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The lies we tell and what they say about us: Using behavioural characteristics to explain Facebook activity

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ABSTRACT

Are there two definable groups of users of social networking sites based on the individual's interaction style, that is whether the prime goal is to self-promote (broadcast) or maintain relationships (communicate)? Do such groups indulge in differing patterns of deceptive behaviour? Measures of personality, behaviour, and Facebook activity were completed by 113 undergraduate students all of which were active Facebook users. Regression analyses showed that while broadcasting behaviour was predicted by risk taking, an out-going personality and an absence of quality interaction; low mild social deviance predicted communication behaviour. Unexpectedly, cluster analysis identified three, not two, distinct groups of users: high broadcasters, high communicators and a high interaction group. Although each group mainly interacted with known others, their style of the interaction varied. Communicators' interaction style supported group cohesion often through the use of 'white lies' or social oil; while the remaining two groups indulged in deceptive behaviour designed to self-promote or aggrandize the individual.

1. Introduction

1.1. Social networking sites (SNSs)

Active participation in contemporary society is becoming increasingly reliant on digital technologies, a trend that shows no sign of abating. One seemingly omni-present category of technology is the social networking site (SNS), a technology embedded in the daily lives of millions of people worldwide (Dwyer, Hiltz, & Widmeyer, 2008). Communication through SNSs is more akin to non-digital human communication in contrast to text-based computer-mediated communication (CMC) which, according to Walther (2007), has four key affordances that distinguish it from face-to-face (ftf) interactions. These are editability, time flexibility, physical isolation from the receiver and loss of visual cues, which results in reduced cognitive load allowing greater concentration on the intended message. This hyperpersonal perspective suggests that CMC can lead to equal or even more socially desirable interactions than do ftf interactions (Walther, 1996). This positive interpretation of the loss of visual cues is possibly the most contentious, as they have been to shown to affect communication processes, the social judgments individuals make about each other, and also task performance (Burgoon et al., 2002; Sia, Tan, & Wei, 2002). FaceBook shares two of the four CMC properties. However, its multi-modality reduces physical isolation and allows the cues and subsequent biases prominent in ftf interaction to re-emerge, providing an online equivalent of physical or ftf social networks.

Within these web-based services, individuals construct a public or semi-public profile within a bounded system, which allows them to connect with others, and to articulate and make visible their own social networks. However, the nature of these online relationships does remain unclear. For example, connections may be made with close friends or relatives within a 'close' bounded system, or with relative strangers who may have nothing more in common than "latent ties" (Haythornthwaite, 2005). Either way individuals are not necessarily looking to meet new people; they primarily communicate with people who are already part of their extended social network (boyd & Ellison, 2007).

Much research has been conducted on how such technologies shape users' behaviours. In particular, it has been argued that these virtual environments allow individuals to indulge in impression management altering their digital self-representation. While there is a large measure of agreement that technology encourages users (senders) to portray themselves in a more positive light to others (receivers), there is some debate concerning the degree to which self-presentation is modified through the use of technology. Walther's (1996) work on computer-mediated communication, encapsulated in his hyperpersonal model, is a starting point for understanding the processes involved in such impression management. This model asserts that senders in these text-based environments selectively self-present, editing their messages to reveal socially desirable attitudes and aspects of the self. As such the

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hyperpersonal model supports a strong influence of text-based CMC technology for self-representation. The argument here is that senders not only selectively self-present to project a socially desirable "me" but that interactions through CMC may result in a snowball effect; that is they "*may create dynamic feedback loops wherein the exaggerated expectancies are confirmed and reciprocated through mutual interaction via the bias-prone communication*" (Walther, 2007, p. 2539). While this model has received support in the literature (see for example Hancock and Dunham; 2001; Antheunis, Valkenburg, & Peter, 2007), recent research suggests there are limits towards the impact of technology on behaviour. For example, Zhao, Grasmuck and Martin's (2008) posit an alternative version of the hyperpersonal model acknowledging that positive self-presentation does occur but questions, in the case of at least some if not all users, the existence of a snowball effect leading to an ever more positive presentation. Further support for this weak form of the model can be found in Ellison and her colleagues' examination of online dating behaviour. They argue that the notion that people frequently, explicitly, and intentionally present overtly positive self-representations is simplistic and inaccurate (Ellison, Heino, & Gibbs, 2006; Gibbs, Ellison, & Heino, 2006).

