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Ben CF Choi
The University of New South Wales, chun.choi@unsw.edu.au

Zhenhui Jiang
National University of Singapore, jiang@comp.nus.edu.sg

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Ben CF Choi

School of Information Systems,
Technology and Management,
UNSW Business School, UNSW Australia,
Australia
chun.choi@unsw.edu.au

Zhenhui (Jack) Jiang

Department of Information Systems,
School of Computing,
National University of Singapore,
Singapore 119077
National University of Singapore (Suzhou),
Research Institute, 377 Lin Quan Street, Suzhou
Industrial Park, Jiang Su Province,
People's Republic of China, 215123
jiang@comp.nus.edu.sg

ABSTRACT

This study aims to understand how online identity interruption can impact psychological distress and how psychological distress drives avoidance intention in using online social networks. Results of the experiment indicate that the effect of content dispersion on feelings of betrayal is amplified when network similarity is low but the effect is nullified when network similarity is high. More interestingly, results reveal that the interaction between content dispersion and network similarity on feelings of betrayal is moderated by social readership. Responses from the participants also reveal that higher feelings of betrayal lead to higher avoidance intention. Implications for research and practice are discussed.

Keywords

Online identity, identity interruption theory, information dispersion, network similarity, social readership, and feelings of betrayal.

INTRODUCTION

Social networking websites, such as Facebook and Google+, have revolutionized interpersonal communication and relationship maintenance (Ellison et al. 2014; Oh et al. 2014). To facilitate social interactions, users typically have to create personal profiles, which contain substantial amount of personal information (Penney 2015; Toma and Hancock 2013). While personal profiles typically contain genuine information about individuals, the published information is often presented selectively (Reinecke and Trepte 2014; Rui and Stefanone 2013).

Recent research, however, has observed that individuals' online identity interruption might be triggered not only by careless self-disclosure but also elicited by others' exposures. For example, in national survey study, Rainie et al. (2013) found that 61% of Facebook users complained about the psychological fatigue associated with online identity maintenance. In particular, users found online identity presentation consistently challenged by friends' embarrassing gossips and comments. Consequently, in response to the psychological fatigue, these users typically

took a break from using the site for a period of several weeks or more. Hence, it is important to investigate how identity-interruption can be triggered by involuntary embarrassing exposures and how individuals respond to involuntary identity-interruption in online social networks.

This research draws on the Identity Interruption Theory (Burke 1996) as the overarching framework to understand the role of an embarrassing exposure in interrupting online identity presentation. This theory posits that an individual's identity presentation can be interrupted by uncontrollable social episodes. More important, according to the theory, individuals evaluate an interruption episode by focusing on interruption susceptibility (i.e., the potential extent of identity damage) and interruption severity (i.e., the quantified extent of identity damage) (Burke 1991). Following the Identity Interruption Theory, to explore interruption susceptibility, this research considers two information propagation mechanisms, namely posting-tagging and network similarity. While posting involves dispersing the embarrassing information from the source's profile, tagging identifies the target of the embarrassing exposure. Network similarity subsumes the overlapping social connectivity between the source and target in an embarrassing exposure. Whereas low network similarity implies two largely distinct networks, high network similarity emphasizes the high degree of commonality.

Our second objective is to provide a fine-grained understanding of the interplay between interruption susceptibility and interruption severity in affecting psychological distress. In particular, we draw on the risk analysis literature to develop a fine-grained understanding of the interactions between the two aspects of online identity interruption in influencing psychological distress.

Past research examining identity-related distress has largely focused on examining the emotional aspect of distress (e.g., Burke 1991; Stets and Tsushima 2001). Interestingly, the IS literature has predominantly emphasized on the cognitive aspect of technology-induced distress (e.g., Liang and Xue

2009; Liang and Xue 2010). Therefore, to this end, this study attempts to enrich the IS literature by developing better understanding of emotional distress in online embarrassing exposures. Thus, our third objective is to elucidate the specific emotional distress in online identity disruption. To this end, this study investigate the target's specific emotional response to an embarrassing exposure (Morrison and Robinson 1997).

