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Increasing Attributional Certainty via Social Media: Learning About Others One Bit at a Time*

Caleb T. Carr

School of Communication, at Illinois State University, Campus Box 4480, 453 Fell Hall, Normal, IL 61761-4480 USA

Joseph B. Walther

Center for Advanced Studies in International Development, Michigan State University, 404 Wilson Road, Rm. 472, East Lansing, MI 48824 USA

This study presents a novel examination of changes in attributions about individuals via information obtained from online sources within the context of hiring decisions. An experiment had 127 participants examine dossiers collected about a job applicant, in some conditions containing either positively or negatively valenced information about the applicant, obtained from the Internet. Results indicated online information significantly increases attributional certainty and positively valenced online information led to more favorable impressions of the applicant's perceived fit and employability. Surprisingly, results also violate assumptions of the increased magnitude of attributions due to negative information. Findings are discussed with respect to uncertainty reduction strategies, the negativity effect of online information, and implications for job seekers and employers.

Key words: online information, attributional certainty, uncertainty reduction, hiring decision, information seeking, social media.

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Given the growing prominence and ubiquity of access to and information on the Internet, one area of interest to computer-mediated communication (CMC) scholars is how information found online is used to form impressions of another person. Significant research has explored the process of online impression formation, including how individuals virtually signal real-world attributes (Ellison, Hancock, & Toma, 2012) and how cues generated by others or computer systems themselves are integrated into interpersonal attributions (Tong, Van Der Heide, Langwell, & Walther, 2008). Although research has enhanced our understanding of what and how impressions are formed with online information, we know relatively little about the certainty of those impressions.

Unfortunately, CMC theories have been hard-pressed to conceptualize the cognitive aspect of interpersonal attributions (Lee, 2001). Previously, Walther et al. (2011), noted new phenomenon may be effectively conceptualized by applying older concepts to help frame them in a way that can be

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understood and applied. This research used uncertainty reduction theory (URT; Berger & Calabrese, 1975) to help understand the effect of online information on attributional certainty. A traditional communicative theory addressing how individuals meet and learn about each other, URT is an appropriate lens to understand the new and emerging phenomenon of how individuals learn about each other using information archived online without direct interaction with a potential relational partner. Moreover, this research applies URT and online information seeking utilizing the context of applicant hiring to understand the influence of online information on attributional certainty and to expand the applicability of URT findings into new relational contexts.

Uncertainty Reduction Theory and Strategies

Berger and Calabrese (1975) forwarded URT as a theoretical mechanism to explain how individuals obtain and process information about their environment, and specifically their interpersonal relationships, to reduce uncertainty. Anticipating the processes and outcomes of a communicative exchange with a target individual in a zero-history relationship is challenging (Berger, 1987), but increased attributional certainty allows individuals to better-predict subsequent communication and increase interpersonal attraction toward their communication partner (Berger, 1979). To reduce uncertainty about the target individual and the interaction, individuals strategically select among several information-seeking strategies.

Three strategies were initially forwarded through which an individual could obtain information about a target individual: Interactive, active, and passive information seeking (Berger, 1987). Interactive information seeking entails direct communication with and feedback from the target individual, such as a conversation with the target. Active information seeking involves discussing a target with a second party who is familiar with the target individual (e.g., asking a mutual acquaintance about the target) or modifying the target's environment to assess reactions to novel environmental stimuli. Finally, passive information seeking involves observation of a target by watching the target interact with others at a social gathering. Interactive, active, and passive strategies have long-been supported empirically as communicative means of uncertainty reduction and thereby increasing confidence in one's attributions of a target (e.g., Clatterbuck, 1979; Douglas, 1990), but the traditional strategies are limited in that all suggest collocation or mediated communicative opportunity between perceiver and target. Given the increasing amount of information available online and ability to learn about geographically distant others, Ramirez, Walther, Burgoon, and Sunnafrank (2002) forwarded a fourth uncertainty reduction strategy to account for technological advances and affordances enabled by CMC, a strategy they labeled *extractive information seeking*.

Extractive Information Seeking

Extractive information seeking, "draws upon a vast storehouse of written comments generated by targets," (Ramirez et al., 2002, p. 220) from electronic archives. The strategy was put forth to accommodate a new means of obtaining information about a potential interactant—the Internet. Individuals seeking to learn more about a target can now take advantage of algorithms and search engines to seek information about a target via the increasingly indexed and searchable Web, including news archives and public records. Of online information storehouses, social network sites (SNSs; e.g., Facebook, LinkedIn) are particularly rife with uncertainty-reducing information as users often populate sites with personal information, including demographic information, personal beliefs, calendars and events, acquaintances, and photographs (Lampe, Ellison, & Steinfield, 2007), often detailing several years of the user's life across multiple social contexts. Given their richness of information about individuals, one would presume social media could be a boon for those seeking to reduce uncertainty regarding a relational partner; and some reports indicate they are. Potential dates (Gibbs, Ellison, & Lai, 2011) and employers

(Preston, 2011) alike scour the Internet before early face-to-face meetings, seeking information about their respective suitor and job applicant.

