54	2.23	0.73
Total SDC	54	12.38	3.64
General communication			
Beliefs	54	2.05	0.93
Relationships	54	2.45	1.14
Personal matters	54	2.32	0.99
Interests	54	2.45	1.09
Intimate feelings	54	2.11	0.92
Total SDC	54	11.41	4.94
Online shopping			
Beliefs	54	1.29	0.59
Relationships	54	1.30	0.64
Personal matters	54	1.32	0.56
Interests	54	1.50	0.81
Intimate feelings	54	1.24	0.50
Total SDC	54	6.67	3.00
Total reported self-disclosure across Internet arenas			
Beliefs	54	7.78	2.34
Relationships	54	9.20	2.53
Personal matters	54	8.79	2.16
Interests	54	9.47	2.52
Intimate feelings	54	7.84	2.24

Note. 1 = *never* to 5 = *always*. Higher scores indicate heightened disclosure.

Online shopping comparisons

On considering the overall levels of SDC across the four Internet arenas, the most information was reportedly shared in IM (total SDC = 12.62, SD = 3.59) followed by SNSs (total SDC = 12.38, SD = 3.64), GC (total SDC

= 11.41, *SD* = 4.94) and the least amount of self-information reportedly revealed in OS (total SDC = 6.67, *SD* = 3.00). In line with the first hypothesis, this pattern of means was shown using paired samples t-tests to indicate that participants reported revealing significantly less information about themselves on OS sites ($M = 6.67, SD = 3.00$) than in GC ($M = 11.41, SD = 4.94$), $t(53) = 6.81, p < .001, 95\% CI [3.34, 6.13]$, with a large effect size, $\eta^2 = .47$ (Cohen, 1988, p. 284–287). Reported SDC in OS was also significantly less than on SNSs ($M = 12.38, SD = 3.64$), $t(53) = 9.55, p < .001, 95\% CI [4.52, 6.92]$ with a large effect size, $\eta^2 = .63$, and in IM ($M = 12.62, SD = 3.59$), $t(53) = 10.76, p < .001, 95\% CI [4.84, 7.06]$ with a large effect size, $\eta^2 = .69$.

Self-disclosure across Internet arenas

The pattern of means for reported levels of overall SDC suggest support for a selective categorical explanation of online SDC, with overall reported SDC being highest for IM ($M = 12.62, SD = 3.59$), followed by SNSs ($M = 12.38, SD = 3.64$) and the least amount of self-information reportedly being shared in GC ($M = 11.41, SD = 4.94$), rather than for a cue-impoverished, text-based explanation which would have resulted in the reverse order of overall scores. Neither the difference between IM and SNSs ($MD = 0.24, t(53) = 0.56, p = .29, 95\% CI [-0.60, 1.07]$) nor between SNSs and GC ($MD = 0.97, t(53) = 1.44, p = .07, 95\% CI [-0.38, 2.34]$) was, however, shown to be significant. In order to test the hypothesis that participants reported being most likely to share their event-specific knowledge (beliefs & intimate feelings) in IM than in SNSs, GC, or OS, one-way ANOVAs using a Bonferroni corrected alpha level were employed to test the patterns of means for these two sub-types of self-information across the three Internet arenas. Information pertaining to intimate feelings showed a significant pattern of reported SDC across arenas, Wilks' Lambda = 31.89, $F(3, 159) = 40.17, p < .001$, with a large effect size, multivariate $\eta_p^2 = .65$ and observed power of 1.00. This effect appears to be due to the significant difference observed between IM ($M = 2.27, SD = .72$) and OS ($M = 1.24, SD = 0.50$), $MD = 1.03, SE = 0.10, p < .05, 95\% CI [0.72, 1.29], \eta_p^2 = .65, power = 1.00$. Reported levels of Intimate feeling-related information did not significantly differ between either IM ($M = 2.27, SD = 0.72$) and SNSs ($M = 2.23, SD = 0.73$), $MD = 0.02, SE = 0.07, 95\% CI [-0.19, 0.22]$, or between IM ($M = 2.27, SD = 0.72$) and GC ($M = 2.11, SD = 0.92$), $MD = 0.13, SE = 0.10, 95\% CI [-0.14, 0.41]$. Participants showed a significant difference in their pattern of the reported sharing of information relating to their beliefs across Internet arenas, Wilks' Lambda = .41, $F(3, 159) = 32.80, p < .001$, multivariate $\eta_p^2 = .60$, indicating a large effect size, and an observed power of 1.00. This significant difference again appeared to be due to higher levels of belief-related information reportedly being shared in IM ($M = 2.24, SD = 0.75$) than OS ($M = 1.29, SD = 0.59$), $MD = 0.95, SE = 0.11, p < .05, 95\% CI [0.65, 1.26], \eta_p^2 = .59, observed power 1.00$. The expected significant differences between IM ($M = 2.24, SD = 0.75$) and SNS ($M = 2.19, SD = 0.73$), $MD = 0.06, SE = 0.07, 95\% CI [-0.13, 0.24]$, and between IM ($M = 2.24, SD = 0.75$) and GC ($M = 2.05, SD = 0.93$), $MD = 0.19, SE = 0.11, 95\% CI [-0.11, 0.49]$ did not emerge. The overall levels of reported self-disclosure support the prediction of less self-information being reportedly shared on OS than any of the other types of Internet sites. Whilst the overall pattern of means and significant ANOVA analyses for consideration of belief and intimate feelings related material indicates support for a categorical rather than cue-absent approach to explaining SDC online, the differences appear to be largely due to the low levels of reported sharing of information on OS sites compared to other types of site.

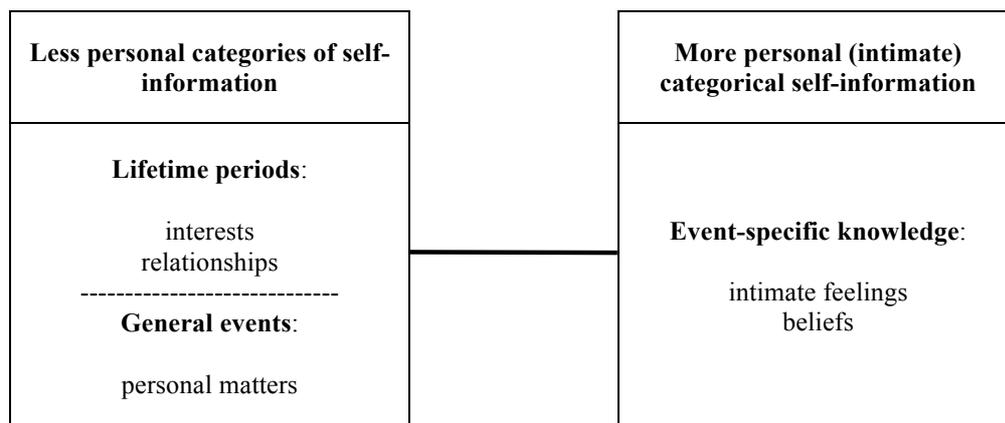


Figure 1. Differences in categorical sharing between superficial and personal (intimate) information.

