Exploration of the Source-Impression Relationship in Warranting Theory: Other-Generated Content, Perceptions of Warranting Value, and Weight

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Abstract

Many early studies of warranting theory investigated the role of source, often self-generated and other-generated content, in the impression formation process but did not explicitly test perceptions of warranting value and sometimes were met with mixed results. The present study revisits the source-impression relationship and offers explicit tests of some of the assumptions of past warranting theory literature. An additional variable in the impression formation process, weight, is proposed as a potential explanation for past mixed results. The present study finds support for warranting theory in the impression students form of an instructor. Other-generated content has a greater impact on impressions and is higher in warranting value than self-generated content. The role of warranting value and the role of weight in the source-impression relationship is not supported. Implications for the general support of warranting theory but lack of support for clarifying variables are discussed.

Keywords: Warranting, warranting value, impression, weight, source

When registration begins for a new semester, students may consult a variety of sources to seek information about the instructors of the courses for which they are considering registering. Some may choose to read the faculty profile on the university's website, while 77.5% of students claim that, at least sometimes, they base their decisions for class enrollment on ratings of professors on ratemyprofessors.com (Field et al., 2008).

Early in the study of computer-mediated communication (CMC), important differences between face-to-face and CMC became evident (Walther, 1992). CMC is more asynchronous, more anonymous, and it lacks many of the nonverbal cues communicated in face-to-face interactions; a combination that allows for amplified selective self-presentation in a mediated environment (Walther, 1996). Selective self-presentation becomes especially important to acknowledge when seeking information about another person online. Warranting theory explains what information found online is most meaningful when forming impressions about others, especially considering the ability to present oneself selectively online (Walther & Parks, 2002).

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Inspired by a vignette study of warranting theory by DeAndrea and Carpenter (2016), the present study explores warranting theory within the context of students forming impressions of an instructor based on information found online. Previous warranting theory literature has tested many impression variables, but especially relevant to a student-teacher relationship are the attitude toward an instructor and task (DeAndrea et al., 2015; Walther et al., 2008) and social attraction (Antheunis & Schouten, 2011; Tong et al., 2008; Utz, 2010; Walther et al., 2008; Wotipka & High, 2016). Task attraction has to do with attraction toward another person because of their ability to help complete a task, and social attraction is the attraction someone might feel toward another person because of their personality (McCroskey & McCain, 1974).

The present study further explores common assumptions of warranting theory by exploring the role of self-generated information (e.g., identity claims) and other-generated information (i.e., third party testimonials) in the formation of students' impressions of a university instructor. Beyond conducting a test of warranting theory modeled after other classic tests of the theory, the present study extends scholarship on warranting theory by explicitly testing the variable of perceived warranting value in the impression formation process. Additionally, the present study proposes and tests the variable of weight, or the importance of information to an individual, as an extension of warranting theory.

Warranting Theory

Warranting theory (Walther & Parks, 2002) is a CMC theory that addresses how impressions are formed when seeking information online. Information that is not easily manipulated by the target of the information is considered high in warranting value, and thus impacts impressions of an individual more than information that is easily manipulated by the target of the information (Walther & Parks, 2002). High warranting value cues are cues that connect one's online image to one's corporeal self (Walther & Parks, 2002).

Source

Although scholarship on warranting theory has considered several cues that influence warranting value (e.g., manipulation control, dissemination control, source obfuscation), researchers often point to the source of information posted in a mediated environment as the indication of whether the information can easily be manipulated by the target (Carr, 2019; Lane et al, 2016; Peterson & High, 2021; Utz, 2010; Walther et al., 2009). To be clear, when warranting theory was first proposed in 2002, the original theory never made a claim about the online source of information being a factor in warranting value. When participatory web applications became more mainstream, however, studies of warranting theory commonly explored the role of source of information as a potential warranting cue.

The ability to manipulate information is often operationalized as either self-generated content (i.e., high ability to manipulate) or other-generated content (i.e., low ability to manipulate). Self-generated content, sometimes referred to as disclosures, involves the target making an identity claim. Other-generated content, sometimes referred to as testimonials, involves a third party making identity claims about a target.

Other-generated (e.g., Ballantine et al., 2015; Carr, 2019) content has been found to have a greater impact on impressions than self-generated content. The source of the information is so vital to warranting theory that Parks (2011) includes the source as an important aspect of each of the three boundary conditions of warranting theory: (1) an identity claim made by the target, (2) a third party visibly providing information relevant to that claim, and (3) viewers have the ability to meaningfully compare the identity claim made by the target and the information provided by the third party. Classic studies of warranting theory typically involve manipulated stimuli that include high and low warranting value sources of information about an individual from which participants form impressions (e.g., Walther et al., 2009), typically working under the assumption that other-generated content is higher in warranting value and thus has a greater impact on impressions than self-generated content.