Though uncertainty-reducing information is abundant in SNSs, survey results conflict whether they are used for that purpose. Joinson (2008) found individuals frequently visit Facebook to engage in social investigation, using the site to learn more about targets met both online and offline. However, Utz (2010) found SNSs are more frequently used to seek information about current acquaintances than strangers. Questions therefore remain whether the relatively untested strategy of extractive information-seeking is less effective than traditional strategies or if online tools are just not used for uncertainty-reduction.

The few studies addressing extractive information strategies have not rigorously tested the incremental effect of information obtained from online sources on resultant impressions or relationships. Westerman and Tamborini (2008) tested information obtained through synchronous online chats as compared to face-to-face (FtF) discussions revealing that while initial uncertainty was higher in mediated dyads, uncertainty reduction progressed at comparable levels between media over the course of interactions. However, Westerman and Tamborini's results do not speak directly to the effect of extracted information, which may be retrieved either separate from or to supplement information from other uncertainty reduction strategies. Antheunis, Valkenburg, and Peter (2010) better-reflected extractive information seeking, finding individuals sometimes examine relational partners' profile data to guide subsequent interactions, but their findings are complicated by the use of existent (albeit recent) relationship partners, and does less to illuminate uncertainty reduction processes occurring in initial interactions. Given this paucity of direct tests, it is important to initially and empirically assess the effects of extractive information seeking on attributional certainty and perceptions of others.

Testing Extractive Information

Attributional certainty from extracted information.

Extractive information seeking seems particular *apropos* for zero-history interactions. Information obtained while anticipating interaction with a target exerts a strong influence on a perceiver's judgments about a target (Douglas, 1985). Online databases and search engines allow an individual to scour the Internet to obtain information before an initial meeting with an interaction partner, and search results can significantly influence preinteraction attitudes (Gibbs et al., 2011). Information obtained via extractive strategies may reflect a novel form of information as compared to information obtained via interactive, active, or passive strategies; but ultimately should be expected to have similar effects on attributional certainty, particularly before initial interactions. Consequently, an initial prediction hypothesizes individuals exposed to online information about a target use that extracted data to increase their attributional certainty of the target:

> H1: Information extracted from online sources about a target individual increases attributional certainty toward the target individual.

The first and second axiom of URT predict greater levels of communication lead to reduced levels of uncertainty (Berger & Calabrese, 1975), suggesting all information is an anathema to uncertainty (Clatterbuck, 1979) and reflected in the first hypothesis. However, not all information is equal, and dissimilar information may reduce uncertainty equally. Subsequent work (e.g., Sunnafrank, 1986) has indicated the valence of obtained information affects perceptions of and affinity toward the target individual. It therefore is of interest to determine the potentially varied effects of positively and negatively valenced extracted information on attributions of an individual, which guides an initial research question::

RQ: Are there differences in the uncertainty reduction resulting from positively valenced online information and negatively valenced information online?

Attributions from extracted information

Online information is expected to also have attributional effects on one's perceptions of the target individual. As the valence of information correlates with the valence of attributions about the individual (Sunnafrank, 1986), it could readily be hypothesized the positivirty of extracted information is correlated with the positivity of impressions formed. However, not all information is created equal, and negative information may be expected to have a stronger effect on attributions.

Negative-positive asymmetry. Succinctly put, "Bad is stronger than good" (Baumeister, Bratslavsky, & Finkenauer, 2001, p. 323). The negativity effect has been defined as the, "greater impact of evaluative negative than of equally intense positive stimuli on a subject" (Peeters & Czapinski, 1990, p. 33), suggesting individuals weigh negative information more heavily than positive information when forming an overall impression of a target individual. Though demonstrable, positivity effects, "have been found to be less pronounced, less reliable, and less replicable" (Peeters & Czapinski, 1990, p. 34) than the effects of negatively valenced information. The asymmetric weighting of negative information in impression formation has been substantiated in a bevy of contexts, including consumer attitudes toward products (Kroloff, 1988), initial and extant relationships (Kellermann, 1984), and hiring decisions (Bolster & Springbett, 1961). Though positive and negative information may respectively enhance or degrade one's impression of a target, they may not do so equally.