LITERATURE REVIEW
Identity Interruption Theory
Identity Interruption Theory assumes individuals make specific efforts to maintain their desired identities in the social environment (Burke 1996). While past identity-related theories largely focus on tactful presentation of self and selective self-disclosure to uphold impression on others (e.g., Altman and Taylor 1973; Leary and Baumeister 2000), Identity Interruption Theory argues that identities are maintained through a control system which helps maintain an individual's identity in social contexts. According to the theory, identities are the set of meanings an individual connects to his or her self that are derived from the social environment (Large and Marcussen 2000). More important, unlike other identity-related theories that assume individuals' control over identity presentation, Identity Interruption Theory incorporates the role of other interactants in the social environment in the identity control system. In particular, Burke (1996) postulates that the social environment at times incubates identity-relevant information that interrupts an individual's desired identity. For example, on social media, users' professional identities could be severely disrupted by others' postings which include indecent pictures, undesirable comments, and indecorous personal information.

Identity Interruption Theory was proposed to explain how psychological distress arises from identity interruption. Psychological distress is explained as an interruption of the normal operation of an identity control process (Burke 1996). More important, the theory posits that the amount of psychological distress an individual experiences from identity interruption is a function of the salience of the identity interruption and the severity of the interruption. The salience of the identity interruption is about the likelihood of an individual's identity being damaged by a social event (Marcussen and Large 2003). The severity of interruption is about the magnitude of damage to an individual's identity (Marcussen and Large 2003).

Psychological Distress
Identity Interruption Theory posits that aspects of identity interruption determine the extent of psychological distress an individual experienced (Burke 1996). According to the theory, individuals' identity presented is interrupted, they react psychologically with emotional response. Emotional response relates to feelings of distress associated with identity interruption. Past research that examined identity presentation suggests that emotional response can be

particularly sensitive to the presence of important others and active involvement of others. The presence of important others, given their social importance to the target, does not only indicate the potential of severe reputation damage but also likelihood of social repercussion. Active involvement of others can be experienced when the identity disruption episode escalates to social exchange among multiple interactants.

RESEARCH MODEL AND HYPOTHESES
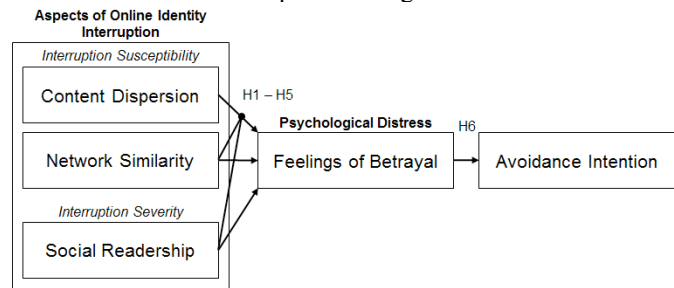The research model is depicted in Figure 1.

Figure 1. Research Model

The Effects of Content Dispersion
Past research suggests that target individuation enhances individuals' sense of psychological distress in involuntary exposures (Altman et al. 1981). In online social networks, identity interruption may be triggered through the dispersion of embarrassing information via posting or tagging. With posting dispersion, the embarrassing information is published without direct association with the target's personal profile. Consequently, target individuation is likely become less apparent. In contrast, tagging exaggerates target individuation by establishing explicit association between the embarrassing information and the target's personal profile. Collectively, compared to posting, tagging enhances the likelihood of identity damage in involuntary embarrassing exposure, and hence elevating the target's psychological distress. Thus,

H1: Compared to posting, tagging will lead to a higher level of feelings of betrayal.

The Effects of Network Similarity
Network similarity describes the overlaps between the social networks of two individuals. Whereas high network similarity reflects highly overlapping social circles, low network similarity is indicative to latent relationships. In the high network similarity condition, an individual's social network is extensively attached to that of a friend, and hence sharing the same audience to the dispersed information. In the low network similarity condition, an individual's social connections are largely distinct to that of the other. Therefore, others' content dispersion remains somewhat isolated to the individual's immediate social networks.

It is suggested that embarrassing information exposed to an known audience is particularly important because it does not only embarrassed the target but also damages his or her

reputation to known others. As noted by Rusbult and Martz (1995), interpersonal relationships require substantial relational investment in both developing and maintaining relevant self-presentation. Therefore, with high network similarity, embarrassing exposures could drastically elevate identity interruption, which would lead to more severe psychological distress. Hence,

H2: Compared to a low network similarity condition, a high network similarity condition will lead to a higher level of feelings of betrayal.

The Effects of Social Readership
In online social networks, social readership represents the realized audience to an embarrassing exposure. When social readership is low, the target might assume that the exposure remains largely unnoticed by the social network and hence the severity of identity disruption would be somewhat limited. Accordingly, the severity of the identity interruption caused by the exposure is largely curbed and hence the target might experience limited distress.

