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ANTECEDENTS OF ONLINE INFORMATION SEEKING

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ANTECEDENTS OF ONLINE INFORMATION SEEKING

This paper reports on a study designed to explore individual differences in uncertainty-reducing behavior regarding new and existing friends via online information seeking (OIS). Personality traits and social context were measured by surveying a sample of 377 Facebook users. Global uncertainty had a positive relationship with active information seeking about new friends, whereas communication apprehension was associated with seeking information about existing friends. The geographic proximity of close friends and family did not affect information-seeking behavior, but those with larger strong tie networks spent more time seeking information online and were happier. These results suggest that psychological traits served as strong motives for uncertainty-reducing behavior like active OIS.

Keywords Internet/WWW; quantitative; new media use

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The Internet has many functions, but it has increasingly become a platform to seek and share personal information. Although the nature of the Internet allows for selective self-presentation (Walther 2007), online environments such as social network sites (SNSs) and weblogs encourage users to honestly self-disclose to their friends about a range of personally relevant topics including one's job, personal life, and entertainment preferences (Tufekci 2008). Even though these users are concerned about the security of their personal information and are aware that self-disclosure could have consequences (Acquisti & Gross 2006), they still openly share personal information online.

This unobstructed flow of personal information allows for greater online information seeking (OIS) about others through SNSs, which may affect strategies for relationship management and interpersonal interaction (Antheunis *et al*. 2010). SNS users seek information from their friends to satisfy a variety of needs such as relationship formation, maintenance and social support,

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uncertainty reduction, and social influence. The term *friends* on SNSs can be misleading, however, because many of these ties are simply products of chance associations. Research suggests that up to 15 percent of Facebook networks comprised people who never actually met in person (Stefanone *et al*. 2008). For example, people may send friend requests to strangers because they have attractive profiles. Additionally, people who initially meet at social gatherings may become online friends and never see or talk to each other again. Considering the significant amount of personal data shared on SNSs, it has become important to examine who is accessing this information and the goals they seek to achieve.

One function of OIS may be uncertainty reduction. Gathering information about others enables us to better understand others we do not know and prepares us for future interactions. The Internet represents a face-saving avenue for uncertain or apprehensive communicators, as SNS users can obtain information about others without their awareness. As such, OIS may represent an effective method for gaining confidence about the world and future interactions. Individuals may use different OIS strategies, depending on personality characteristics, environmental factors, or their current relationship with a person of interest.

The goal of this study is to uncover the kinds of personality traits and social–environmental variables that prompt individuals to both connect to others and seek out personal information disclosed online by both existing friends and new acquaintances. This manuscript presents a study in which survey data are used to explore a range of individual traits and social variables linked to uncertainty-reducing OIS. The relationship between these traits, social network size, and psychological well-being is also explored. To our knowledge, this is the first study exploring the role *traits* (personality variables) and *states* (social network characteristics) play in explaining OIS. What follows is a review of literature on uncertainty reduction and information seeking via SNSs. This review frames the formal hypotheses presented herein.

Reducing uncertainty

Uncertainty reduction theory (URT; Berger & Calabrese 1975) provides a useful framework for understanding how personal information functions to reduce uncertainty in relationships. URT was originally proposed to explain how people manage uncertainty in initial interactions. For example, when two strangers meet, neither is quite sure of the other's likes, dislikes, and behaviors, and this may create anxiety. Uncertainty also exists in developed relationships (Berger 1995). The thoughts, feelings, and behaviors of our close friends and family can never be completely predicted. As relationships develop, they continue to change.

Uncertainty can be measured as both a state and a trait that can fetter relationship development. From time to time, all people experience uncertainty in their relationships. However, some people are generally more uncertain than

others. For example, people who exhibit high levels of global uncertainty are more reluctant to engage with others socially (Douglas 1991). It is not surprising then that interaction with uncertain people is often described as uninvolved, awkward, and unsatisfying.

People share a general motivation to mitigate uncertainty through information seeking (Berger & Calabrese 1975). Ramirez *et al*. (2002) succinctly define social information seeking as the procurement of information about other people. Of course, information-seeking behavior manifests in varied ways including passive, active, extractive, and interactive forms. Passive information seeking is characterized by unobtrusive observation of others. Active strategies involve collecting information from other people about a specific target. Extractive strategies are conceptually similar and involve gleaning information about others from sources observable in one's environment. Searching online databases is an example of an extractive form of information seeking. Finally, people can also seek information interactively by engaging in direct communication with the target. During these interactions, people make attempts to solicit information by asking questions, self-disclosing, or relaxing the target (Kellerman & Berger 1984). Lower transaction costs associated with computer-mediated communication (CMC) suggests that SNSs may provide a profitable avenue for gleaning information about others as these sites afford novel opportunities for acquiring a breadth of personal information available online.