Negative extracted information. One challenge to the effect of negative information obtained via traditional information-seeking strategies has been the lack of naturalness of negative information disclosures in developing relationships. Although individuals in established relationships may inevitably learn negative information about relational partners (Kellermann, 1984; Planalp, Rutherford, & Honeycutt, 1988), early in relationships individuals are most likely to strategically make available positively valenced information to foster positive initial perceptions and attributions. Potential romantic partners (Toma, Hancock, & Ellison, 2008) and job-seekers (Posthuma, Morgenson, & Campion, 2002) have both been shown to selectively present (even to the point of misrepresentation) positive attributes to foster positive perceptions of key relational partners.

However, the Internet may uniquely and naturally reveal both positively and negatively valenced information about an individual for two reasons. First, individuals are more likely to present negative information online than face-to-face as CMC can reduce concern for reprisal of disclosures such as immediate disapproval from friends or family (Bargh, McKenna, & Fitzsimons, 2002). Second, individuals are less likely to self-monitor their self presentation across multiple contexts (Berger & Douglas, 1981). Particularly in the network-spanning channels such as social media (Marwick & boyd, 2011), individuals may be less likely (or able) to monitor their self-presentation online than offline, fostering negative information.

Studies into the effect of online content on the evaluation of job candidates indicate hiring managers evaluate candidates based on SNS profiles (Bohnert & Ross, 2010; Kluemper, Rosen, & Mossholder, 2012), providing indirect support for negative attributions from online information. Finding employers are less likely to hire and (were they offered a job) offer lower starting salaries to an applicant whose social network site profile photograph emphasized drinking alcohol than an applicant whose profile photograph was personally or professionally oriented, Bohnert and Ross (2010) concluded reduced perceptions of applicant fit and organizationally consistent characteristics led to the applicants emphasizing

alcohol receiving fewer job offers and for lower starting salaries. A complimentary or alternate explanation to these findings may be that the conditions emphasizing alcohol were perceived as presenting negative information given social stigmas associated with excessive alcohol consumption.

Given these considerations, extractive information seeking provides a naturalistic means for assessing the relative effects of both positively and negatively valenced information on interpersonal attributions of a target individual. Guided by findings from organizational communication and marketing scholarship, extracted information should have a direct effect on the positivity of impressions consistent with the valence of the information. Though individuals may perceive disclosing negative information online mitigates potential interpersonal reprisal (Bargh et al., 2002), results into perceptual effects suggest the cognitive and heuristic processes associated with the negativity effect persist online (D'Angelo & Van Der Heide, in press). Though both positive and negative information should influence attributions of a target individual, the negativity effect suggests perceptual effects should manifest in two ways. Therefore, positively valenced information should increase a perceiver's attributions of a target individual.

H2: Perceptions of a target individual are more favorable when perceivers are exposed to positively valenced online information than when perceivers are exposed to negatively valenced online information.

However, given the negativity effect and its predicted relative strength of negative cues on attributions, the attributional effect of valenced information is not expected to be linear in relation to the positivity or negativity of the extracted information. A negative datum obtained about a target individual should have stronger effects on a perceiver's attributions of the target than a positive datum as compared to a common baseline. Therefore, in addition to H2's prediction regarding the directionality of attributions, we further predict differences in the strengths of attributions guided by valenced information.

H3: The negative effect on perceptions of a target individual stemming from exposure to negatively valenced online information is greater than the positive effect on perceptions when perceivers are exposed to positively valenced online information.

Method

To experimentally test the effect of online information on relational uncertainty and attributions of a target individual, this research used the relational context of selecting a job applicant. Applicant selection can by conceptualized as an uncertainty reduction process between the organization's human resource representative (i.e., "recruiter") and the individual applying for the job (i.e., "applicant"), whereby the recruiter seeks information about the applicant to assess the applicant's potential performance were he or she to be hired into the available position. The selection and hiring of a new employee — particularly for entry-level positions — is typically a complex process of uncertainty reduction in a zero-history relationship highly contingent upon the organization, work environment, and idiosyncrasies of recruiters and job applicants (Eder & Harris, 1999). In addition to being an appropriate relational context to explore uncertainty reduction, hiring a job applicant affords a naturalistic opportunity to assess valenced information as employers are increasingly supplementing their impression formation processes with online information that is likely more reflective of applicants' actual selves than the idealized self obtained via traditional uncertainty reduction strategies (Carr, Klautke, Miller, & Walther, 2010). Consequently, conducting this research in the context of applicant evaluation provides a naturalistic setting for encountering both positive and negative online information about an individual.