Self-disclosure sub-types within Internet arenas

The pattern of observed means displayed in Table 1 suggests that participants reported categorically sharing self-information within each Internet arena in line with the SMS model of autobiographical memory. Across all four Internet arenas, the pattern of means implies that the types of self-information can be organised into two groups as displayed in Figure 1, one that contains the more superficial types of information (interests, relationships and

personal matters), and the other containing intimate feelings and beliefs. In order to test the final hypothesis of categorical and selective disclosure, namely that participants would report higher levels of sharing for superficial information (personal matters, interests & relationships) within each of the three SNSs, IM and GC type arenas, a series of one-way ANOVAs followed by pairwise comparisons using a Bonferroni corrected alpha was employed (see Table 2).

Table 2.
Pairwise Comparisons of Reported Sharing of Categorical Self-Disclosure Within Internet Arenas

Comparison	MD	SD	95% CI
Instant messaging			
Interests/intimate feelings	0.52*	0.07	0.30, 0.73
Interests/beliefs	0.52*	0.07	0.31, 0.73
Relationships/intimate feelings	0.52*	0.06	0.34, 0.70
Relationships/beliefs	0.53*	0.08	0.29, 0.76
Personal matters/intimate feelings	0.34*	0.04	0.22, 0.73
Personal matters/beliefs	0.34*	0.07	0.15, 0.54
Interests/relationships	0.01	0.06	0.15, 0.17
Interests/personal matters	0.17	0.07	0.38, 0.03
Personal matters/relationships	0.18*	0.06	0.15, 0.17
Intimate feelings/beliefs	0.00	0.07	-0.21, 0.21
Social networking sites			
Interests/intimate feelings	0.51*	0.08	0.29, 0.73
Interests/beliefs	0.55*	0.08	0.32, 0.79
Relationships/intimate feelings	0.44*	0.06	0.26, 0.62
Relationships/beliefs	0.49*	0.09	0.21, 0.77
Personal matters/intimate feelings	0.32*	0.04	0.21, 0.44
Personal matters/beliefs	0.37*	0.07	0.15, 0.59
Interests/relationships	0.07	0.07	-0.13, 0.26
Interests/personal matters	0.19	0.07	-0.02, 0.39
Personal matters/relationships	0.12	0.05	-0.28, 0.04
Intimate feelings/beliefs	0.04	0.08	-0.28, 0.19
General communication			
Interests/intimate feelings	0.34*	0.06	0.18, 0.51
Interests/beliefs	0.40*	0.07	0.19, 0.60
Relationships/intimate feelings	0.34*	0.06	0.16, 0.52
Relationships/beliefs	0.39*	0.07	0.18, 0.61
Personal matters/intimate feelings	0.21*	0.04	0.10, 0.31
Personal matters/beliefs	0.27*	0.05	0.11, 0.42
Interests/relationships	0.00	0.05	-0.14, 0.14
Interests/personal matters	0.13	0.05	-0.01, 0.28
Personal matters/relationships	0.13	0.05	0.02, 0.28
Intimate feelings/beliefs	0.06	0.05	0.09, 0.21
Online shopping			
Interests/intimate feelings	0.26*	0.06	0.08, 0.45
Interests/beliefs	0.21*	0.05	0.08, 0.35
Relationships/intimate feelings	0.06	0.04	-0.04, 0.17
Relationships/beliefs	0.01	0.03	-0.07, 0.10
Personal matters/intimate feelings	0.08*	0.03	0.00, 0.16
Personal matters/beliefs	0.03	0.03	-0.06, 0.12
Interests/relationships	0.20*	0.06	0.04, 0.36
Interests/personal matters	0.18*	0.06	0.00, 0.36
Personal matters/relationships	0.20*	0.06	0.03, 0.36
Intimate feelings/beliefs	0.05	0.03	0.15, 0.05

* $p < .05$ with Bonferroni adjustment for multiple comparisons.

Instant Messaging. Participants displayed a significant difference in their reports of sharing different types of self-information within IM, Wilks' Lambda = 32.54, $F(4, 212) = 32.05$, $p < .001$, multivariate $\eta_p^2 = .72$, observed power = 1.00. As shown in Table 2, participants reportedly shared significantly more information from the lifetime periods than the event specific knowledge categories of self-information, interests ($M = 2.76$, $SD = 0.81$) vs. intimate feelings ($M = 2.27$, $SD = 0.72$), $MD = 0.52$, $SE = 0.07$, 95% $CI [0.30, 0.73]$, $p < .001$, interests

vs. beliefs ($M = 2.24$, $SD = 0.75$), $MD = 0.52$, $SE = 0.07$, 95% CI [0.31, 0.73], $p < .001$, relationships ($M = 2.77$, $SD = 0.87$) vs. intimate feelings ($M = 2.27$, $SD = 0.72$), $MD = 0.52$, $SE = 0.06$, 95% CI [0.34, 0.70], $p < .001$, and relationships ($M = 2.77$, $SD = 0.87$) vs. beliefs ($M = 2.24$, $SD = 0.75$), $MD = 0.53$, $SE = 0.08$, 95% CI [0.29, 0.76], $p < .001$. They also reported sharing significantly more general events material than event specific knowledge, personal matters ($M = 2.58$, $SD = 0.73$) vs. intimate feelings ($M = 2.27$, $SD = 0.72$), $MD = 0.34$, $SE = 0.04$, 95% CI [0.22, 0.73], $p < .001$, and between personal matters ($M = 2.58$, $SD = 0.73$) and beliefs ($M = 2.24$, $SD = 0.75$), thus demonstrating a decline in reported SDC from the two more superficial categories of the lifetime periods and general events categories of self-information to event specific knowledge. Participants also reported a decline in the sharing of information from the lifetime periods category of relationships ($M = 2.77$, $SD = 0.87$) to the general events category of personal matters ($M = 2.58$, $SD = 0.73$), $MD = 0.18$, $SE = 0.06$, 95% CI [0.01, 0.36], $p < .05$. There were no significant intra-category differences in the sharing of interests ($M = 2.76$, $SD = 0.81$) and relationships ($M = 2.77$, $SD = 0.87$) information, $MD = 0.01$, $SE = 0.06$, 95% CI [0.15, 0.16] within the lifetime periods level, or between intimate feelings ($M = 2.27$, $SD = 0.72$) and beliefs ($M = 2.24$, $SD = 0.75$), $MD = 0.03$, $SE = 0.07$, 95% CI [-0.21, 0.21] in the event specific category of autobiographical memory.