In contrast, high social readership indicates that the embarrassing exposure has received substantial amount of verified readership. Since the extent of verified audience can be quantitatively verified, the target will not be able to assume the content is overlooked by the social network. The target is also likely to deem the quantified viewership an undeniable indication of severe identity interruption, which is likely to elevate psychological distress. Hence,

H3: Compared to a low social readership condition, a high social readership condition will lead to a higher level of feelings of betrayal.

The Moderating Role of Network Similarity
When content dispersion is facilitated through posting, embarrassing exposure is contained within the exposure source's personal profiles. Hence, the target's personal profile is largely intact from the embarrassing information, which is essentially dispersed to the exposure source's immediate social connections. In general, such social connections are not entirely distinct from those of the individual's, leading to impression alternations by an audience from the overlapping social networks. Therefore, with posting, the nature of the source's social networks has a vital impact on an individual's audience control; consequently, content dispersion performed by a source with high overlapping social networks is more identity damaging than content dispersion performed by a source with less overlapping social networks. In contrast, under tagging, content dispersion is not limited to the source's immediate social connections, i.e., embarrassing information is explicitly inserted into the target's personal profile and becomes viewable by the target's social networks. Therefore, network similarity is likely to cause less significant difference in psychological distress. Thus,

H4: The effect of content dispersion on feelings of betrayal is stronger in the low network similarity condition than in the high network similarity condition.

The Inhibiting Role of Network Similarity and the Contingency Effects of Social Readership
While interruption susceptibility (i.e., content dispersion and network similarity) and interruption severity (i.e., social readership) both have main effects on feelings of betrayal, their influences can also be multiplicative. According to the risk analysis method, risk is calculated by multiplying the probability and cost of damage when a threat occurs (Liang and Xue 2009). Similarly, Identity Interruption Theory suggests that there is interaction between interruption susceptibility and interruption severity.

The interaction between interruption susceptibility and interruption severity can be explained by the notion of zero-value boundary in risk analysis. To illustrate, most people understand that committing embarrassing acts publicly is damaging to their identities, but they do not consider embarrassing acts a concern because they do not expect any possibility of committing such acts openly. Identity interruption poses threats to individuals' image in a similar manner. If an identity interruption is not expected to occur, individuals would not anticipate the severity of identity interruption. In essence, when social readership is low, the joint effects of content dispersion and network similarity on psychological distress will be diminished.

H5: Compared to a low social readership condition, a high social readership condition will enhance the negative moderation influence of network similarity on the impacts of content dispersion on feelings of betrayal.

Determinants of Avoidance Intention
Psychological distress is expected to induce avoidance intention. When individuals find that their identity control is disrupted by embarrassing exposures, they will be motivated to take actions to reestablish their identity control. This tendency can be explained by the hedonic principle, which posits that individuals are motivated to avoid harm. In embarrassing exposures, avoidance intention might manifest in multiple behaviors. For example, the target might withdraw his or her affiliation with the exposure source. By doing so, the target avoids subjecting himself or herself to further identity disruption. Additionally, the target might lodge a complaint to the online social network operator to complain against the exposure source. Collectively, psychological distress is likely to induce motivation for self-protection, and hence the target would develop stronger avoidance intention. Therefore,

H6: Feelings of betrayal positively affects avoidance intention.

RESEARCH METHODOLOGY
160 subjects were recruited to participate in the experiment. Subjects were presented with a hypothetical scenario in

which an imaginary friend (i.e., denoted by the name "X" and a unisex avatar), who shared 5% overlapping Facebook friends (or 30% overlapping Facebook friends) with the subjects, had posted (and tagged them to) a note, which had received an amount of Likes equivalent to 2% (or 22%) of subjects' Facebook friends, in the experimental Facebook environment.

DATA ANALYSIS
Results on feelings of Betrayal
ANOVA with feelings of betrayal as dependent variable reveals the significant effects of content dispersion (F (1, 152) = 187.39, *p* <0.01), network similarity (F (1, 152) = 68.48, *p* <0.01), and social readership (F (1, 152) = 133.23, *p* <0.01) (see Table 1). Hence, H1, H2, and H3 are supported. In addition, results also show that there is a significant interaction effect among content dispersion and network similarity (F (1, 152) = 4.74, *p* <0.05) as well as among the three independent variables (F (1, 152) = 11.93, *p* <0.01). To understand the interaction effect, we conducted a series of simple effect tests.