Rather than questioning the validity of either of these two positions, we argue that the seeming conflict in the research findings on impression management may be due to variations in the nature and purpose of any given communication. To test this assertion, the current study investigated self-representation and associated lying behaviour when individuals indulge in two distinct modes of interaction, broadcasting and communicating outlined in detail below.

1.2. Two modes of online interaction

Research shows two modes of interaction when using a SNS: the one-to-many with the primary flow outwards from the one; and, the one-to-few with reciprocal exchanges. These are termed broadcasting and communicating in this study. Broadcasting can be perceived as a public communication style characterized by the individual's self-projection (Pempek, Yermolayeva, & Calvert, 2009). While broadcasters may engage in activities aimed at public consumption, communicators are more private. Evidence from the related activity blogging suggests that these two modes of interaction will vary in the quality of the interaction. Broadcasting is an act of self-projection involving impression management (Walther, 1996), which in the case of blogs has been shown to result in a low quality of interaction (Instone, 2005; Zhou & Hovy, 2006). Whereas the act of communicating will generate high quality interactions because it is largely between known associates, that is individuals with shared characteristics, (Skinstad, 2008). So one question here is whether the quality of interaction is a discriminating factor between broadcasters and communicators.

The magnitude of information that individuals are willing to share with strangers, and the degree to which users are comfortable about the risks of doing so, raises some concern (c.f., Kolek & Saunders, 2008; Stutzman, 2006). SNSs users have higher risk-taking attitudes than non-users (Fogel & Nehmad 2009) with males particularly prone to risky behaviour (Zuckerman & Kuhlman, 2000). This acceptance of risk has been linked to higher levels of extraversion. For example, extraverts have been shown to take the central and dominant position in friendship networks (c.f., Wehrli, 2008) and to use the internet to 'voice their opinions' (Amiel & Sargent, 2004), with males more interested in information and opinion-giving than females (Pedersen & Macafee, 2007) and using language indicative of self-promotion (Dahlberg, 2001).

Risk has also been linked to mild social deviance (MSD). MSD is low-grade delinquent behaviour (Allen, Porter, McFarland, Marsh, & McElhaney, 2005) such as taking public transport without paying (West, Elander, & French, 1993). In a similar population of undergraduates to the current study, Underwood (2003) found that students registering higher MSD were more likely to confront other students in the context of failure to provide work for the group if that failure impacted on them personally, but ignored poor behaviour if it had no personal cost to them. Allen et al. (2005) found 'popular' individuals in online environments were more prone to MSD behaviour. This suggests that individuals with larger networks of online friends (indicative of greater popularity) will exhibit higher levels of MSD.

An underlying premise of the current work is that all individuals engage in lying behaviour when engaging in social networking activities. However, the nature of lying can range from what would are often termed 'white lies' to more serious forms of deception (c.f., DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996; Hancock, Thom-Santelli, & Ritchie, 2004). DePaulo et al.'s (1996) taxonomy of lies is used as an analytical framework in this study. According to DePaulo et al., there are four main features: (1) the content of the lie, (2) the reason for the lie, in terms of who the lie is to protect, (3) the type of lie, which is how serious a lie is, and (4) the referent of the lie, which is who the lie concerns. However, what remains unknown is the difference between broadcasters and communicators with regard to the types of lies that are engaging in. Are they part of the self-promoting behaviour as one would anticipate from the hyperpersonal model or do they serve other purposes?

Facebook offers individuals a digital asynchronous medium for self-presentation. According to Zhao et al. (2008) this lack of anonymity enables users to express their identities implicitly rather than explicitly with a stress on the group rather than the individual. However, a focus on self-presentation tends to result in selective honesty (Skinstad, 2008). Moreover, DePaulo et al.'s (1996), diary studies of everyday lying, found that male students told significantly more self-centred lies than did female students, with over half of their total lies being self-oriented in nature. These lies are part of a strategy of impression management and self-promotion, which can be classified using Jones and Pittman's (1982) taxonomy. Using Walther's (1996) model as a framework for his own studies of lying behaviour in online settings, Hancock (2007) also noted that lies told to casual partners often result in self-benefiting lies to put the individual in a better light. The question raised here is if broadcasting information on Facebook is essentially a form of self-promotion, then do those who engage in such self promotion do so by telling self-oriented lies to edit their self? (Ginger, 2007).