Social Networking Sites. A significant pattern of reported SDC also emerged within SNSs, Wilks' Lambda = 25.69, $F(4, 212) = 25.24$, $p < .001$, multivariate $\eta_p^2 = .67$, observed power = 1.00. Participants reported revealing significantly more from the lifetime periods level of information than from their event specific knowledge, interests ($M = 2.74$, $SD = 0.82$) vs. intimate feelings ($M = 2.23$, $SD = 0.73$), $MD = 0.51$, $SE = 0.08$, 95% CI [0.29, 0.73], $p < .001$, interests ($M = 2.74$, $SD = 0.82$) vs. beliefs ($M = 2.19$, $SD = 0.73$), $MD = 0.55$, $SE = 0.08$, 95% CI [0.32, 0.79], $p < .001$, relationships ($M = 2.67$, $SD = 0.93$) vs. intimate feelings ($M = 2.23$, $SD = 0.73$), $MD = 0.44$, $SE = 0.06$, 95% CI [0.26, 0.62], $p < .001$, and relationships ($M = 2.67$, $SD = 0.93$) vs. beliefs ($M = 2.19$, $SD = 0.73$), $MD = 0.49$, $SE = 0.09$, 95% CI [0.21, 0.77], $p < .001$. They also reported revealing significantly more self-information from their general events memory than from event specific knowledge, personal matters ($M = 2.55$, $SD = 0.74$) vs. intimate feelings ($M = 2.23$, $SD = 0.73$), $MD = 0.32$, $SE = 0.04$, 95% CI [0.21, 0.44], $p < .001$, personal matters ($M = 2.55$, $SD = 0.74$) vs. beliefs ($M = 2.19$, $SD = 0.73$), $MD = 0.37$, $SE = 0.07$, 95% CI [0.15, 0.59], $p < .001$. This is in line with the reported pattern of sharing more superficial material in IM, as is the observation that there were no significant differences within either the lifetime periods level, interests ($M = 2.74$, $SD = 0.82$) vs. relationships ($M = 2.67$, $SD = 0.93$), $MD = 0.07$, $SE = 0.07$, 95% CI [-0.13, 0.26], or within the event specific knowledge category, intimate feelings ($M = 2.23$, $SD = 0.73$) vs. beliefs ($M = 2.19$, $SD = 0.73$), $MD = 0.04$, $SE = 0.08$, 95% CI [-0.28, 0.19]. There was however no significant decrease from the lifetime periods to the general events level as was observed with IM disclosures, interests ($M = 2.74$, $SD = 0.82$) vs. personal matters ($M = 2.55$, $SD = 0.74$), $MD = 0.19$, $SE = 0.07$, 95% CI [-0.02, 0.39], relationships ($M = 2.67$, $SD = 0.93$) vs. personal matters ($M = 2.55$, $SD = 0.74$), $MD = 0.12$, $SE = 0.05$, 95% CI [-0.28, 0.04].

General Communication. A significant one way ANOVA, Wilks' Lambda = 14.24, $F(4, 212) = 21.89$, $p < .001$, multivariate $\eta_p^2 = .53$, observed power = 1.00, revealed a significant difference in the types of self-information reportedly shared in GC. As with IM and SNSs, there were significant decreases from the amount of lifetime periods information shared to event specific knowledge, interests ($M = 2.45$, $SD = 1.09$) vs. intimate feelings ($M = 2.11$, $SD = 0.92$), $MD = 0.34$, $SE = 0.06$, 95% CI [0.18, 0.51], $p < .001$, interests ($M = 2.45$, $SD = 1.09$) vs. beliefs ($M = 2.05$, $SD = 0.93$), $MD = 0.40$, $SE = 0.07$, 95% CI [0.19, 0.60], $p < .001$, relationships ($M = 2.45$, $SD = 1.14$) vs. intimate feelings ($M = 2.11$, $SD = 0.92$), $MD = 0.34$, $SE = 0.06$, 95% CI [0.16, 0.52], $p < .001$ and between relationships ($M = 2.45$, $SD = 1.14$) and beliefs ($M = 2.05$, $SD = 0.93$), $MD = 0.39$, $SE = 0.07$, 95% CI [0.18, 0.61], $p < .001$. There were also significant decreases from general events to event specific information, personal matters ($M = 2.32$, $SD = 0.99$) vs. intimate feelings ($M = 2.11$, $SD = 0.92$), $MD = 0.21$, $SE = 0.04$, 95% CI [0.10, 0.31], $p < .001$, and between personal matters ($M = 2.32$, $SD = 0.99$) and beliefs ($M = 2.05$, $SD = 0.93$), $MD = 0.27$, $SE = 0.05$, 95% CI [0.11, 0.42], $p < .001$. No significant intra-category differences emerged within either the lifetime periods category, interests ($M = 2.45$, $SD = 1.09$) vs. relationships ($M = 2.45$, $SD = 1.14$), $MD = 0.00$, $SE = 0.05$, 95% CI [-0.14, 0.14], or within event specific knowledge, intimate feelings ($M = 2.11$, $SD = 0.92$) vs. beliefs ($M = 2.05$, $SD = 0.93$), $MD = 0.06$, $SE = 0.05$, 95% CI [0.09, 0.21]. There was also no significant decrease from lifetime periods to general events self-knowledge, interests ($M = 2.45$, $SD = 1.09$) vs. personal matters ($M = 2.32$, $SD = 0.99$), $MD = 0.13$, $SE = 0.05$, 95% CI [-0.01, 0.28], or between relationships ($M = 2.45$, $SD = 1.14$) and personal matters ($M = 2.32$, $SD = 0.99$), $MD = 0.13$, $SE = 0.05$, 95% CI [0.09, 0.21].