Participants

Two populations were utilized for this study, resulting in a total of 128 participants. First, 83 participants were recruited from Master's of Business Administration (MBA) courses at nine U.S. universities. College students, particularly MBA students, are excellent proxies for research reflecting attitudes, values, and beliefs of the present workforce (Gordon, Slade, & Schmitt, 1986). Moreover, many MBA students have experience working in human resources within organizations (Dreher & Ryan, 2004), and current coursework reflects emergent trends in human resource policies and practices. Having completed initial data collection from MBA programs, a second convenience sample of 45 undergraduate students from various majors at a large, Midwestern U.S. university was used to supplement the MBA sample.

In all, 71 females and 57 males participated in the study, and were an average of 25.15 ($SD = 5.51$) years of age. A series of *t*-tests were conducted to test for differences in variables of interest between the MBA and undergraduate samples. Finding no differences except for years of experience working in human resources, the samples were collapsed for further analysis.

Procedure

Participants were contacted under the auspice that the career service office of a large university was requesting help assessing graduates' job readiness. Participants were asked to evaluate a graduating management senior's job readiness for an entry-level management position. To this end, the career service office had requested information regarding work and education history directly from the graduate, and in some cases sought to develop a more complete perspective of the graduate by seeking publicly available online information. Participants were told that all relevant information had been consolidated into a single packet of information of potential interest to recruiters. Across all conditions, dossiers contained identical cover letters, resumes, and completed job applications for an entry-level job with a large, national company, as well as the survey instrument. A prototypical college management graduate's resume and cover letter were obtained from the university's career services and served as a model for the applicant's cover letter, resume, and application. Information in the resume, application and cover letter were held consistent both internally (across experimental conditions) and externally (reflective of typical experiences and information provided by graduating, job-seeking management students). In the control condition, these three sources of information were all that participants received. Participants were given as much time as they needed to evaluate the job applicant given the information provided. Upon completing their study, participants returned all items (stimuli and measures) to the researcher.

Experimental Manipulation

Two experimental conditions provided supplemental information beyond the cover letter, resume, and application provided in the dossiers. Participants in the randomly-assigned treatment conditions were provided with a printed copy of the applicant's SNS profile, isolating a recent wall post (a forum visible to the user's SNS network) addressing either positively or negatively valenced posts about a recent presentation at work. Care was maintained to indicate the stimuli was drawn directly from Facebook by the career service office, and the stimuli material was created by altering the HTML code of an actual Facebook profile to carefully construct a natural and apparently valid stimuli material (see Figure 1). The profile's appearance, as well as the approximate length of the post, was held constant across conditions. Only the valence of the message in the wall post was altered to reflect the manipulated condition.

To manipulate the valence of information, the wall post reflected either a positive or negative experience at work. In the *positively valenced* condition, the wall post read either "I had an awesome meeting today! The boss was really pleased with how well I'd forecasted our inventory needs and how I'd managed to keep extra stock low. Afterward, the boss told me I really knew my job and I was thinking like