Ingratiation involves lies told in quality interactions to aid social interaction (Jones & Pittman, 1982). Such lies enhance the interaction by making the other individual feel good and can act to minimize the differences between the individual's opinions and the opinions of others (Fink, 2007). As an extension to Hancock's (2007) original work, the current study investigates whether 'communicators' engage in lying to facilitate social interaction, and whether the lies were to benefit others rather than self-serving. If it were established that communicators are engaging in quality interactions, then lying to ingratiate oneself with the group would be an effective strategy of impression management.

The current study therefore investigates undergraduate student behaviour and their use of social networking activities using a popular social networking site (Facebook). As students are the largest and most active cohort of users (Gosling, Gaddis, & Vazire, 2007) for whom FaceBook is an integral part of college life (Pempek, Yermolayeva, & Calvert, 2009) selection of this sample allowed an investigation of Facebook in its most socially dynamic state. Although it was anticipated that individuals would engage in both broadcasting and communication activities, it was anticipated that individual differences in the level of use each mode of communication would produce discernable groups of users. The goal here was to establish the coherence, permeability and behavioural

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characteristics of relatively different groups of individual's based on their own self-perceptions of online behaviours (namely, broadcaster and communicator groups).

Assuming that these distinct groups are identifiable, three specific predictions were made on the basis of previous work in this area (Walther, 1996; Walther, 2007; Zhao et al., 2008). It was predicted that:

1. Broadcasters would demonstrate an overall lower quality of interaction than that of Communicators.
2. Broadcasters will be more likely to be male, more extravert and engage in risk taking behaviours with higher levels of mild social deviance than the Communicators. Higher risk seeking and deviant behaviour would lead to greater self-projection and exposure of 'self' to the world.
3. As suggested by Walther (1996), Walther (2007), Broadcasters would use lying behaviour as a tool for positive impression management while Communicators will use lying behaviour to maintain social cohesion (Zhao et al., 2008).

2. Method

2.1. Participants

In total, an opportunity sample of 113 undergraduate students within a UK university, aged between 18 and 36; 48 males (M = 20.94 years, SD = 2.49) and 65 females (M = 20.65 years, SD = 2.57) participated in this study. The key criterion for inclusion in the study was an active Facebook account.

2.2. Instruments

The Social Networking Questionnaire: This 18 item questionnaire captured the nature of activity on the social networking account. All responses were on a positively anchored 5-point Likert scale. Two variables were taken from this questionnaire: level of broadcasting (M = 2.26, SD = 1.04) and level of communicating (M = 3.13, SD = 1.04).

The Social Interaction Form (Hancock et al., 2004) has two main sections; the social interaction form and the deception form. Social interaction measures included details of the quality of participants' most recent interaction including who the interaction partner is, how well liked the interaction partner is and the quality of that interaction. The response to each of these five items was given on a 9-point Likert scale with 1 for 'not at all'' and 9 'very much'. All questions had the same polarity with a score of 9 indicating high quality social interaction, and a possible range of mean scores of 1–9. The variable created here was termed partner/quality. The sum of these ratings was level of social interaction (M = 6.19, SD = 1.55) Cronbach's alpha for the variable partner/quality was 0.90.

For deception, individuals based responses on their most recent lie irrespective of whether it was off or online. Each respondent provided assessed the degree to which the lie was premeditated, how serious they adjudged lie to be and how comfortable they felt when lying. All responses were on a 9-point Likert scale with adjusted positive polarity. These were summed to produce the variable comfort in lying (M = 5.79, SD = 1.36) with recorded a Cronbach's alpha of .71.

In addition, questions on the content, reason, referent and characteristics of the recipient of the lie, and whether the lie was self-oriented provided categorical data.