To summarise the within-arena findings for the three communications-type sites (IM, SNSs & GC), significant decreases in the reported sharing of personal matters to intimate feelings confirmed a pattern of selective categorical sharing of information within the different Internet arenas. That is, significant differences occurred in the reported sharing of lifetime periods (personal matters & interests) and general events knowledge (relationships) to the reported sharing of event-specific knowledge (beliefs & intimate feelings) with participants being least likely to reportedly share the highly personal event-specific knowledge regardless of Internet arena. Moreover, there was no evidence of significant differences for the reported sharing of different types of self-

information within either the lifetime periods and general events levels of autobiographical memory or within event specific knowledge for these three Internet arenas.

Online Shopping. Inter- and intra-categorical SDC was also considered for OS in order to test the second hypothesis that participants would have the highest level of reported SDC in OS sites for superficial self-information. There was a significant effect of type of information reportedly shared within online shopping arenas, Wilks' Lambda = 7.52, $F(4, 212) = 10.41$, $p < .001$, multivariate $\eta_p^2 = .38$, observed power = 1.00. The pattern of reported inter- and intra-group disclosures was however slightly different for this online arena to the other three types of website. Whilst participants reported a significant decrease from the lifetime periods to event specific knowledge between interests ($M = 1.50$, $SD = 0.81$) and intimate feelings ($M = 1.24$, $SD = 0.50$), $MD = 0.26$, $SE = 0.06$, 95% CI [0.08, 0.45], $p < .001$, and from interests ($M = 1.50$, $SD = 0.81$) to beliefs ($M = 1.29$, $SD = 0.59$), $MD = 0.21$, $SE = 0.05$, 95% CI [0.08, 0.35], $p < .001$, there were no significant decreases from relationships ($M = 1.30$, $SD = 0.64$) to intimate feelings ($M = 1.24$, $SD = 0.50$), $MD = 0.06$, $SE = 0.04$, 95% CI [-0.04, 0.17], or from relationships ($M = 1.30$, $SD = 0.64$) to beliefs ($M = 1.29$, $SD = 0.59$), $MD = 0.01$, $SE = 0.03$, 95% CI [-0.07, 0.10]. These non-significant findings fit with the notion of OS being a baseline level of online SDC in that participants simply do not need to reveal anything other than basic information in order to complete an online purchase. Participants did not report sharing significantly more personal matters ($M = 1.32$, $SD = 0.56$) than belief ($M = 1.29$, $SD = 0.59$) information, $MD = 0.03$, $SE = 0.03$, 95% CI [-0.06, 0.12], but did report sharing significantly more personal matters ($M = 1.32$, $SD = 0.56$) than intimate feelings ($M = 1.24$, $SD = 0.50$), $MD = 0.08$, $SE = 0.03$, 95% CI [0.00, 0.16], $p < .001$. Whilst there was no significant difference in intra-category disclosures of intimate feelings ($M = 1.24$, $SD = 0.50$) and beliefs ($M = 1.29$, $SD = 0.59$), $MD = 0.05$, $SE = 0.03$, 95% CI [0.05, 0.15], there were significant differences between both interests ($M = 1.50$, $SD = 0.81$) and relationships ($M = 1.30$, $SD = 0.64$), $MD = 0.20$, $SE = 0.06$, 95% CI [0.04, 0.36], $p < .001$, and between interests ($M = 1.50$, $SD = 0.81$) and personal matters ($M = 1.32$, $SD = 0.56$), $MD = 0.18$, $SE = 0.06$, 95% CI [0.00, 0.36], $p < .001$. Given that interest-related material was reportedly shared significantly more than any other type of information within OS sites, it not only further suggests that participants report sharing the information most relevant to achieving the goal in this instance, namely of completing an online purchase, but it also appears feasible that this would be the only type of information that they need to share on these types of site, thus setting this involuntary type of disclosure apart for the voluntarily shared information on communications type websites.

Discussion

The current findings provide further support for Attrill and Jalil's (2011) demonstration of individuals having conscious and selective control over their reported online self-disclosures. In line with the proposal that OS sites likely provide a baseline measure of a minimum involuntary level of SDC, participants reported sharing significantly less about themselves on this than any of the other types of website. They also reported being significantly more likely to share interest-related information from their lifetime periods level than event-specific knowledge (intimate feelings, beliefs) to online retailers. Indeed, OS sites also provided the only arena where significant intra-category differences emerged between types of self-information, with participants reporting being most likely to share interest-related material over both personal matters and relationship-related materials. Whilst these findings are not wholly in line with the prediction that participants would be most likely to share superficial levels of information on OS sites, they do highlight a possibly goal-directed nature to sharing only that information that is relevant to making online purchases. That is, from the five categories of information considered in the current study, interest-related material likely provided the only self-material that would be relevant to completing an online purchase. This notion also fits with the proposal made by Attrill (2012) that not all sharing of personal information online is voluntary. Rather, to engage in an online purchase, the disclosure of specific information is necessary to complete a retail transaction. This basic information is also the material that is generally required in order to create an account or profile on the additional three communications type sites considered in the current study. It therefore seems feasible that participants may reveal this same basic information on all sites, but the involuntary nature of disclosure necessitates only that material to be revealed on an OS site. The same involuntary disclosures may initially ensue on the remaining three types of site, but additional information may subsequently be freely and selectively disclosed, thus producing the heightened levels of reported SDC observed for the remaining three Internet arenas. Future research may consider whether it is this 'above threshold' amount of SDC that reflects true voluntary online SDC. A further line of consideration for future work stems from Weltevreden and Boschma's (2008) demonstration of a role of firm owner and customer characteristics as well as geographical location of offline outlets on web site, domain name and website type (informational or retail) in adoption and maintenance of online retail organisations. Further research could reveal that there is a complex interplay between the types of OS sites available, their familiarity, functionality, perceived characteristics and online shopper disclosures. It might, for example, be the case that if consumers are familiar with, and trust, a large offline brand, that they are more willing to disclose information to their online equivalent.