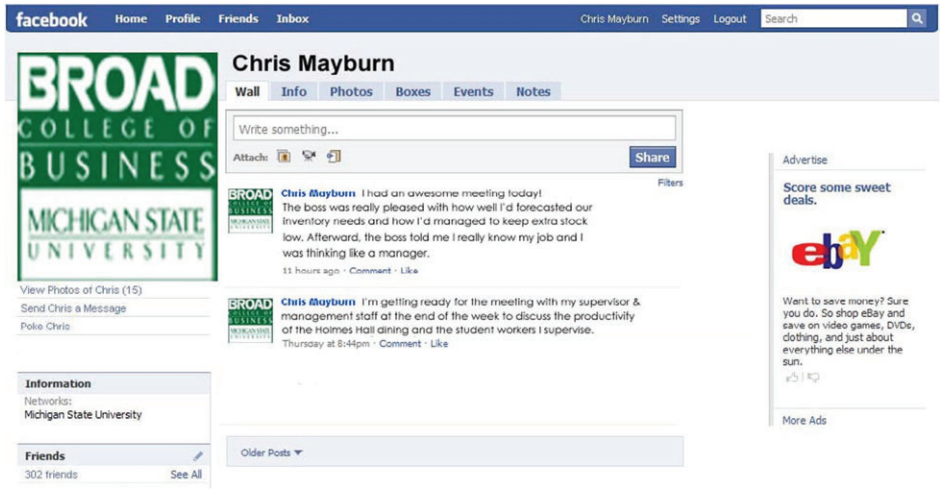

Figure 1 Stimuli material displaying positively-valenced applicant information

a manager," or "I had an awesome meeting today! The boss told me he sees me as a good person and that I've related with my work team well. Afterward, the boss told me my personality was fitting into the groups' and I was interacting like a team player." In the *negatively valenced* condition, the wall post read either, "I had an awful meeting today! The boss was really upset with how poorly I'd forecasted our inventory needs and how I'd managed to keep a lot of extra stock. Afterward, the boss told me I didn't know my job and I wasn't thinking like a manager," or, "I had an awful meeting today! The boss told me he sees me as a bad person and that I've related with my work team poorly. Afterward, the boss told me my personality wasn't fitting into the groups' and I wasn't interacting like a team player."

Dependent Measures

Attributional certainty. Following previous uncertainty reduction research (e.g., Douglas, 1990; Tidwell & Walther, 2002), postevaluation uncertainty was recorded using Clatterbuck's (1979) 7-item CL7 global uncertainty measure. Items asked participants to indicate "How confident are you of your general ability to predict how well he/she will behave," "How accurate are you at predicting his/her attitudes," and "How well do you know him/her?" on a scale ranging from *complete uncertainty* (0%) to *complete certainty* (100%). Low-scale responses indicate greater general uncertainty about a target while high-scale responses indicate greater confidence in knowledge about the target and ability to predict the target's behaviors. Responses to the CL7 were reliable, Cronbach's $\alpha = .88$.

*Applicant attributions***.** The second hypothesis makes predictions about perceptions of applicants. Two attributions seem particularly salient within the context of hiring an individual: Person-Job (PJ) fit and employability. *Person-job fit* refers to the individual's ability to complete specific job tasks, and is typically considered as the congruence between an individual's knowledge, skills, and abilities (KSAs) and the KSAs required for a particular job (Edwards, 1991). Three items from Cable and Judge (1996) assessed the employer's perception of PJ fit, operationalized as the prior knowledge, skills, and abilities possessed by the applicant that could be applied to the job position for which the individual was being considered. Respondents rated their agreement with the statements, "The applicant's abilities and training are a good fit with the requirements of this job," "This applicant's personal abilities and education provide a good match with the demands that this job would place on them," and "This applicants' job

performance would be hurt by a lack of expertise on the job," on a 5-point Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (5). The last item was reverse coded. The scale demonstrated acceptable reliability ($\alpha = .73$), and was used to assess perceived PJ fit.

The second attribution of interest is the target's *employability*: How capable the applicant is at obtaining employment in general—even if it not the specific position to which the applicant is applying. Particularly given the context under observation, the applicant desires to be considered—and ultimately hired—for the job, making perceived employability of the applicant a practical and important attribution within the context of hiring. Four items were drawn from Adkins, Russell, and Werbel's (1994) employability scale to assess employability. Responses to items were provided on a Likert-type scale ranging from *low employability* (1) to *high employability* (7). Items included, "Given your overall impression of this candidate, how 'employable' do you think Chris Mayburn is (i.e., how likely do you think this candidate is to receive other job offers)?" and, "Regardless of the candidate's qualifications, how likable is Chris Mayburn?" and demonstrated good reliability, $\alpha = .89$.

Analysis

Hypothesis 1

The first hypothesis predicts individuals presented with online information about a target have more attributional certainty about a target than when no online information is present. Contrast analysis was used to test this hypothesis since this method is appropriate for planned comparisons between groups (Rosenthal & Rosnow, 1985). Contrasts were assigned to reflect the predicted directional increase in attributional certainty in experimental conditions. Each of the two experimental conditions was assigned a contrast coefficient of +1 to reflect greater attributional certainty, while the control condition was assigned a contrast coefficient of -2, comprising an orthogonal test. Using the CL7 scale as a dependent variable, the contrast test supported the predicted differences in *general certainty*, $t\ (125) = 1.725$, $p < .05$ (1-tailed), $d = .43$, $r = .21$. Experimental conditions where subjects viewed online information produced more certainty ($M = 57.25$, $SD = 18.76$) than the control condition where subjects only viewed an applicant's cover letter, application, and resume ($M = 49.27$, $SD = 17.97$). Attributional certainty was statistically greater when online information was presented in addition to a cover letter, application, and resume, supporting H1.