The present study further explores warranting cues involving the source of information in the impression formation process. Although empirical tests of source have generally supported the ideas of warranting theory, a close examination of the literature reveals some inconsistent support for the claim that other-generated content has a greater impact on impressions than self-generated content. In many studies that operationalize low warranting value cues as self-generated information and high warranting value cues as other-generated information, results are as expected (i.e., other-generated content has a greater impact on impressions) for some impression variables but not for others. For example, Utz (2010) found empirical support for the greater impact of other-generated content in impressions of both communal orientation and social attractiveness, but not for the trait of popularity, which was impacted more by self-generated claims. Walther et al. (2009) found that other-generated content had a greater impact on impressions of physical attractiveness but not extroversion. Because of these mixed results, as a first step, the present study tests the validity of source as a warranting cue using a typical study design and analysis (e.g., Ballantine et al., 2015; Carr & Stefaniak, 2012; Walther et al, 2009; Utz 2010).

> H1: Impressions of an attitude toward instructor (H1a), task attraction (H1b), and social attraction (H1c) are more heavily influenced by other-generated content than by self-generated content.

Warranting Value

Early studies of warranting theory often manipulated a warranting cue (often source of information) in stimuli presented to participants and then measured the participants' impressions (e.g., attractiveness, credibility) of the target. Any noticeable difference in impressions after viewing different sources was assumed to be due to perceptions of warranting value, but until more recently that premise was never explicitly tested. DeAndrea (2014) urged those studying warranting theory to directly measure the concept of warranting value, stating, "the causal processes through which (a) warranting cues affect perceptions of warranting value and (b) perceptions of warranting value moderate the effect of the information on impressions comprise the core of warranting theory" (p. 188).

DeAndrea and Carpenter (2016) developed a measure of warranting value called The General Warranting Value Scale. DeAndrea ad Carpenter (2016) en-

couraged researchers to explicitly measure warranting value using the scale instead of assuming that differences in perceptions are due to warranting value of the information, which can, "function as a starting point for more directly testing and advancing warranting theory" (p. 18). The present study answers DeAndrea and Carpenter's (2016) call to join others (e.g., Carr, 2019) to more directly test the role of warranting value in the impression formation process. As a first step, the present study explicitly tests the assumption that other-generated information is higher in perceived warranting value than self-generated information.

> H2: Other-generated content is perceived as having higher warranting value than self-generated content.

Additionally, the present study explores the perception of warranting value as a mediator variable within the source-impression relationship of warranting theory. Mediator variables explain the reason behind an effect. Because classic warranting theory scholarship operates with an assumption that the source of information impacts impressions because of differing perceptions of warranting value, the present study explicitly tests that assumption through the following hypothesis.

> H3: The impact of source on impression (H3a attitude toward instructor, H3b task attraction, H3c social attraction) will be mediated by perceptions of warranting value.

Weight of Impression Trait

Several explanations have been proposed for the mixed support for the source-impression relationship in scholarship on warranting theory. In post-hoc explanations for mixed support, Walther et al. (2009) and Utz (2010) listed possible post-hoc explanations for mixed support, including that the impression formation process works differently for physical vs. behavioral traits, social desirability of traits, and how profitable the traits are to the receiver of the information. In an a priori, formal test of boundary conditions of warranting theory DeAndrea and Vendemia (2019) confirmed that perceptions of a target's self-interest served as a contributing factor to impression formation. The present study seeks to examine one additional factor that could help account for the mixed support of the source-impression relationship in warranting theory – the variable of weight.

As evidenced by the explanations offered by Walther et al (2009), Utz (2010), and DeAndrea and Vendemia (2019), impressions formed online may not be as simple as the source of the information impacting the impression formation process. The impression formation process is complex, and information integration theory attempts to articulate some factors involved in the process, one of which being the factor of weight (Anderson, 1971; 1981). Weight refers to the degree of psychological importance of certain information in making judgments (Anderson, 1971; 1981). While multiple factors might play a role in judgments, each of the factors is not necessarily equally weighted. Certain information might be weighed more or less heavily depending on individual differences or the context of the judgment. For example, in judgments of occupational proficiency, certain traits carried more weight depending on the occupation being discussed (Anderson & Lopes, 1974). The trait of persuasiveness, for example, has more weight on impressions of occupational proficiency for a lawyer than for a plumber. Individuals approach thoughts and behaviors in a goal-driven sense; humans are consciously

purposive (Anderson, 1996). In consideration of individual goals, weight is assigned to each informative stimulus, thus impacting how much that particular stimulus will contribute to an overall judgment. Information relevant to goal attainment will be weighted more heavily than less relevant information. As it relates to warranting theory's process of mediated impression formation, weight is defined as the importance placed on each piece of information within the context of a judgment.

On the topic of weight in online environments, DeAndrea (2014), referencing signaling theory, suggested that potential costs of believing information online may impact the perceived warranting value of information. This perspective encourages researchers to consider the weight a receiver places on information when costs are at stake. DeAndrea (2014) uses the example of an online pharmacy and the enhanced motivation to scrutinize credibility of information because of the dire costs of a mistake (i.e., taking inaccurate medication).