Theoretical considerations

The current study offers some evidence for a selective categorical approach to online SDC as evidenced through support for the hypothesis that participants would be least likely to disclose information from their event-specific knowledge within each of the communication type websites. Not only did participants consistently report sharing significantly higher levels of interests, relationships and personal matter related material than either intimate feelings or beliefs within each of the SNS, IM and GC sites, but they also reported no significant intra-category differences for their lifetime periods, general events or event-specific knowledge in these Internet arenas. Additionally, participants also reported sharing significantly more relationship than personal matters material in IM, thus demonstrating a categorical decrease from their lifetime periods to general events within IM. This could suggest that participants are more selective in what information they share via an IM communication than in either SNS communication or GC. The pattern of results across these three types of Internet site also implies that people do not generally splurge all types of self-information aimlessly and without selectivity in any Internet arena in which they are communicating, rather these findings along with the OS pattern of results suggest a more selective and goal directed sharing of personal information on the Internet and lend credence to Attrill's (2012) suggestion that any complete theory of online SDC will need to distinguish between voluntary and involuntary self-disclosure. These findings do, in part, support Walther's (1995, 1996) hyperpersonal model in that participants showed selective sharing of self-information depending on Internet site that could be linked to their goals and aims. Of course, these goals were not assessed in the current study, and neither were the intended recipients of online disclosures.

Recipient status in relation to the discloser, familiarity and gender have all been shown to influence the editing process that participants engage in when communicating online (Walther, 2006). People often have suspicions about others' online self-presentations which could influence their own SDC, a process particularly influenced if individuals who meet online aim to take their encounters offline (Ellison, Heino, & Gibbs, 2006), and one that could be affected by warranting principles. According to Walther and Parks (2002), individuals' warranting principles cause them to lend more credence to certain aspects of information shared with them. Warranting is highest in online exchanges when a perceiver or reader of online communications perceives those exchanges to be less subject to the sharer's manipulation. Walther, Van Der Heide, Hamel, and Shulman (2009) tested warranting theory by considering self- and other-generated statements on mock-up Facebook profiles and found that other-generated comments were given more validity than self-generated items. The HCMC model considers the role of online SDC recipients by suggesting that the absence of cues in online settings leads to communications recipients over-interpreting the cues that are available in text-based correspondences (Walther, 1996). This exaggerated interpretation not only leads to idealised impressions and judgements but also to stereotypical views of the sender's personal qualities given the absence of contradicting cues in CMC. This over-attribution effect of SDC recipients was considered by Jiang, Bazarova, and Hancock (2011a) for disclosures in FtF compared to a text-based IM exchange. SDC recipients demonstrated inflated attributional patterns for disclosures that contributed to hyperpersonal states. Moreover, they found that SDC recipients' perceptions of a sharer's disclosures could intensify intimacy in CMC with interpersonal attributions acting as a mediating variable between SDC and increased intimacy in CMC compared to FtF interactions. In a further study, Jiang et al. (2011a) found further evidence for a *perception-behaviour intensification effect*. That is, participants reciprocated disclosures that they perceived to be intimate with their own intimate disclosures. These findings, along with Reis and Shaver's (1988) observation that *partner responsiveness* enhances the dyadic interaction of interpersonal communications, suggests that self-disclosures online are a two-way process and as suggested by Jiang et al. (2011b), further work needs to explore the reciprocal and responsive relationship between a sender's disclosures and recipients' attributions thereof in evoking further disclosures. Additionally, any complete formulation of online SDC theory will need to take stock of this interactive reciprocal process. Such formulations might look to work aimed at explaining lying and deceitful online exchanges that take both reciprocity and the presence of co-communicators into account in a way that might help elucidate depth, breadth and categories of disclosures expected on different types of online site.

Work on individuals' disclosures in online communication cannot and possibly should not always be perceived to be honest and truthful exchanges in which both discloser(s) and recipient(s) are sincere, open and frank with one another. Recent work has suggested that a combination of both psychological and social factors influence why people misrepresent themselves in online interactions (DeAndrea, Tom Tong, Liang, Levine, & Walther, 2012) with other work showing that not only do individuals lie in their online communications, but that they do so even when there is a possibility of physically meeting those to whom they have lied online (e.g., Toma, Hancock, & Ellison, 2008). One model that attempts to explain how different levels of deceitfulness occur online is Hancock, Thom-Santelli, & Ritchie's (2004) *feature-based model of electronic communications*, according to which the synchronicity, degree to which an interaction is recordable and the distributed nature (i.e., not co-present) required to use a communications medium influences whether lying occurs in that arena. In a diary study in which they had participants record all of their lies and social interactions over a week, Hancock et al.

(2004) found that participants reported lying less in email than in FtF interactions, with no significant difference being observed between IM and FtF communications. Further support for their model comes from their observation that people were more likely to lie in telephone than in FtF interactions. Relating this model to the current findings is very speculative given that neither telephone nor FtF interactions were included in this study. Nonetheless, it could offer an interpretation as to the underlying influences of the pattern of results observed for the communications type arenas in this work. The most recordable medium used was IM, assuming that participants choose to keep a history of their IM chats, followed by SNSs and GC. IM is also the most synchronous and least distributed of the three types of communication site used followed by SNSs and lastly GC. The pattern of overall reported levels of SDC is in line with a feature-based approach with highest levels or reported SDC being observed for IM, followed by SNSs and lastly GC. Whilst this pattern was non-significant and the study did not aim to test the feature-based model, a role of the features of the mode of communication being used cannot be ruled out as an explanation for the current findings. One arena in which a feature-based model can however unlikely account for SDC is in OS. As previously noted, there is a necessity to share basic information in OS sites without which a transaction would fail to be completed. That is not to say that people don't lie or share deceitful information on these types of site as well. Ott, Cardie and Hancock (2012) recently explored popular review communities (Expedia, Hotels.com, Orbitz, Priceline, TripAdvisor, & Yelp) and found that on these sites which rely on consumers' reviews as indicating product quality, if a site has low posting requirements with high exposure it attracts a higher level of deception than sites which have higher signal costs (high posting requirements and low exposure). They further demonstrated that levels of deceptive reviews could be manipulated by eliminating reviews by first or second time posters. This would suggest that in OS sites, not only do people manipulate the information shared, but there is also a role of a type of reciprocally evoked SDC. To elaborate, reviews left on such sites constitute individual opinion, which could also be perceived to represent a category of self-information being disclosed by the reviewer. If a person leaves a spam or negative review, it might encourage another reviewer to do the same, a type of evoked SDC. If a second reviewer sees that spam review, they might feel inclined to do the same. If the first review is eliminated, the second reviewer might not feel inclined to leave a spam review, that is, they might refrain from sharing their personal, and possibly unfounded, opinion on the site. Of course, this is conjecture based on findings that are only remotely relevant to the current study design. It does, however, highlight that disclosures are not always honest and truthful, nor indeed is SDC as straightforward a process as sharing personal information in response to others or simply in order to evoke a response. Rather, this digression to consider lying and deceitful behaviour in online communication shows that self-disclosures might indeed ensue with ulterior motives, goals and aims that have little in common with impression management or self-presentation manipulation in some arenas on the Internet. Furthermore, it highlights a possible need for future work to define exactly what should be labelled as self-disclosure given that in its original forms related to offline behaviour SDC was considered the revealing of personal information (e.g., Derlega et al.), rather than of opinions or attitudes as is the case with work on lying and deceitful reviews. Clearly, there are a lot of processes to consider in trying to disentangle the intricacies that lead to self-information being shared online, be that information factual, informational, self-descriptive, opinionated, feelings or thoughts.