Results of the simple effect analysis (Table 2) show that when network similarity is low, content dispersion leads to higher feelings of betrayal (F (1, 78) = 25.74, *p* <0.01) but not when network similarity is high (F (1, 78) = 2.20, *p* > .05). Therefore, H4 is supported.

Table 1: ANOVA Results

	SS	df	F	Sig
CD	42.03	1	26.32	.000
NS	126.03	1	78.94	.000
SR	58.56	1	36.68	.000
CD * NS	7.57	1	4.74	.031
CD * SR	7.06	1	4.42	.037
NS * SR	49.28	1	30.87	.000
CD * NS * SR	19.04	1	11.93	.001
Error	242.67	152		
Total	3759.92	160		

R Squared = .56 (Adjusted R Squared = .54)

Table 2: Simple Mean Effects

	SS	df	F	Sig
NS = Low				
CD	42.63	1	25.74	.000
Error	129.19	78		
Total	2474.48	80		
NS = High				
CD	6.96	1	2.20	.143
Error	247.43	78		
Total	1285.44	80		

Table 3 shows that when social readership is low, the effects of content dispersion (F (1, 76) = 3.12, *p* >.05), network similarity (F (1, 76) = 3.77, *p* >.05), and the interaction of content dispersion and network similarity (F (1, 76) = .56, *p* >.05) on feelings of betrayal are not significant (Figure 3).

When social readership is high, the effects of content dispersion (F (1, 76) = 49.16, *p* <.01), network similarity (F (1, 76) = 195.96, *p* <.01), and the interaction of content dispersion and network similarity (F (1, 76) = 29.80, *p* <.01) on feelings of betrayal are significant. Therefore, H5 is supported.

Table 3: Simple Mean Effects

	SS	df	F	Sig
SR = Low				
CD	7.32	1	3.12	.081
NS	8.85	1	3.77	.056
CD * NS	1.30	1	.56	.459
Error	178.11	76		
Total	2262.12	80		
NS = High				
CD	41.76	1	49.16	.000
NS	166.47	1	195.96	.000
CD * NS	25.31	1	29.80	.000
Error	64.56	76		
Total	1497.80	80		

To investigate how feelings of betrayal can impact avoidance intention, a regression was performed using feelings of betrayal as the independent factor. The adjusted R-squared obtained from the linear regression is 0.51. The standardized coefficient of feelings of betrayal is -0.71 (p<.01). Therefore, H6 is supported.

DISCUSSION AND IMPLICATIONS
Discussion
The results strongly supported our hypotheses. Our results indicate that all three aspects of online identity interruption do have substantial impact of individuals' feelings of betrayal when their embarrassing information is involuntarily exposed on social media. More important, results reveal that the impact of content dispersion on feelings of betrayal is reduced by high network similarity but amplified by low network similarity. More interestingly, social readership is shown to play a crucial part in shaping feelings of betrayal. Specifically, when social readership is high, the interplay between content dispersion and network similarity on feelings of betrayal is amplified. In contrast, when social readership is low, the interaction effect is nullified. Additionally, our results demonstrated that the concept feelings of betrayal has a positive influence on avoidance intention.

Implications
Drawing on Identity Interruption Theory as the overarching framework, this study contributes to past identity-interruption research by recognizing and developing formal conceptualizations for online social network design factors that pertain uniquely to online identity-interruption, namely content dispersion, network similarity, and social readership. Offline interruptions are typically dispersed through word-of-mouth, which is substantially limited by the audience

prior knowledge of the target. In contrast, in the online environment, the two modes of content dispersion allows embarrassing exposures to be dispersed not just to the target's immediate social networks but extended to his or her latent network of friends (e.g., friends' friends). Furthermore, while embarrassing exposures typically conclude with the dissolution of an offline social interaction, online exposures are facilitated through the dissemination of digital content, which is imperishable and remains accessible for a prolonged period.

While past identity-interruption research has developed substantial understanding towards the impact of identity disruption on psychological distress, rarely have past studies gone beyond investigating the main impact. In this study, drawing on the risk analysis literature to theoretically postulate and empirically demonstrate the interactions between the two key aspects of embarrassing exposures in influencing individuals' psychological distress. Our results unearth the interesting interplay between content dispersion and network similarity. Specifically, the impact of content dispersion is observed only when network similarity is low but not when network similarity is high. To this end, our study provides fresh insights into the integrating impression management research and social network literature.

Practitioners should also note the differential effect of social readership over the interaction effect among content dispersion and network similarity. While social attention might be largely desirable when it is carefully managed, publicity associated with embarrassing exposures could be detrimental to continued usage of online social networking services.

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