More recently, Antheunis *et al*. (2010) used precisely this framework to examine SNS use based on uncertainty reduction, and the relationship between this behavior and social attraction. Their research drew connections between access to information about others and CMC theories, suggesting that interactive strategies had the strongest relationship with uncertainty reduction, while active and passive approaches did not contribute as much. Nonetheless, they found that *during initial interactions online*, people used each of these three strategies for uncertainty reduction regardless of the opportunity to capitalize on existing textual information online. However, this research did not address *antecedents* to OIS as an uncertainty-reducing behavior.

We propose that using SNSs as sources of idiosyncratic information about others is best characterized as active OIS. In this manuscript, 'active' information seeking is operationalized as a combination of the traditional passive, active, extractive, and interactive strategies reviewed earlier (Ramirez *et al*. 2002) because websites like Facebook facilitate all four types of behaviors. For example, when Facebook users post information about themselves online, anyone who is a member of their network can easily extract this data so that information about your Facebook friend's favorite movies, books, and music preferences is readily available and easily consumed. People also post public comments on their friend's profiles and reveal people's identities in photographs (i.e. tagging). Users regularly message each other directly (interactive).

Passive observation of others' online profiles is easily accomplished as well. These examples show how SNS users make information about themselves available online, which in turn creates opportunities for people to seek out this information to learn about them. These examples represent opportunities for the full spectrum of uncertainty-reducing behaviors.

Social network sites

SNSs are enormously popular tools that provide organized information about a person such as their hometown, favorite activities, entertainment preferences, and relationship status. The heart of an SNS is the personal profile page where users deliberately create and manage their identities. User profiles generally include demographic information, an 'about me' section, and a personal photograph. SNS profiles typically convey information across a range of topics and most users tend to post indicators of their real identity, such as their real name, birth date, and phone number (Tufekci 2008). SNSs are distinct from other forms of CMC in that they make people's friends visible to others, although many times users have not met these contacts face-to-face (F2F) and may rarely, if ever, interact with them. The confluence of unknown audiences and the availability of personal information attenuate our ability to regulate others' familiarity with us.

As a result, when we interact with others for the first time, uncertainty exists about their *prior* knowledge about us because SNSs do not track profile visitors. As SNSs become more popular and people invest more resources developing and maintaining comprehensive profiles (Felts 2007; Lenhart & Madden 2007), it is important to examine how information shared on these sites affects our interactions with others. The affordances of sites like Facebook.com are changing as to how we acquire information about others and may alter how we pursue social goals. However, little is known about which individual characteristics (traits) are associated with online uncertainty-reducing strategies such as information seeking, or how dynamic social contexts (states) shape this behavior. The following discussion explores the relationship between a set of relevant personality traits and uncertainty-reducing OIS.

Strategy selection

F2F, interactive strategies are often conceptualized as the most efficient means of uncertainty reduction; however, these strategies can be difficult for introverted or apprehensive people. Online, people may find that active information-seeking strategies are more effective because they involve less face time with the target and provide accurate information easily and quickly. Today, people can query

others' personal profiles directly for the information they desire. Thus, strategy selection is likely a function of people's traits, situation (states), and interpersonal goals.

First, trait-based explanations for human behavior should contribute to our understanding of uncertainty reduction because of the stability associated with people's dispositions. Humans differ from one another in a variety of important ways and the most widely studied dimension along which people vary is personality – 'the dynamic organization within the individual of those psychophysical systems that determine his unique adjustments to his environment' (sic., Allport 1937, p. 48). The dispositional approach to personality involves categorizing people according to the degree to which they demonstrate specific traits. In contrast to state-based variables, traits refer to dimensions of thinking, behaving or feeling that are consistent across situations and over time and thus should be a primary explanatory variable in terms of uncertainty reduction.

Uncertainty itself can be seen as a trait that influences strategy selection. Recall that although most people experience uncertainty in their relationships, some people are generally more uncertain than others. High global uncertainty is related to communication apprehension and anxiety, and these people are more reluctant to enter social situations (Douglas 1991). As a result, it is more difficult for these people to achieve interpersonal goals. For example, experimental research suggests that highly uncertain people have difficulty sustaining conversations over a four-minute period (Douglas 1991). This trait may affect interactions with both familiar and unknown individuals. However, pre-interaction information seeking – such as active information seeking via Facebook – may reduce uncertainty and increase confidence in anticipation of social exchange. Thus:

H1: Global uncertainty has a positive relationship with OIS about old friends (H1a) and new acquaintances (H1b) on Facebook.