Somewhat more importantly, the pattern of data reported here does provide possibly the first demonstration of reported selective *categorical* SDC across diverse Internet arenas that can be mapped onto the SMS model of autobiographical memory in a pattern of disclosure akin to that predicted by the social penetration model (Altman & Taylor, 1973) for offline SDC. The pattern of means observed for overall levels of reported SDC across the Internet arenas further supports these proposals. In line with a categorical processing approach to online SDC, participants reported revealing significantly less self-information on OS sites than on any of the other sites. Further predictions from a categorical approach included that participants would show a clear pattern of SDC, with the highest levels of information being reportedly revealed on IM followed by SNSs and lastly GC. The descriptive statistics for overall levels of reported SDC did indeed display this linear decrease from IM to SNSs to GC. Unfortunately, the differences between the means were not shown to be significant. However, that the data revealed this and not the reverse pattern of results does suggest that future research pursue comparisons of a selective categorical explanation over a cue-impoverished text-based approach to online SDC. Further evidence to suggest categorical SDC comes from the significant differences observed for the sharing of event-specific knowledge across the four Internet arenas. Although the significant ANOVA results for both intimate feelings and belief-related information across the four Internet arenas appear to be largely driven by differences between OS and the other Internet sites, the pattern of means for both types of event-specific knowledge suggest that the linear decrease of reported SDC for these two categories of information from IM to SNS to GC cannot be solely due to cue-impoverished online communications. Although the differences between these means were not significant, if a text-based explanation of online SDC is to be upheld, participants should have reported the highest levels of SDC in the text-rich GC and lowest levels in IM. Given that levels of SNSs SDC were reportedly higher than GC SDC, interpreting the current findings using a SIDE model approach is also somewhat problematic. That said, the current study although strongly implying email to constitute GC did not explicitly test email communications, nor did it specify the types of communication to be focused on in SNS communications.

Social networking sites might contain the most cues with exchanges rich in supplementary cues such as pictures or videos posted to a discloser's wall, just as IM communications may now be rich in cue-compensatory features such as emoticons. Whilst the current study did not specify that participants should focus only on their text-based communications and ignore these additional cues in some arenas, it is worth noting that even in IM communications different factors may come into play to influence both breadth and depth of disclosures. The notion of IM conveyed to participants in the current study was of an arena in which individuals are not visually connected but do engage in synchronous communication. Visual instant chat via a medium such as Skype would offer another distinct category of video conferencing that would include additional visual cues not present in the type of IM considered in the current study. A more rigorous test of the categorical versus cue-impoverished text based approaches would therefore benefit from comparing text-only communications to those rich in cues to offer more conclusive evidence for a categorical understanding of online SDC. This would be particularly pertinent given that according to HCMC theory it could for instance be expected that SDC would be more heightened in carefully edited written messages than any other form of online communication (see Walther, 2006). Including a consideration of length of communicators' familiarity, number of exchanges, and perceived levels of prevalent social norms would also allow a more rigorous test of both SIP and SIDE theories. It is however worth bearing in mind that most studies that have offered support for reduced cues theory (Joinson, 2003; Suler, 2004), hyperpersonal computer mediated communications theory (Tidwell & Walther, 2002; Walther, 1995, 1996) and for social information processing theory (Walther & Burgoon, 1992) have done so by comparing online and offline SDC. Clearly, online communications are different to offline communications. Just as there are different ways to communicate offline, and different settings in which people might feel inclined to share information about the self with another person, there is an ever increasing number of type of arena in which to communicate with other people online. There are also offline situations in which people not only engage in accelerated SDC, but divulge far more or different types of self-information to some people than others. One would, for example, hopefully share a very different category of self-information in a job interview than on a night out with a potential lover. Across both scenarios there would, however, likely be some gradual exchange and progression of the different types of information from the superficial to the more personal, with the two hierarchical categorical routes of personal information chosen for each occasion likely differing from one another. It seems thus somewhat unreasonable to expect to be able to explain all instances of online SDC as accelerated due to just one factor such as impoverished cues or text rich communication compared to offline SDC. It might be conducive for research to move in the direction of considering different types of online communications across multi-modal arenas with different aims and goals. The SMS model may not be the best model to use for this, but it does offer testable hypotheses that resulted in the current pattern of results supporting a categorical, possibly hierarchical nature to online SDC akin to the social penetration theory that calls for development of a reliable, testable theory. The current findings also highlight the need for a SDC measure that specifically tests categorical disclosures that become progressively more detailed, revealing and intimate with increased communication exchanges. In retrospect, the Magno (2009) SDC scale may not have been ideal for the type of task in hand and may not have been the best scale to gauge SDC on the types of Internet site of interest, especially OS, but given the lack of other tried and tested measures, it does at least offer a consistent measure of sub-types of SDC that has been rigorously tested and previously used in this type of research (see Attrill & Jalil, 2011). There is currently only one other thoroughly tested scale that tests a sufficient range of different types of SDC to test categorical SDC, namely that of Jourard and Lasakow (1958). Their 60-item SDC questionnaire has been used for diverse and varied offline research, but most of the items are irrelevant to a current Internet world. Blau (2011) also recently proffered a scale that tested depth, honesty and intent of online disclosures, but this was unsuitable for the current study given the absence of categorically ordered material within those three broad areas of interest. Clearly, future research is tasked with creating and rigorously testing a more suitable scale that tests both breadth and depth of reported online SDC, along with rapidity of disclosures in a hierarchical categorical manner.