The (Adapted) Social Motivation Questionnaire (SMQ) (West et al., 1993): This measure of the propensity for mild social deviant behaviour was updated for a student population with two driving focused questions being taken out of the original questionnaire ('Drive through a traffic light after it has turned to red', 'Slash the tyres on a car whose driver made a dangerous manoeuvre') and one student-relevant question added ('Download music illegally'). The response to each of 12 items was given on a 3-point positively anchored Likert scale with 1 for 'unlikely to' and 3 'likely to' indulge in the described deviant behaviour (M = 1.79, SD = .34). West et al. (1993) report good reliability for the original scale (Cronbach's alpha = .76) but this was reduced to an acceptable 0.68 with the changes made to produce a more student-focused instrument.

Eysenck's Personality Profiler-Short form (EPP-S) (Eysenck, Wilson, & Jackson, 1996): Four subscales of the EPP-S were employed here: sociability, activity, assertiveness and risk-taking. Individual items had three possible responses: 'Yes', 'No', or 'Can't Answer'. The first half of the questions on the subscales were scored positively (No = 0, Yes = 2) and the second half negatively (Yes = 0, No = 2). Two variables were determined; 'out going personality' comprised 60 items from the combined extraversion subscales of sociability, activity and assertiveness (M = 1.14, SD = .33) and 'risk taking' comprised of 20 items (M = 1.07, SD = 0.31).

No specific reports of the validity and reliability of the EPP-Short were found but Costa and McCrae (1995) report good internal consistencies of the three original EPP subscales, which are mirrored within the EPP-Short. Each 20-item scale showed high internal consistency: the Cronbach's alpha scores were as follows extraversion (.84), sociability (.83), activity and assertiveness (.79). The 20-item risk-taking subscale measures how dangerous a participant is in terms of risky behaviour (Eysenck et al., 1996) and had moderate internal consistency, with a Cronbach's alpha of .71 (Costa & McCrae, 1995).

2.3. Procedure

Participants completed all instruments individually, in a set order and in the presence of the researcher. No time constraints were placed on the participants. A session lasted approximately 20 min.

3. Results

3.1. Predicting broadcasting

Correlational analyses showed positive relationships between level of self-reported broadcasting and MSD (r = +.364, N = 113, p < .01); risk-taking (r = +.531, N = 113, p < . 01) and out-going personality (r = +.543, N = 113, p < .01). However, broadcasting was strongly negatively correlated with both interaction quality (r = −.514, N = 113, p < . 01) and sex (r = −.280, N = 113, p < .01) that males were more likely to broadcast than females.

A regression analysis showed that four variables accounted for 41.4% of the variance in broadcasting, $F(4, 108)$ = 19.095, p < .001. Three variables were significant stand-alone predictors: Out-going personality (Beta = +.21), risk taking, (Beta = +.23) and interaction quality (Beta = −.28). Interaction quality was the strongest of these predictors, showing broadcasting was related to interactions with individuals who are less known and less liked. The fourth contributor variable to the model, the user's sex, did not reach significance (p > .05).

3.2. Predicting communicating

Correlational analyses showed positive relationships between level of self-reported communicating and interaction quality (r = +.220, N = 113, p < .01) but a negative relationship with MSD (r = −.264, N = 113, p < .01). A regression analysis showed that interaction quality and MSD accounted for 9.9% of the variance in

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communicating, $F(2, 110) = 6.026$, $p < .005$) with MSD being the single significant predictor (Beta = −.229).

In summary, these analyses demonstrated that self-reported broadcasting behaviour was linked to high risk-taking, out-going personality and a low interaction quality. However, the analysis provided limited knowledge about the nature of communicating. This lack of clarity for the concept of communicating suggested that communicators as a group lacked clear identity. The question then arose as to whether they were a non-coherent mass or whether further analyses would establish one or more distinct and coherent groups.

3.3. Determining distinct profiles of broadcasters and communicators

In order to establish whether specific groups of people exist within the data, a hierarchical cluster analysis using Ward's method was performed on the data from the social networking questionnaire (cf., Youngman 1979). Cluster analysis was employed because this provides a descriptive method for the identification of distinct profiles or cases based on the level of similarity of responses. A three-cluster solution, accounting for 86% of the total variance emerged from this analysis (descriptive labels are provided for ease of interpretation). The first cluster, the *high interaction* group ($N = 36$), was characterized by high scores on both predictor variables, broadcasting and communicating (see Fig. 1). This represents a group of individuals who are confident in communicating to a wide network of friends and frequently use networking functions to post information about their daily activities/routines. The *communicator group* ($N = 51$), was determined by high communicating scores but low broadcasting, while our third group, the *broadcaster group* ($N = 26$), were essentially the reverse of cluster 2 with high levels of broadcasting and low communicating .