People who are competent communicators are comfortable engaging with others and feel in control in social situations. Conversely, people with apprehension toward communication often feel nervous, awkward, and avoid social situations (McCroskey 1977). Therefore, it is likely that people who exhibit apprehension toward communication will be motivated to procure information about likely discussion partners to mitigate this anxiety. Thus:

H2: Communication apprehension has a positive relationship with OIS about old friends (H2a) and new acquaintances (H2b) on Facebook.

Machiavellianism is also relevant to active OIS because this trait is characterized by manipulative behavior and a low concern for others. People high in Machiavellianism are primarily motivated by their own needs or goals. Often, this comes at the

expense of others as they have a low concern for lying and cheating as a means to accomplishing their goals (Christie & Geis 1970). Considering that Machiavellian Facebook users are likely aware of the potential benefits of personal information available via people's profiles, these users should be more likely to identify online information as an asset and seek it out. Although this behavior may be manipulative, Machiavellian tendencies may also explain uncertainty-reducing behavior. Therefore, we predict:

H3: Machiavellianism has a positive relationship with OIS about old friends (H3a) and new acquaintances (H3b) on Facebook.

While it is likely that personality traits influence uncertainty-reducing OIS, it is also likely that *social context* could contribute toward explaining OIS (Lampe *et al.* 2006). We conceptualize social context as a state-level variable, evaluating the relative impact of traits and states on OIS while accounting for Facebook users' social environment. While the current research is primarily focused on OIS, the use of SNSs is fundamentally about interpersonal relationships. As SNSs provide a range of resources to the users, including information and social support, we will evaluate psychological well-being as a general outcome variable.

Social support

Like other social scientists, CMC researchers are increasingly framing their investigations in the context of social capital and the relationship between social capital and CMC (e.g. Williams 2006). Social capital can be an imprecise term, but it generally refers to 'the ability of actors to secure benefits by virtue of membership in social networks or other social structures' (Portes 1998, p. 6). Social support is one such form of capital (for a review, see Lin 1999).

The value and quality of mediated social support have emerged as important research subjects. While early research suggested possible negative effects of mediated relationships (i.e. social isolation; Kraut *et al.* 1998), Bargh and McKenna (2004) argue that CMC appears to have little direct impact on meaningful social interaction with close friends and family, and that time spent with these strong ties does not drop due to Internet use. Rather than substituting for offline social interaction, they point to evidence that CMC is actually used to help maintain broader networks (cf. Howard *et al.* 2001).

As the number of accessible close friends and family members (strong tie relationships characterized by frequent, reciprocal communication and emotional closeness) increases, so too does the amount of time and energy required to maintain these relationships. With large support networks, frequent communication characterized by personal and directed conversations would be a costly approach

to maintain relationships. Using information available on SNSs like Facebook could reduce this toll, as it would reduce the time required to gain new information about members of social networks. For example, SNS users can easily and quickly learn about their friends by scrolling through their status updates online.

Considering that online networks mirror traditional offline support networks (Marlow 2009), it is likely that the more close friends and family one has on sites like Facebook, the more time one will spend searching for information about these people to stay informed about these close ties.

H4a: Social support network size has a positive relationship with OIS about old friends.

People with access to such resources may be less motivated to pursue new friends and additional resources because they already have access to adequate social support and consequently are happier. There is strong support in the literature, suggesting that larger support networks are associated with heightened access to support resources, which improves one's psychological well-being (see Kraut *et al.* 2002). Thus:

H4b: Social support network size has a negative relationship with OIS about new acquaintances.

While the hypotheses above suggest that SNS size is associated with OIS about existing friends and new acquaintances, there is disagreement in the literature about the nature of the relationship between social support networks and well-being. For example, from a sociological perspective, research on social support tends to focus on an individual's social integration within social support networks (Cohen *et al*. 2001). However, much research on CMC and social support draws from the psychological perspective wherein *perceived* support takes precedence (e.g. Williams 2006).

In addition, two theoretical models – the main effect model and the buffering model – have been proposed to explain the relationship between social support and well-being. While the main effect model suggests social support benefits individuals independent of stressors, the buffering model argues the effects of social support on well-being are dependent on the levels of stress (Dunkel-Schetter & Bennett 1990). In the current study, we propose to explore the effect of social support network size, operationalized as the availability of support-based resources, on psychological well-being. This is consistent with the sociological perspective outlined above. We hypothesize that a direct measure of the size of support networks should exhibit a direct, positive relationship with psychological well-being. Thus:

H4c: Social support network size has a positive relationship with psychological well-being.

However, proximity of support networks might further complicate the story. While large support networks might be costly to maintain in terms of time required, the opportunity to communicate F2F with strong ties might influence OIS about new and existing friends in different ways. That is, having *local* support resources could enhance people's access to these resources and diminish their need to rely on technology to reduce uncertainty about these people. Thus:

H5a: Participants with larger local support networks spend less time OIS.