To summarise thus far, whilst further contributing to understanding the where, why, when, how and with whom people self-disclose online remains a challenge for future research that is beyond the scope of the current study, the current work is most in line with HCMC theory than other theories thus far discussed. Although HCMC theory inherently suggests that people selectively share the information that they deem suitable to shape and craft a certain online self in any given online interaction, it does not specifically state how that selectivity ensues. It does not, for instance, explain why one type of self-information might achieve disclosure salience over another, or what factors influence the active sharing of certain types of self-information. Indeed, Walther (2006) himself points out that the model does not make predictions about the role of specific contexts in which communications or SDC occur. The current study therefore offers two important contributions for future research to help progress our theoretical understanding of selective SDC across diverse Internet arenas. Firstly, it offers a novel way of understanding how this selectivity might occur by drawing on social cognitive considerations that aim to explain categorical hierarchical self-memory organisation and retrieval in a way that is analogous to the processes of gradual reciprocal SDC characteristic of social penetration theory. Demonstrating that this type of categorical processing likely also occurs in online communications exchanges offers a springboard to elucidating our

understanding of what cognitive processes might be involved in online SDC. After all, we are not innocent by-sitters of our online interactions. As noted by Derlega & Berg (1987) we perceive, interpret, process and respond to communication exchanges. Secondly, the current work demonstrates that SDC may not be an identical process across all Internet arenas, but is more likely to be goal-directed as suggested by HCMC theory.

A final thought in relation to theoretical considerations worth bearing in mind not only for this but also for many other online SDC studies, is that most theories outlined both here and elsewhere do not specifically focus on SDC. They are most often social and/or communications type theories that include SDC almost as a by-product of online communication without specifically focusing on the underlying mechanisms and processes that are involved in at least the minimal levels of SDC required for all instances of online communication. For example, the HCMC model's emphasis is on the occurrence of hyperpersonal communication in online exchanges. It does not focus on SDC *per se*, nor do the SIP and SIDE models, with the SIDE model, for instance, being created with the aim of understanding the self in offline group interactions and being adopted to do the same in online CMC. Work is clearly needed to establish a model that specifically focuses on online SDC and its associated underlying social cognitive processes.

Limitations and future directions

Whilst the findings suggest that self-reported categorical SDC occurs online, a number of limitations could be levied at the current interpretation that raise more questions for future research than are answered by the current study. For instance, whilst the notion of *general communication* was verbally outlined to participants prior to completing the questionnaire as reflecting communications such as email, they may have nonetheless interpreted this as indicating a specific type of computer-mediated communication. Additionally, if they did reflect upon email correspondences, they may have had the quandary of trying to answer the questions in relation to communications partners as diverse as intimate partners or work colleagues with whom they regularly communicate via email, both of whom would likely have evoked the notion of different communications goals. Regardless of this non-specific use of the term *general communication*, however, in line with IM and SNS revelations, participants were significantly more likely to reveal information about their personal matters and interests (general events) than they were event-specific knowledge (intimate feelings and beliefs) within these arenas, thus substantiating previous proposals of categorical SDC online (Attrill & Jalil, 2011). In relation to the GC category, participants could however have also been thinking of diverse synchronous or asynchronous communications. In terms of emails, for example, participants might have been considering the asynchronous, considered communications that enable them to edit and manipulate their correspondence to project a desired image of themselves. Crafting considered responses may also lead individuals to think about the email content that they are sharing with a potential recipient and could invoke the editing out of potentially revealing self-information that might not ensue in synchronous, more spontaneous communications such as IM. This proposal would not only explain the current findings of lower levels of SDC in GC, but would also contradict the notions of text-rich communications leading to accelerated and heightened online disclosures.

Future research clearly needs to assess SDC across more than the four Internet arenas considered in the current work to help paint a clearer picture of not only the role of the Internet arena, but the goals and different modalities of communication in different types of arena in eliciting online disclosures. This recommendation is further substantiated by a methodological consideration in relation to SNSs. Social networking sites such as Facebook are rapidly and constantly changing. This website alone now offers individuals various forms of both synchronous and asynchronous communication opportunities that can be delivered to individual and multiple recipients alike, ranging from a wall post publicly displayed for anyone who stumbles upon it to see (according to privacy settings), to email type correspondences with one or more others within the site, to a more intimate synchronous one-on-one correspondence via the site's instant chat function. These functions also range in their level of cue-richness, but all require text-based communications. Whilst these considerations of the current methodology may limit the theoretical considerations of the study, it is important to note that this work is intended to widen our current understanding of reported online self-disclosures by offering a preliminary exploration into a factor that could be one of the most important determinants in the sharing of self-information online, namely the type of Internet arena in which that information is shared. Moreover, it is likely the first reported study to directly consider possible social cognitive factors that drive selective and diverse sharing across those arenas.

The measuring of self-reports amongst only a student sample in the current study could also be perceived to be a weakness of the design used given the diverse demographic of modern Internet users. Since Attrill and Jalil (2011) provided evidence to suggest an absence of significant differences in how students and non-students self-disclose online, the current methodology was considered adequate for an exploratory study of this nature. It is nonetheless recommended that in light of these findings of self-reported online disclosures according to type of Internet arena, that future work not only replicates this type of study by assessing reported and actual self-

disclosures across a variety of Internet arenas amongst both student and non-student participants, but also considers what aims and goals individuals hope to achieve with those disclosures. This interplay of arena and type of SDC could be further modified by the privacy and security concerns that individuals have in relation to the different types of Internet arena. Sharing intimate feelings or relationship information in a one-to-one instant messaging exchange may, for example, be considered by individuals to pose less of a privacy or security risk than sharing the same information on a social networking site. Testing these notions in future observations of actual disclosures gathered through either data mining or experimental methods would add to the validity of the current theoretical proposals. That said, prior to creating elaborate lab-based or extensive data mining studies, it is useful to have some groundwork upon which to base notions and future predictions of categorical disclosures. This study provides exactly this, a novel and exciting way of considering online SDC from a social cognitive processing perspective that can be extended to assess whether the findings hold true across a number of different methodologies. Such future work could also consider for instance whether people are more likely to be truthful in anonymous self-reports of their online disclosures than they are under observations of actual behaviour where factors such as social desirability and/or social norms are considered to regulate disclosures.