To provide further validation of these three groups, a direct discriminant function analysis was performed with broadcasting and communicating scores as the two predictors and the three groups from the cluster analysis acting as dependent variables. As important as assessing the reliability of any research instrument, confirmation of the stability of a cluster classification is an essential step in the analysis (cf., Youngman, 1979). Analysis of variance revealed that the three groups differed significantly on each of the two-predictor variables, (Broadcasting; $F(2, 110) = 166.74$, $p < .001$; Communicating; $F(2, 110) = 70.039$, $p < .001$). The discriminant function successfully predicted group membership for 94% of the cases, with accurate placement at 89% for the *high interaction group*, 92% for the *broadcaster group* and 98% for the *communicator group*.

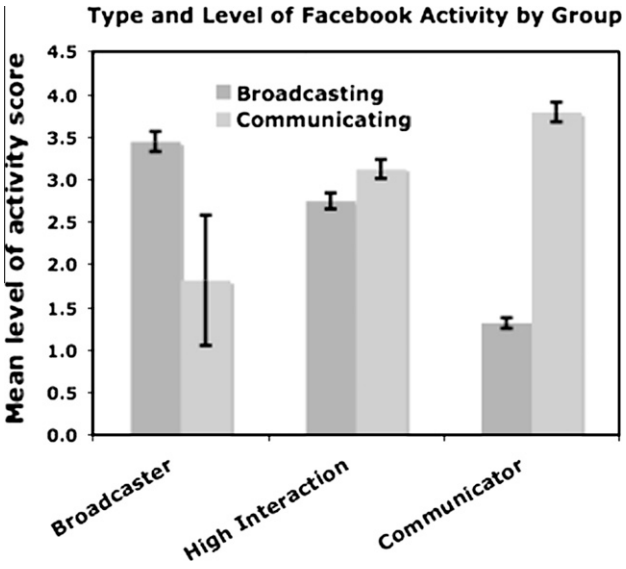

Fig. 1. Type and level of activity by three groups identified through the cluster analysis.

3.4. Differences in behaviour patterns

A series of ANOVAs and Bonferroni post-hoc tests explored differences in self-reported behaviour across the three distinct groups. The behaviours under analysis were the interaction quality; out-going personality, risk taking, MSD and sex.

Interaction quality statistically differed across the three groups ($F(2, 110) = 11.337$, $p < .001$, $\eta^2 = .17$). The post-hoc test showed that Communicators ($M = 6.85$, $SD = 1.5$) were more likely to talk to individuals who were liked and well known, than both the high interaction group ($M = 5.91$, $SD = 1.4$, $p < .005$) and the broadcaster group ($M = 5.29$, $SD = 1.3$, $p < .001$). There was no significant difference between the high interaction group and the broadcasters ($p > .05$).

The degree to which group members were outgoing also varied across groups ($F(2, 110) = 14.421$, $p < .001$, $\eta^2 = .21$). Communicators differed from broadcasters ($p < .001$) and the high interaction group ($p < .001$). Broadcasters demonstrated the highest level of out-going personality ($M = 1.32$, $SD = .35$) followed by those in the high interaction category ($M = 1.25$, $SD = .33$), with communicators being the least out going ($M = .97$, $SD = .26$).

Risk taking also varied significantly ($F(2, 110) = 10.241$, $p < .001$, $\eta^2 = .16$). The major difference was between communicators and broadcasters ($p < .001$), with broadcasters demonstrating a higher level of risk taking behaviour ($M = 1.26$, $SD = .31$) than communicators ($M = .95$, $SD = .25$). The high interaction group ($M = 1.10$. $SD = .32$) was significantly different from both broadcasters ($p < .05$) and communicators ($p < .05$).

MSD varied across groups ($F(2, 110) = 4.604$, $p < .05$, $\eta^2 = .08$) with the difference being between broadcasters and communicators ($p < .05$). Broadcasters had higher MSD ($M = 1.93$, $SD = .32$) than communicators ($M = 1.69$, $SD = .35$) but the high interaction group ($M = 1.82$, $SD = .30$) did not vary significantly from either broadcasters or communicators ($p > .05$).