H5b: Participants with larger distant support networks spend more time OIS.

Albeit the evidence reviewed above regarding the impact of global uncertainty, communication apprehension, and Machiavellian tendencies on uncertainty-reducing OIS, the implications of these traits on one's psychological well-being is unclear. Over time, manipulative behavior may strain and spoil relationships. As a consequence, the availability of online social support resources may wane and people may suffer. For example, people who have smaller social support networks tend to report less psychological well-being in general (Cohen & Wills 1985). Alternatively, the gains reaped from manipulating others could outweigh the damage done to the relationships. Successfully exploiting others in the pursuit of instrumental goals (i.e. a promotion) might counteract negative social consequences. In this scenario, manipulative people may actually be psychologically better off. In light of these competing conjectures, we propose the following research question:

RQ1: What relationship do personality traits have with social support network size and psychological well-being?

Research has primarily focused on channels that individuals use to acquire information about others (Westerman 2008), but few studies have examined the frequency of OIS based on a range of trait- and state-based variables as described above, or revealed the circumstances under which some people come to rely more heavily on information about their friends available via SNSs like Facebook. Each of the traits outlined above is believed to motivate OIS about new and existing friends alike, but for different reasons. Global uncertainty and communication apprehension represent traits that limit individuals' social engagement in the world while Machiavellian tendencies are associated with potentially manipulative behavior. The goal of the current study is to test a series of hypotheses that will illuminate specific antecedents to OIS, as well as their impact on people's psychological well-being.

Method

Pilot study

Since the OIS measures used in this study are novel, a pilot study was conducted to explore the reliability of these measures, using a test–retest procedure. Participants voluntarily agreed to complete an online survey administered at two points in time. Forty-one undergraduates (20 female) received extra credit for their participation. At time 1, participants were directed to a URL to complete a survey about online communication. Approximately two weeks later, the same group of participants was directed to another URL to complete an additional survey. They were not told that the survey completed at time 2 also included all of the items from the time 1 survey.

The pilot survey measured participants' estimates of their social support network size and frequency of OIS about their old friends and new acquaintances. This included the number of times respondents had searched for information about these contacts as well as the time spent OIS (measured in hours and minutes). Pearson's correlation between time 1 and 2 estimates for support network size was 0.89 ($p < 0.001$) and all items measuring the frequency of OIS also had significant correlations in excess of $p < 0.05$.

Main study

To address the hypotheses and research questions outlined above, a new sample of 377 students enrolled in undergraduate communication courses at the University at Buffalo were recruited for an online survey. All participation was voluntary and the university Institutional Review Board for Human Subjects approved all materials. About 56 percent of the final sample were female; the average age of participants was 20.3 years (SD = 3.5). The majority of participants identified their ethnic background as Caucasian (approximately 72 percent). About 11 percent were Asian, 10 percent were African-American, and 2 percent were Hispanic. The rest (about 5 percent) identified with a variety of other ethnicities.

The sample was relatively evenly divided among classes (38.5 percent sophomore, 26.0 percent junior, 23.1 percent freshmen, 11.4 percent senior, and 1.1 percent other), with approximately one-third identified as transfer students (36.1 percent). Over 50 percent participants have lived in the region for more than five years and the rest were newcomers. About half of participants were also employed (51.5 percent), working on average 16.2 (SD = 12.0) hours per week. Approximately 90 percent of the participants were SNS users, with a majority indicating that they logged in to their Facebook account at least once per day (73.2 percent). Participants predominantly reported, using Facebook as a tool to search for information about their friends (88.7 percent).

Among the respondents who failed to fill out the questionnaire completely, most of the missing data occurred for variables that measured time OIS about old friends and new acquaintances. To explore whether there were systematic differences between those participants who completed the survey and those who did not, we conducted a series of mean comparison tests. The results of these tests show that there were no differences between these groups in terms of the trait- and state-level variables used in the current study.

Measurement

Global uncertainty was measured using seven Likert-type items (Douglas 1991) to assess participants' confidence in initial interactions. Questions such as 'How confident are you of your ability to predict how strangers will behave?' were measured on seven-point scales, where 1 = not confident at all and 7 = very confident. These items were assessed for reliability and condensed to create an uncertainty scale ($M = 30.83$; SD = 6.13; $\alpha = 0.87$), with higher scores representing greater uncertainty.

Communication apprehension was measured using 10 items from McCroskey's (1977) scale, with higher scores representing greater apprehension. Participants were asked questions such as 'I avoid talking with people I don't know very well', rated on seven-point scales. Based on exploratory factor analysis (Kaiser–Meyer–Olkin = 0.72; Bartlett's test: $\chi^2 = 728.50$, $p < 0.001$), four items that loaded together (eigenvalue = 2.79) were retained and condensed into a scale ($M = 16.06$; SD = 4.23; $\alpha = 0.75$).