Given the rapidly evolving Internet, the current research although including only four types of non-specified websites highlights the need for future empirical consideration to be given to the diverse ways in which individuals create and maintain different types of relationship online. It is not always conducive to compare online to offline SDC, especially when considering the evolution of Internet arenas in which people now communicate with one another that simply do not exist offline. Take, for example, the sharing of self-information on a SNS. Whilst individuals have some control over the level of information they reveal to others and a somewhat directed demographic that remains as private or public as determined by their security and privacy settings, they are also conveying information about their relationships to more than one individual. Broadcasting the self in such a public way is rarely achievable offline, as is the interpersonal communication now synonymous with online gaming or virtual worlds. These might be akin to offline team sports or large socialising events, but the offline interactions rarely offer the individual access to potential communications partners from diverse and varied backgrounds from far flung reaches of the globe. Offline, there are also a multitude of ways in which individuals come together to communicate and disclose self-information to others. It may now be time for researchers to acknowledge that research needs not only to recognise this diversity online, but afford it the privilege of both theoretical and empirical scrutiny in its own right. In doing this, research will need to consider varied and diverse factors that impact upon SDC as a dependent variable, as well as considering its role as a mediating and influencing factor on different aspects of computer-mediated-communication. One of the most pressing goals borne from the current pattern of results for future research should be to explore and consider the goals, aims and intentions that drive individuals to either voluntarily or involuntarily share some or all of their personal information with both known and unknown others on the Internet. Sharing self-information on an OS site, for example, clearly serves a different purpose to revealing personal information to many others via a SNS, as does the likely more private and seemingly personal one-on-one communication typical of IM communications.

Conclusion

The current study suggests that individuals report selective and categorical self-disclosure online depending upon which Internet arena is being used for online communications, a finding that supports Walther's (1996) HCMC model and adds the consideration of different online social situations to elucidating where selective SDC might be expected to occur. In doing so, it offers further directions of research for considering the social cognitive processes that may drive the selectivity that is inherent to the hyperpersonal CMC model. As with most areas of research considering online behaviour, however, the recency of this area of research and the rapidity of technological advances and pace at which theoretical developments are required to keep up with those advances, means that the current research once again raises a range of factors that need to be considered in advancing our understanding of online self-disclosure, not least the need for an Internet-specific theory that accommodates current observations in categorical online disclosure, but that also enables clear predictions as to when individuals will share both quantity and quality of self-information across a varied and goal-directed Internet landscape. Whilst the current findings demonstrated a pattern of categorical disclosures akin to those outlined by social penetration theory that could be mapped onto the SMS model of autobiographical memory, they did not offer conclusive support for a categorical approach to understanding online SDC over a cue-impoverished and text rich explanation of online SDC. Nor could a feature-based explanation of the results as outlined by Hancock and colleagues be ruled out. Rather, in keeping with its exploratory nature, the current data highlight the need for a research focus on Internet based communications in their own right and the development of an online specific theory of SDC along with the appropriate tools to measure predictions set out by that theory. The paper therefore hopefully provides some thought-provoking and exciting avenues for future research to pursue, not least laying down the challenge of hopping from this empirical stepping stone to further exploring not only how, when and

why people share personal information in a goal-directed manner online, but to also considering the role of cognitive processes in that selective sharing.

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Appendix
Example of type of Questionnaire used
Items taken from Magno (2009) self-disclosure scale.

Written instructions

Please enter the number beside each of the following items as to how relevant they are of your Internet communications. You will see that we are interested in learning about your **Instant Messaging (IM)**, **Social Networking (SN)**, and **Online Shopping (OS)** behavior and general online communications (**GENERAL**).

Additional verbal instructions

For general communication, please think about other ways in which you communicate with people online. This might, for example, be via email. Some of the items refer to ‘God’. Please substitute this for a Deity in line with your own religious views.

Please use the following scale for each of the behaviours:

- 1 – When you have **NEVER** encountered, done or felt the situation
- 2 – When you have encountered, and felt the situation only for few times or **RARELY**
- 3 – **SOMETIMES** you have encountered, done or felt the situation
- 4 – When you have encountered, done or felt the situation most of the time or **OFTEN**
- 5 – When you have encountered, done or felt the situation all the time or **ALWAYS**

	SCORE			
	IM	SN	OS	General
I talk about my current struggles in life to others.				
I tell my best friend the things that I worry the most.				
I feel opening up my personal problems to others.				
I discuss my feelings in my affairs.				
I feel opening up my situation to others when troubled.				
I don't make my intentions a secret.				
I tell my personal insecurities to others.				
I am open about my admiration towards the opposite/same sex.				
I tell my friends about my problems in a form of a joke.				
I make sure that all my friends know my interests.				
I discuss my ups and downs regarding my spiritual life.				
I share my happiest moments with my friends.				
I talk about how concerned I am for a particular person.				
I am not ashamed to share my personal beliefs even it is weird.				
I talk about my spiritual life to other people.				
I allow myself to be known to others.				
I share my views about God.				
I tell the world the kind of things that make me proud.				
I talk about the things in the past or present that I feel ashamed of.				
I let other people know me so that they would reveal themselves.				
I open myself to others wholeheartedly.				
I tell people the sensitive parts of my body.				
I discuss my ideas openly.				
I express my thoughts whenever necessary.				
I tell my friends whether or not I am attracted to the opposite sex.				
I feel comfortable in revealing secrets about myself.				
I tell someone about my dreams.				
I talk about my troubles in a particular subject.				
I talk about my love life in details to friends.				
I tell my best friend the style of clothes I want.				
I share my fears with my friends.				
I talk about my current struggles in life to others.				

	SCORE			
	IM	SN	OS	General
I share the lessons I learned in my religion.				
I tell other people about my spiritual blessings.				
I talk about my family problems to other people.				
I tell my sad moments to friends.				
I talk about the kind of party or social gathering I like best.				
I discuss the time when I felt I was in love.				
I feel opening up my troubled situations to others.				
I give information about myself in casual situations.				
I quickly approach my parents when I have a big fear about something.				
I am irritated about my big problems when I haven't told anybody.				
I talk about my personal standards of attractiveness about men and women.				
I feel talking to people about my problems anytime.				
I talk about my personal life whenever there's a chance.				
I tell about my ambitions in life.				
I share my academic problems.				
I talk in great detail about my successes.				
I tell people about my life goals.				
I share with my closest friends what it takes to hurt my feelings deeply.				
I make sure I share something about my personal self during conversations.				
I share my beliefs about God.				
I talk about how important school grades are to me.				
I share my frustrations in life with my best friend.				
I feel the need to have somebody to talk to when i have failures.				
I tell my friends the kind of stores where I want to buy my clothes.				
I tell my close friends who my crush is.				
I tell my friends about the hassles I experience at home.				
I talk about what I feel are my special strong points for my work.				
I tell my problems to my friends.				