Research Question

The research question inquires into differences in attributional certainty between conditions where participants viewed positively valenced online information and negatively valenced online information. To address this research question, a series of *t*-tests were conducted to compare attributional certainty between conditions. First, a *t*-test revealed attributional certainty was significantly greater in the positively-valenced online information condition ($M = 59.49$, $SD = 18.21$) than in the control condition ($M = 49.27$, $SD = 17.97$), $t\ (70) = -2.106$, $p < .05$ (2-tailed), $d = .56$, $r = 21$. Next, a *t*-test revealed attributional certainty was not significantly different between the negatively valenced online information condition ($M = 55.12$, $SD = 19.47$) and the control condition ($M = 49.27$, $SD = 17.97$), $t\ (73) = -1.153$, $p = .25$ (2-tailed), $d = .31$, $r = .15$. Finally, a *t*-test revealed attributional certainty was not significantly different between the positively valenced online information condition ($M = 59.49$, $SD = 18.21$) than the negatively valenced online information condition ($M = 55.12$, $SD = 19.47$), $t\ (107) = 1.208$, $p = .23$ (2-tailed), $d = .21$, $r = .12$. These means are presented in Table 1.

Taken together, these results indicate differences in attributional certainty identified in the analysis of H1 were primarily a result of perceptions in the positively valenced online information condition.

Table 1 Applicant perceptions based on positivity of online information exposure

	Positivity of Extracted Information		
	Positive	Control	Negative
Attributional Certainty	59.49[a] (18.21)	49.27[a] (17.97)	55.12 (19.47)
Person-Job Fit	3.55[b] (.59)	3.37 (.54)	3.24[b] (.65)
Employability	4.68[c] (.87)	4.42[d] (.91)	3.79[c,d] (1.09)

Notes: Standard deviations are in parentheses; conditions with the same subscript are statistically different at the $p \leq .05$ level.

Attributional certainty was significantly greater in the positively valenced online information condition than in the control condition; yet attributional certainty was not different between the negatively valenced and control conditions, nor were there significant differences between positively and negatively valenced conditions. Consequently, positively valenced online information may exert the most influence on attributional certainty.

Hypothesis 2

The second hypothesis predicts perceivers presented with negativelyvalenced online information report more negative perceptions of a target than perceivers presented with positively-valenced online information about the target. A multivariate analysis of variance (MANOVA) was used to test the between positive- and negative-valenced conditions in participants' perceived PJ fit and employability of the target individual. The multivariate main effect for information valence was supported, Wilks' $\lambda = .83$, $F\ (2, 106) = 10.895$, $p < .001$, $\eta^2 = .06$. Participants perceived greater *PJ fit* when exposed to positive extracted information ($M = 3.55$, $SD = .59$) than participants exposed to negative extracted information ($M = 3.24$, $SD = .65$), $F(2, 107) = 6.456$, $p = .012$, $R^2 = .057$. Participants also perceived the applicant as more *employable* when exposed to positive information ($M = 4.684$, $SD = .870$) than negative extracted information ($M = 3.794$, $SD = 1.090$), $F\ (2, 107) = 21.991$, $p < .001$, $R^2 = .170$. Given the significant effects in the expected directions, H2 was supported.

Hypothesis 3

The third hypothesis predicts differences in the relative effects of valenced information, so that negatively valenced information results in greater attributional effects from a baseline measure than positively valenced information. To begin to test this hypothesis, t-tests were used to assess differences in perceptions of an applicant's fit between the control condition and each experimental condition. Next, the effect sizes (*r*s) of these results were transformed into Fisher *z*' scores using an online statistic calculator (Preacher, 2002) to compute a Fisher's *r*-to-*z*' transformation. Finally a *z*-test was used to assess differences in the strength of effects between positive and negative information.

The first set of tests assessed the relative effects of negative and positive information on perception of *PJ fit*. The first *t*-test revealed perceptions of PJ fit were not significantly different when participants were presented positively valenced online information ($M = 3.547$, $SD = .588$) than no online information ($M = 3.368$, $SD = .543$), $t_{PJ1}\ (70) = 1.158$, $p = .251$, $r = .137$, $z'_{PJ1} = .138$. A second *t*-test similarly revealed no statistically significant difference in perceptions of PJ fit when participants were presented with negatively valenced online information ($M = 3.244$, $SD = .652$) than no online information, $t_{PJ2}\ (73) = .746$, $p = .458$, $r = .087$, $z'_{PJ2} = .087$. A *z*-test revealed effects of negatively-valenced information were

not statistically greater than effects of positively valenced online information on participants' perceptions of an applicant's PJ fit, $z_{PJ} = .297$, $p_{PJ} = .766$, 2-tailed.