Machiavellianism was assessed using 10 items (Christie & Geis 1970), with higher scores representing greater Machiavellianism. Participants were asked questions such as 'The best way to handle people is to tell them what they want to hear', rated on seven-point scales. Exploratory factor analysis (KMO = 0.69; Bartlett's test: $\chi^2 = 519.39$, $p < 0.001$) revealed six items that loaded together (eigenvalue = 2.49), which were condensed into a scale ($M = 16.31$; SD = 4.04; $\alpha = 0.71$).

OIS for both new acquaintances and old friends was assessed. New acquaintances were defined as people the respondent has casually met over the past year whom they had no romantic interest in. Old friends were defined as people who the respondent has known for a long time, has frequent interaction with, and has positive feelings toward. Since it is easier for participants to recall the time spent on OIS about old friends, we measured the hours and minutes they spent weekly getting information about these friends. The condensed measure (hours × 60 + minutes) indicated that on average, participants spent 117 minutes (SD = 158.52) searching for information about their old friends in a week. We used log transformation to correct for skewness in the distribution. OIS for new acquaintances was measured with two frequency items. We assessed the number of times that participants met and searched for information about

someone online and the frequency that they friended someone new on Facebook to learn more about that person. The act of friending people via SNSs was included as it reflects behavior enacted to gain access to online information. On average, participants reported to have searched information about new acquaintances 15 times (SD = 64.36) and friended someone new 12 times (SD = 35.43). We used square root transformation to correct for skewness and condensed these two items ($r = 0.92$; $p < 0.001$) to create a scale for OIS about new friends ($M = 5.83$; SD = 5.01).

Social support network size was measured with one item because research shows that people have the capacity to accurately identify others with whom they have frequent interaction (Freeman *et al*. 1987; Marsden 1990). We asked respondents to estimate the number of close friends they had. To avoid violating the normality assumption for subsequent analysis, two outlier responses were removed ($M = 6.44$; SD = 4.25; skewness = 1.23; kurtosis = 1.45), which is consistent with extant sociological research measuring people's typical 'interpersonal environment' (McPherson *et al*. 2006, p. 355). Participants were also asked to report the number of these strong ties who were also their Facebook friends. These two variables were significantly correlated ($r = 0.88$; $p < 0.001$), suggesting that they represented the same construct.

Social support network proximity was measured with two items inquiring about the number of their close friends who lived within or beyond 60 miles from them. We chose a 60-mile threshold because it represents the outer limit of a manageable travel time to visit with friends F2F. Responses ranged from 0 to 20 with a mean of 4.64 (SD = 3.72) for the local network and 2.59 (SD = 3.14) for the distant network. We used square root transformation to normalize both scales.

Psychological well-being was assessed with nine items that evaluated participants' general and social satisfaction (Diener *et al*. 1985). These items fared well together, so they were condensed to create a single variable ($M = 41.78$; SD = 7.90; $\alpha = 0.80$).

Analysis. We used LISREL 8.80 (Jöreskog & Sörbom 1996) for data analysis. LISREL provides tests of the adequacy of the path model, simultaneous estimation of all structural coefficients, and tests of statistical significance for all coefficients. The overall goal was to find a parsimonious path model that explained the data well (Kline 2005). The χ^2 goodness-of-fit statistic is reported as an index of model adequacy, where a non-significant value indicates good fit. We also report the root-mean-quare error of approximation (RMSEA), the comparative fit index (CFI), and the goodness-of-fit index (GFI), which demonstrate how well the specified model accounts for the data. RMSEA values less than 0.05 typically indicate good fit. For CFI and GFI (values ranging from 0.00 to 1.00), 0.90 and above is generally considered to represent good fit. Coefficients for the hypothesized structural relations are reported along with their statistical

significance. A probability level of $p < 0.05$ was used as the base level of statistical significance. Effective sample size for the data analysis with listwise deletion was 177.

Results

The assumption of multivariate normality for the path model was not violated (multivariate Kurtosis = 1.146). Table 1 presents descriptive statistics, including correlation coefficients in the upper triangle of the matrix, covariance coefficients in the lower triangle, and variances along the diagonal. The zero-order correlation matrix was generated in SPSS17.0.

Three separate models were specified to the data, examining how different trait- and state-based variables explained participants' OIS about new acquaintances and old friends, as well as how these variables together influenced their psychological well-being. Analysis of the overall model fit along with tests of individual paths indicated that we could improve the baseline models by deleting non-significant paths. Results of model fit indices are presented in Table 2. Overall, path analysis results indicated that trait-based variables exerted different influences on OIS about new and old friends, and participants' psychological well-being. Social support network size and distance demonstrated consistent relationships with OIS and psychological well-being.