Chi-squared tests established differences in lying behaviours by the three groups. The recipient of the lie did not differ across group $\chi^2(4) = 3.55$, $p > .05$) but did differ in terms of whether the lies were self-oriented or other-oriented. Broadcasters and the high interaction group told more self-oriented lies compared to communicators who told other-oriented lies ($\chi^2(2) = 16.59$, $p < .001$).

Finally, a one-way ANOVA identified significant group differences in the level of comfort in lying behaviour, $F(2, 110) = 8.590$, $p < .001$, $\eta^2 = .14$). Post-hoc analyses showed that communicators again differed from the remaining two groups. Communicators demonstrated a lower level of comfort ($M = 5.27$, $SD = 1.42$) than broadcasters ($M = 6.48$, $SD = 1.06$, $p < .001$) and the high interaction group ($M = 6.02$, $SD = 1.21$, $p < .05$).

4. Discussion

With the caveat that the data on which the conclusions are based were self-reported, the research confirmed the validity of the concepts of broadcasting (one-to-many communication) and communicating (one-to-one or one-to-few) in the context of interactions on the social networking site FaceBook. It also identified qualitatively distinct groups of FaceBook users and the characteristic behaviours related to those groups.

Supporting two of the initial hypotheses, three variables predicted broadcasting behaviour: risk-taking, interaction quality

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and an out-going personality, with interaction quality being the dominant predictor. However, while sex was a correlate the simple relationship of males being more likely to display personal information online found in previous work was not apparent here (Amichai-Hamburger & Ben-Artzi, 2000; Fogel & Nehmad, 2009). It is the tendency to accept risk, that leads to the broadcasting behaviour and not sex *per se*. Instone (2005) has also found that lower interaction quality is symptomatic of those involved in high broadcasting and this pattern of behaviour mirrors that predicted by Walther's (1996) hyperpersonal model.

The initial analyses failed to fully explain communicating behaviour. The one clear finding, that communicating was inversely related to MSD, does not support Allen et al. (2005) who found MSD predicted high levels of communication. No other variables predicted high levels of communication activity online and the main outcome from the communication regression model was an unexpected lack of group cohesion. As a result of this finding, further analyses were conducted to tease apart this poorly defined group and to identify distinct profiles of online networkers. Three, not two, distinct groups of users emerged: high broadcasters, high communicators and a high interaction group in which users were both active broadcasters and communicators. These groups were highly coherent and exhibited clear differences in social networking attitudes and behaviours.

The communicators were more likely to have anchored relationships. That is the communicators talked to individuals who were liked and well known; to focus on maintenance of strong close-knit social friendship group; to have regular high quality interactions and to support smaller online network communities (c.f., Singla & Richardson, 2008; Skinstad, 2008). They engaged in one-to-one or one-to-few activities such as sending messages aimed at a specific individual or specific audience. The interesting point relates to social deviant behaviours and lying. Analyses confirmed that, when compared to broadcasters, the communicators were less inclined to engage in risk-taking or deviant behaviours. Moreover, communicators were uncomfortable about lying even though their lies tended to be those everyday lies that oil social interaction (see Fink, 2007). The conclusion here is that communicators were working to support group coherence and to maintain their membership of the group. This is corroboration of Zhao et al.'s (2008) finding that users stress group identities over personally identities in their postings on FaceBook.

Broadcasters, by contrast, were defined by a lack of quality interaction, the latter being more about self-promotion. In line with earlier work, broadcasters who engaged in such self-promotion and self-oriented lies were created to provide a more desirable self (cf., Ginger, 2007; Hancock, 2007; Walther, 2007). In this sense the broadcasters' behaviours were closer to those within anonymous online environments (Bargh, McKenna, & Fitzsimons, 2002). They were also characterised by higher levels of out-going personality; risk taking behaviour, MSD and a willingness to engage in lying behaviours. The risk taking led to a greater willingness to disclose personal information online and engage in deviant or risky behaviours (c.f., Fogel & Nehmad, 2009; Hamberger & Ben-Artzi, 2000).