The second set of tests assessed the relative effects of negative and positive information on perceived *employability*. The first *t*-test revealed perceptions of employability were not significantly different when participants were presented positively valenced online information ($M = 4.68$, $SD = .87$) than no online information ($M = 4.42$, $SD = .91$), $t_{employability1}$ (70) = 1.118, $p = .267$, $r = .13$, $z'_{employability1} = .13$. However, a second *t*-test revealed statistically lower perceptions of employability when participants were presented with negatively valenced online information ($M = 4.42$, $SD = .91$) than no online information, $t_{employability\ 2}$ (73) = 2.25, $p = .027$, $r = .25$, $z'_{employability2} = .26$. A *z*-test revealed effects of negatively valenced information were not statistically greater than effects of positively valenced online information on participants' perceptions of an applicant's PJ fit, $z_{employability} = -.75$, $p_{employability} = .46$, 2-tailed. Taken together, the effects of negative information were not significantly different from the effects of positive online information on both perceptions of person-job fit and employability. Thus, H3 was not supported.

Discussion

This study experimentally assessed the uncertainty reduction value of information obtained from online sources. Its findings reinforce previous tacit examinations of extractive strategies (e.g., Antheunis et al., 2010; Westerman & Tamborini, 2008) and serve as an initial direct empirical assessment of increases in attributional certainty directly resulting from information obtained via the Internet. Moreover, the study was situated in a relational context—applicant screening and selection—that afforded a naturalistic means of exploring the effect of valenced information on perceptions and attributional certainty.

Uncertainty Reduction via Extracted Information

Of initial theoretical interest is the support of the first hypothesis, evidencing that online information serves to increase attributional certainty about the target individual. Participants reported greater levels of certainty when exposed to online information about the applicant than when online information was not present. Initially this result substantiates URT's axiom that all information enables individuals to better assess and predict future interactions with a target individual. However, consideration of the research question challenges this interpretation, as *t*-tests revealed only positively valenced information significantly affected uncertainty. Cognitive dissonance may account for positive information's role as the driving force in affecting participants' increased attributional certainty due to extracted information.

Cognitive dissonance occurs when an individual attempts to hold two competing ideas or perspectives (Festinger, 1957). Consistent with traditional information obtained in hiring practices, applicant information provided in all conditions demonstrated at least a modicum of fit and job preparedness. This presentation would be consistent with positive extracted information, resulting in the demonstrated gains in attributional certainty. However, the extracted information provided in the negative stimuli condition may have resulted in conflicting perceptions or attitudes about the applicant, indicating the applicant may not be as qualified an applicant and inconsistent with the application, cover letter, and resume. While that additional information provided *more* information about the target applicant, it did not necessarily provide *consonant* information, thus resulting in nonsignificant effects on attributional certainty. Although this explanation reveals a limitation of the present research, it is consistent with its application of the negativity effect.

Negative Asymmetry from Extracted Information

Of additional interest is the lack of support for the negativity effect due to extracted information. Substantive research has demonstrated that negative stimuli influence attitudes, values, and perceptions

more than positive stimuli (e.g., Baumeister et al., 2001; Peeters & Czapinski, 1990). Counter to hypothesizing, there was not the expected significant difference in the magnitude of the directional effects of positively and negatively valenced information on perceptions of PJ fit and employability. Though positive and negative information resulted in significantly different attributions of the job candidate, neither effect differed significantly from the control condition (i.e., no extractive information) and the relative magnitude of positivity and negativity effects were not significantly different. Although the effects of extractive strategies may function similarly to interactive, active, and passive strategies with regard to attributional certainty, novel effects may occur with regard to the nature of attributions and cognitions about the target individual. Extracted information may affect attributions differently than information from traditional information-seeking strategies as online information may be perceived as less credible.

Online it can be difficult to confidently attribute obtained information to the correct individual (Davison, Maraist, Hamilton, & Bing, 2012). For example, how can an employer know Facebook information about an "Anne Summers" is about the "Anne Summers" applying for the open position rather than one of many similarly named individuals online? Similarly, as individuals can often not control the [mis]information posted by others about them (Smock, 2010), how do employers know the information posted accurately reflects the attributes and skills of the applicant? Consequently, there may exist a confirmation bias whereby recruiters find online positive information more credible than negative information as it is easier and less-risky to assign positive attributions to a job candidate than errantly assign negative attributes that may not hold true. Subsequent work would benefit from disentangling the credibility of various online sources (e.g., social network sites, personal websites, third-party websites) and the effect of extracted information on interpersonal attribution.