Our first three hypotheses explored the relationships between personality traits and OIS. Specifically, we predicted that individuals who possessed higher global uncertainty (H1a), communication apprehension (H2a), and Machiavellian tendencies (H3a) would spend more time searching information about existing friends on Facebook. We found that communication apprehension was the only trait that significantly related to OIS about existing friends ($\beta = 0.19$; $t = 2.55$; $p < 0.05$), supporting H2a. Individuals who were more apprehensive about communication with others spent more time OIS about their old friends. Neither global uncertainty nor Machiavellianism demonstrated a relationship with OIS; H1a and H3a were not supported.

The next set of hypotheses stated that social support network size had a positive relationship with OIS about old friends (H4a). Indeed, participants with larger support networks spent more time searching information about these friends ($\beta = 0.21$, $t = 2.82$, $p < 0.01$), supporting H4a. With regard to H5a and H5b, both close (total effects: 0.12; $t = 2.79$; $p < 0.01$) and distant (total effects: 0.06; $t = 2.73$; $p < 0.01$) support network size had significant, positive relationships with OIS about old friends *indirectly* through support network size. Thus, these hypotheses were not supported.

For OIS about new acquaintances, different patterns emerged. Among the three personality traits, global uncertainty was the only one that positively related to OIS about new acquaintances ($\beta = 0.21$; $t = 2.94$; $p < 0.01$);

TABLE 1 Descriptive statistics.

Key variables	*OISEF*	*OISNF*	*SNSZ*	*SNSC*	*SNSF*	*SATIS*	*UNCER*	*MACHI*	*APPRE*
OIS Existing Friends (OISEF)	0.37	0.21*	0.17**	0.14*	0.14*	0.02	0.06	0.13*	0.08
OIS New Friends (OISNF)	0.03	23.10	0.16*	0.06	0.21**	0.03	0.20**	0.07	0.00
Support Network Size (SNSZ)	0.61	0.86	17.03	0.73**	0.50**	0.19**	0.14**	0.01	−0.10
Support Network Close (SNSC)	0.09	0.14	2.97	0.75	0.11*	0.19**	0.13*	−0.11*	−0.07
Support Network Far (SNSF)	0.07	0.09	1.96	0.04	3.43	−0.01	−0.04	0.10	−0.07
Satisfaction (SATIS)	0.14	0.27	8.18	1.50	0.59	62.00	0.20**	−0.22**	−0.17**
Uncertainty (UNCER)	0.13	1.20	1.11	0.24	0.13	−3.16	32.74	0.13*	0.09
Machiavellianism (MACHI)	0.17	0.11	−0.1.45	−0.56	0.30	−10.35	5.96	15.36	0.27**
Apprehension (APPRE)	0.55	0.06	−0.77	−0.20	−0.04	−4.65	3.07	7.22	18.25
M	1.86	5.83	6.44	1.95	1.25	41.78	30.84	16.31	16.06
SD	0.57	5.01	4.25	0.92	1.00	7.90	6.13	4.04	4.23

Note: Pearson's correlation coefficients are provided in the upper triangle of the matrix, variances are located on the diagonal, and covariances are reported in the lower triangle. Descriptive data are based on transformed scales used in path analysis.

*$p \leq 0.05$.

**$p \leq 0.01$.

TABLE 2 Summary of fit indicators.

Models	χ^2	*df*	*Pz*	χ^2/df	*RMSEA*	*GFI*	*CFI*
OIS about existing friends	7.53	8	0.48	1.26	0.00	0.99	1.00
OIS about new friends	17.47	15	0.29	1.22	0.03	0.98	0.99
OIS path model	23.70	18	0.16	1.32	0.043	0.97	0.98

support for H2b and H3b were not supported. Different from the negative relationship hypothesized between support network size and OIS about new acquaintances (H4b), path analyses indicated that this relationship was in the opposite direction. Participants with larger support networks were more likely to search and befriend new acquaintances on Facebook ($\beta = 0.22$; $t = 3.09$; $p < 0.01$). Similarly, both close (total effects: 0.16; $t = 3.06$; $p < 0.01$) and distant (total effects: 09; $t = 2.99$; $p < 0.01$) support network size had indirect, positive relationships with OIS about new acquaintances.