The high interaction group appeared to be a weaker version of the broadcaster type having lower quality interactions and greater comfort in lying than the communicators, but not matching the risk taking and mild social deviance of the broadcasters. These three distinct groups illustrate differing forms of 'self-projection' while using social networking features (Pempek et al., 2009). Zhao et al. (2008) assert that we should expect and do see different behaviours in anonymous and anonymous online environments. The research here shows that, while anonymous environments often do support an identity closer to that of the individual's real world identity, the degree to which this is so differs across individuals.

High-risk taking individuals continue to project a more positive 'me' even though the risks of being confronted by someone from the offline world are ever present. For instance, while all three groups focused their communication to known friends and acquaintances, there were both subtle and strong differences in the nature of the interactions with the others across the groups. Communicators tended to lie to maintain a social relationship that is they indulged in those 'little white lies' that provide social oil, allowing a relationship to function. Group maintenance rather than self-promotion is central to this group's behaviour. While acknowledging that such 'white lies' can have important social effects, the behaviour of communicators is more supportive of the more constrained hyperpersonal model posited by Zhao et al. (2008) and supported by the work of Ellison and her colleagues (Ellison et al., 2006; Gibbs et al., 2006) and Broadcasters and the high interaction groups, on the other hand, tended to tell lies to put themselves in a better light, a form of self-projection or personal aggrandisement. In line with earlier work, broadcasters engaged in such self-promotion by telling self-oriented lies to create a more desirable self (cf., Ginger, 2007; Hancock, 2007). These two groups clearly exhibit many of the characteristics predicted by Walther's hyperpersonal model.

The identification of communicators and broadcasters may also have other implications for our understanding of engagement in social networking activities. Zhao et al. (2008) have asserted, "the online is a dreamland for deviant behaviours" (p. 1831), in an anonymous environment individuals project and identity close to their offline self, because the risk of being found out was high. However, Fogel and Nehmad (2009) found that individuals who make use of SNSs had higher risk-taking attitudes than non-users. This study is a qualification, and partial explanation, of the discrepancies in these findings. This study extends Fogel and Nehmad's work, in confirming a group of users with high-risk-taking attitudes (broadcasters) although the behaviours exhibited are not as extreme as those found in anonymous environments (Cinnirella & Green, 2007). However, the study also identifies a low risk-taking group (communicators) whose activity on FaceBook is more social than self-projection in line with Zhao et al.'s work.

It should be noted that much online activity either starts online on-line and then migrates to offline channels, a migratory mixed-mode relationships, or start offline but use online methods to stay in touch, a traditional long-distance relationships) (Walther & Parks, 2002), it is not purely virtual (Stafford, 2005). The impact of online mode of communication may vary with the type of relationship. Stafford (2005) suggested that CMC might have less impact on those who use it as an additional channel of communication.

In summary, the study identified differences in online social networking behaviours and supports the need to identify qualitatively different groups of individuals to better account for self-promotion and online presence. The study has provided evidence for highlighting two clearly identifiable modes of interaction when using a SNS, termed broadcasting and communicating, and provided compelling information for the underlying behavioural characteristics in helping to explain such online activity. These behaviours reside within three groups. At one end of the continuum are group-focused communicators while at the other are the self-focused broadcasters. The former use their lying behaviour to maintain group membership. As Charles Saatchi expresses it "Of course I lie to people. But I lie altruistically – for the mutual good. The lie is the basic building blocks of good manners" (Saatchi, 2010, p. 17). Broadcasters, on the other hand, seek to present a more positive image of themselves to their network of contacts, as the hyperpersonal model would predict. Members of the high interactive group remain cautious, while keen to self-project, they are uncomfortable with the risks attached to such behaviour. These findings are support for both a strong and a weak hyperpersonal

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model, the difference largely being attributable to the purpose an individual has when interacting with another online.

A final caveat: the findings here relate to young adults in the UK, but recent research has shown cultural differences in on-line deceptive behaviour. For example, both face-to-face and online Koreans were found to lie about their pay level and physical appearance, whereas American lies focused on age and location of the home (Lewis & George, 2008). As online communication goes global such cultural differences are potentially destructive, which makes cross-cultural deception research using culturally appropriate tools of increasing importance.

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