Online Information's Effect on Job Applicants' Attributions

Findings also afford interesting practical implications for applicants and recruiters as more organizations begin to integrate online information seeking into their hiring processes. College placement offices and guidebooks increasingly suggest individuals minimize and mitigate information from their online presences that could be perceived as negative or undesirable to employers, and graduates are increasingly concerned over their online self-presentation as they enter their careers (Chretien, Goldman, Beckman, & Kind, 2010). Findings of the present research reinforce these concerns, as applicants with negative online self disclosures were perceived as less employable and with lower PJ fit than similar applicants with positive online self disclosures. However, an alternate interpretation suggests those seeking to enhance their job search may benefit from maximizing positive information available online. As positively valenced online information enhanced participants' perceptions of an applicant, rather than whitewashing or obfuscating their online presence job seekers may be more successful by strategically ensuring positive information (e.g., recent workplace achievements and socially desirable interpersonal exchanges) is overtly placed online to be detected in employer's searches.

Future Research

While these findings serve as a foundation for our understanding of the value of extractive information seeking strategies with respect to URT and interpersonal attributions, they also afford new questions and directions for research. Future work should extend the present study to assess effects on attributional certainty due to extracted as compared to interactive, active, and passive strategies. Further, the present study's methodological limitations reinforce previous Carr et al.'s (2010) call for research to explore how individuals systematically and methodologically peruse online information about job applicants. Future research should explore the effects of dynamic information seeking particularly using either interview data or field ethnography, as *in situ* users often follow hyperlinks and browse multiple online information

sources (Hölscher & Strube, 2000). Additionally, subsequent work should further address the cognitive dissonance stemming from obtaining negative information when positive information is expected (or vice versa). Particularly given how readily dissonant information may be obtained, future work should seek to assess the effect of contradictory information from online sources, either from observing an individual in an alternate social context or through misidentification or misattribution of an online presentation to a target individual (cf. Brown & Vaughn, 2011) to determine the effects of multiple sources and valences of information.

Finally, these findings strengthen Westerman and Tamborini's (2008) call to understand what preinteraction impressions may exist to enable a degree of certainty about a relational partner with whom one has never interacted nor seen. Considering no interaction occurred between the zero-history dyad of the participant and applicant, attributional certainty was surprisingly moderate ($M = 56.06$, $SD = 18.64$) across all conditions, suggesting participants developed even moderate confidence in their perceptions of the applicant from the limited information provided in the stimuli dossier. Future research should address preinteraction impressions to understand the baseline certainty that seems to exist even between individuals who have no knowledge of each other.

Conclusion

This research was conducted to begin to understand the effect of online information on perceptions of a target individual, operationalized as job applicants. A rash of popular and trade press articles (e.g., Preston, 2011) offer anecdotes of human resource decisions based on online information regarding potential and current employees. These anecdotal reports are increasingly substantiated with emerging scholarship, particularly from the medical and hospitality fields (Cain, Scott, & Smith, 2010; Chang & Madera, 2012). The present work empirically substantiates anecdotal reports, as participants in this study were more certain of impressions when presented with online information; moreover, the positivity of impressions were correlated with the valence of information obtained online. However, contrary to strongly supported theory, the effects of negative online information were not stronger than the effects of positive online information. Taken together, these findings suggest extractive information seeking strategies deserve further exploration as a unique form of uncertainty reduction at both the theoretical and practical levels. As more individuals turn to the Internet to learn about future and current relational partners, the increasingly rich searchable database of individual information may significantly influence relational development, particularly in early stages of interaction. It would seem that no longer is the Internet a completely anonymous frontier (Christopherson, 2006), but rather can now be harnessed to obtain information about specific individuals unavailable through traditional uncertainty reduction strategies.

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About the Authors

Caleb T. Carr, Ph.D. (http://my.ilstu.edu/~ctcarr) is an Assistant Professor of Communication in the School of Communication at Illinois State University. His research addresses how new media alter communicative processes, including how social media are used for organizational uncertainty reduction and to create and maintain identity online.
Postal Address: Campus Box 4480, 453 Fell Hall, Normal, IL 61761-4480 USA.
Email: ctcarr@ilstu.edu

Joseph B. Walther, Ph.D. (http://www.msu.edu/~jwalther/) is a Professor in Communication, in Telecommunication, Information Studies & Media, and in the Center for Advanced Studies in International Development at Michigan State University. His research focuses on interpersonal, group, and educational applications of computer-mediated communication and social media. He was editor of the *JCMC*'s special issue on Web 2.0 and User-Generated Content as Communication Systems, http://onlinelibrary.wiley.com/doi/10.1111/jcc4.2012.18.issue-1/issuetoc.
Postal Address: 404 Wilson Road, Rm. 472, East Lansing, MI 48824 USA.
Email: jwalther@msu.edu