In the final model that examined OIS about existing friends and new acquaintances together, we identified similar relationships among the key variables. Social support network size demonstrated a positive relationship with well-being ($\beta = 0.21$; $t = 2.97$; $p < 0.01$), supporting H4c. However, with regard to RQ1, no relationship emerged between personality traits and support network size. Among the personality traits, Machiavellian tendencies ($\beta = -0.30$; $t = 4.27$; $p < 0.001$) was related to psychological well-being. That is, participants with high Machiavellian tendencies were less likely to feel satisfied about their lives. The final model accounted for 15 percent of the variance in general satisfaction and 76 percent of the variance in support network size. However, the model accounted for only 8 percent of the variance in information seeking about existing friends and 10 percent of the variance in information seeking about new acquaintances. Figure 1 represents the final path model with all variables.

Discussion

This research sought to provide a profile of people who engage in OIS by addressing both personality traits and social contexts as explanations for using popular SNSs for OIS about their friends. This exploratory study was conducted in response to the growing culture of openness and increasingly public displays of our digital selves. While people enthusiastically contribute to a growing corpus of personal and often intimate digital information about themselves and expect their friends to access this data, the traits and states underlying information seeking for different relationships remain unknown. The results presented here are a first step toward addressing individual variation in OIS.

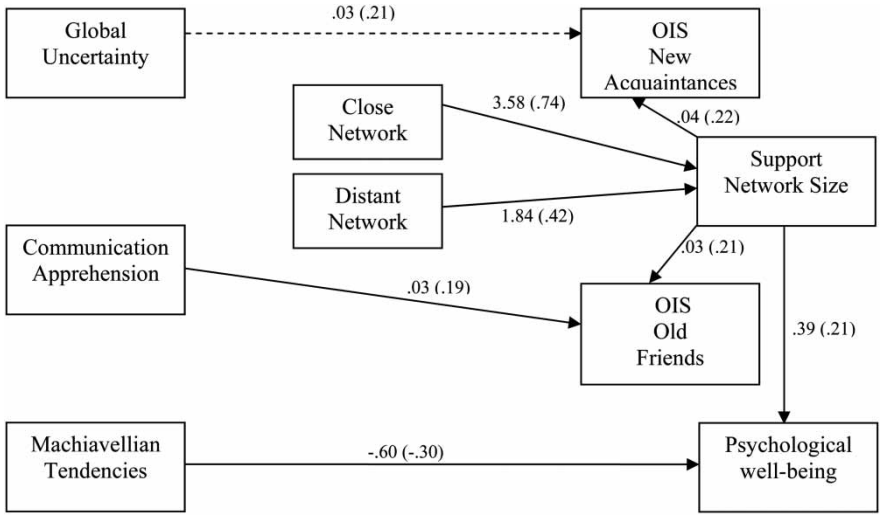

FIGURE 1 Results from the final model.

Note: Unstandardized estimates and (standardized solutions) from path analysis.

In support of this notion, results from this study show that both personality traits and social contexts influence participants' OIS and psychological well-being, but different patterns emerged for OIS about new acquaintances and old friends. To our knowledge, this is the first study that goes beyond demographic characteristics to identify people likely to seek information about others.

We began by hypothesizing that a series of personality traits, including global uncertainty, communication apprehension, and Machiavellianism, would have systematic relationships with uncertainty-reducing OIS. Each of these traits was believed to motivate OIS about new acquaintances and old friends alike, but for different reasons. Recall that global uncertainty and communication apprehension represent traits that limit individual's social engagement because of the anxiety associated with these traits. On the other hand, Machiavellian tendencies are associated with potentially manipulative behavior. By including all three traits, we attempt to address both benign and manipulative motivations for OIS.

Communication apprehension focuses on anxiety specifically in the context of social exchange. While no relationship emerged for new friends, communication apprehension was linked with OIS for more socially meaningful relationships in the form of existing friends. This trait was associated with the drive to procure information about close friends perhaps as an aid to facilitate everyday conversations. This may be in an effort to improve the quality of communication in their meaningful relationships.

It is rather surprising that global uncertainty and communication apprehension play unique roles in explaining uncertainty-reducing behavior like OIS. The

results of this study suggest that the nature of interpersonal relationships function as a mediating variable. We expected global uncertainty and Machiavellianism to correlate with the pursuit of information about others, but this relationship did not bear out in our data. These traits were included because they represented different motivations for procuring information about others, such as uncertainty about the greater world or concern for personal success. Considering that volume of personal and often intimate content about others available online, it is possible that some people strategically seek this information with the goal of manipulating others. However, this was not the case in our data.

However, communication apprehension only played a role in uncertainty-reducing behavior in the context of developed relationships. This kind of anxiety about social exchange results in information seeking for the purpose of aiding routine conversations with friends. More importantly, the results show how the unique characteristics of interpersonal relationships play a role in explaining uncertainty-reducing behavior.

It should be noted that while the final model performed well in explaining network size and well-being, there was limited success in explaining the core behavior in this study: OIS about new and old friends. Although the literature pointed to global uncertainty, communication apprehension, and Machiavellianism as strong candidates, clearly there is much more that can be explained with respect to OIS beyond the selection of trait-level variables included in the present study. Future research would benefit by continuing to explore how different characteristics of interpersonal relationships may enhance our understanding of URT and OIS. For example, the nature of OIS may be contingent on whether the targets are former or current romantic interests, former friends, or online-only connections.

The personality traits measured in this research may also affect both the development of social support networks and psychological well-being. As the theoretical backing for these relationships was less clear, the current study posed research questions to address these issues. First, none of the traits used in this study correlated with social support network size. On the other hand, Machiavellian tendencies exhibited a direct negative relationship with psychological well-being. People who possessed a penchant for manipulative behavior reported being less happy. These relationships are not surprising considering that uneasy communication likely stifles relationship maintenance. Those with manipulative tendencies may also find themselves less content about life in general, even if this dissatisfaction does not result from the lack of social support *per se*.

We also predicted that larger social support networks would serve to increase OIS efforts, as the cost of maintaining large support networks F2F can be high. The data confirmed this hypothesis as a significant path existed between support network size and OIS for both new acquaintances and old friends, supporting the notion that people with larger networks use Facebook as a tool to acquire information about their friends. The key premise of this

study was that OIS serves uncertainty reduction functions and college students are one population that find themselves in many novel situations laden with uncertainty. Many students move away from family and close friends to attend college, which may lead to a reliance on online tools for communication. Thus, we also tested the effects of local and remote social support resources on OIS. Specifically, people who live in proximity to support networks of family and close friends were expected to spend less time online gathering information because they benefit from enhanced opportunity for F2F interaction. Only an indirect relationship was apparent between network proximity and the OIS variables. However, it is interesting to note that both network proximity variables had positive relationships with support network size, and exert some indirect influence, albeit minimal, on OIS about new and existing friends. In particular, this relationship was stronger among those with larger local support networks. Local support network size also had stronger total effects on general satisfaction. Perhaps people with closer support networks were more likely to gain immediate attention and help from others when there was a need. These results also attest to the validity of the measure for support network size. More importantly, they show that state-based variables like people's social environment play an important role in shaping OIS behavior. Social context also weighs on general satisfaction, as expected. Thus, support network size outperformed trait-based variables and OIS behaviors in accounting for the variance in general satisfaction in this analysis.

Now that we have begun to examine *who* engages in OIS, future research should be conducted to examine *how* this information is used. Although individuals may have altruistic goals for obtaining personal information about others (e.g. increasing competence), it is possible that OIS could be used to influence others and benefit oneself. For example, online information about others may lead to strategic advantages that can be used to manipulate others. Access to SNS profiles could allow a person to feign 'similarities' that may appear coincidental, but are actually manufactured to increase liking and win influence (Burger *et al*. 2004). Benefiters may also use gained information to form conversational probes, which can structure the conversation and result in higher degrees of liking (Hancock *et al*. 2008). This is clearly a strategic approach to creating perceived similarity, which in turn is associated with liking and ultimately correlates with greater compliance to requests. Future research would benefit from addressing this kind of behavior, as well.

Research should also examine the effect of OIS on traditional interpersonal processes such as reciprocity and equity in relationships. Equity theory suggests that people strive for some sense of 'fairness' in relationships (Walster *et al*. 1973); however, the act of OIS provides an informational advantage for the seeker. When provided an advantage, people will seek and use information about others in conversation with them (Hancock *et al*. 2008), but it is unknown if these benefiters will reciprocate with similar information about

themselves. Revealing that you have accessed your friend's information may violate the norms of social equity, making the conversation awkward (Waslter *et al*. 1973). How does information asymmetry affect the reciprocal nature of information exchange? These processes are likely dependent on the person's motivation for engaging in OIS.

Even though fit indices from the structural equation model (SEM) suggest that the path model offered the best fit for the data in its current form, we would hesitate from drawing conclusive remarks about the specific directions of the relationships among key variables. In addition, the current research is limited to information seeking in the context of new and existing relationships. These are coarse classifications of interpersonal relationships, and future research should explore how a range of other types of relationships, including former friends or romantic partners.

In addition, the results of this study are limited to a fairly homogeneous student sample. Although young people are the most intense users of social media and SNSs, additional research is needed to explore the relationships between these variables in more diverse populations. Perhaps the effects of Machiavellianism and global uncertainty would emerge in analyses of increasingly heterogeneous samples. Finally, there was a large amount of missing data. Fatigue may have played a role here as we were not able to find any systematic differences between those who completed the survey and those who did not. Regardless, this study highlights the importance of exploring the motivations for and outcomes of active OIS as an uncertainty reduction strategy that people adopt to manage their relationships and presents new opportunities in this regard.

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