Drawing on explanations for mixed support in past warranting theory literature, literature about weight in the impression formation process, and DeAndrea's (2014) points about enhanced motivation to scrutinize information, the present study explores the role of weight in the impression formation processes online. The present study predicts that weight modifies the relationship between the source of information and the impression formed. A moderator variable explains when certain effects will hold (Baron & Kenny, 1986). It is possible that mixed support for warranting theory in existing literature can be explained by the lack of weight participants placed on each study's dependent variables (e.g., extroversion, physical attractiveness, popularity). For example, Walther et al. (2009) found support for warranting theory in impressions of peers' physical attractiveness, but not in perceptions of peers' extroversion, based on social networking site profile content. It is possible that if viewers of a peer's profile care less about whether an individual is extroverted than physically attractive, the source of the information is no longer important to forming impressions about extroversion. In this case, the source-impression relationship in warranting theory may not be supported as expected. It is possible that the weight placed on information can activate the expected process of impression formation through warranting value, while if weight is lacking, the source-impression relationship in warranting theory may not be supported. To further explore the role of weight in the impression formation process, the present paper proposes H4.

> H4: The impact of source on impression (H4a attitude toward instructor, H4b task attraction, H4c social attraction) will be moderated by weight of attitude toward instructor, task attraction, and social attraction, respectively.

Method
Participants

Participants (*N* = 330) were recruited from undergraduate communication courses at both a large, public university and a small, private college in the Midwest. Participants were an average age of 21.95 (*SD* = 7.11) and 63.6% were female (*n* = 208). The sample was 73.1% White (*n* = 239).

Stimuli

Positive and negative versions of mock-up websites presented self-generated information, operationalized as a university faculty profile page, and other-generated information, operationalized as an instructor review website similar to ratemyprofessors.com. Mock-up websites presented information about Dr. Joan Smith, a hypothetical instructor at the participants' university.

Each participant first viewed a faculty profile website. Participants were randomly assigned to either view a positively- or negatively-valenced faculty profile. Next, each participant viewed an instructor review website. Participants were randomly assigned to either view a positively- or negatively-valenced instructor review website. This resulted in a 2 (valence of faculty profile website) X 2 (valence of instructor review website) between-subjects factorial design and four conditions. The order of sources consulted in the impression formation process (i.e., faculty profile, then instructor review website) was based on information-seeking literature that has identified a tendency for internet users to consult a variety of sources from the first page of Google results (Fiksdal et al., 2014). Unemperically, the author observed Google results after keyword searching several university faculty and found that both the university's faculty profile website and ratemyprofessors. com typically appear on the first page of Google. Additionally, the faculty profile tends to be the first Google search result, while the instructor review website tends to appear shortly after. Theoretically, information-seekers online would encounter a faculty profile first, followed by an instructor review website.

Some aspects of the two websites (e.g., name of the instructor, education) remained consistent across conditions. Neither website displayed a photograph and instead used the default placeholder image of a silhouette to avoid any confounding variables associated with appearance. The only information varying between sources was the content. Information within the stimuli was modeled after real faculty profiles and ratemyprofessors.com reviews and was based on existing literature about desirable characteristics in university faculty. Because the impression variables of interest in the present study include task and social attraction, positive and negative characteristics associated with task and social attraction were conveyed within stimuli content. Utz (2010) suggested that conveying a trait and testing that trait directly is more of a manipulation check than a test of warranting theory. Instead, Utz (2010) suggested conveying traits that would have an impact on the impression cues. In line with Utz' (2010) recommendation, students prefer university instructors who have characteristics associated with task attraction, such as strong teaching ability (e.g., organized and clear with classroom content; Sanchez et al., 2011; Subkoviak & Levin, 1974) and willingness to collaborate with students on research endeavors (Subkoviak & Levin, 1974). Students also prefer university instructors who have characteristics associated with social attraction, such as strong interpersonal skills (Sanchez et al., 2011; Subkoviak & Levin, 1974). Positively-valenced stimuli were designed to portray characteristics such as clarity, organization, and interpersonal skills to elicit task and social attraction, while negatively-valenced stimuli were designed to portray a lack of clarity, organization, and interpersonal skills.

Self-generated content, operationalized as the faculty profile website, contained a teaching philosophy. For the condition designed to evoke a positive

perception of the instructor, the teaching philosophy (85 words) focused on the instructor's passion for teaching, organization, clarity, and interpersonal skills. The conditions designed to encourage negative judgment about the instructor (85 words) were carefully created to evoke a negative impression, while also remaining a realistic self-generated statement. The negatively-valenced faculty profile was meant to evoke an impression of the instructor's inflexibility and disregard for interpersonal skills. Similarly, the positively-valenced instructor review website (58 words) contained content about the instructor's positive attitude, interpersonal skills, clarity, and organization. The negatively-valenced reviews (63 words), however, contained criticisms about the instructor's lack of interpersonal skills, organization, and clarity.

To ensure that stimuli were interpreted by participants as appropriately positive or negative, a pilot study was conducted. A manipulation check of positive and negative versions of both websites were conducted with a sample of 26 undergraduate students. The manipulation check of the faculty profile website (i.e., self-generated content) revealed an effective manipulation, $F (1, 24) = 42.35$, $p < .001$. In a manipulation check of the instructor review websites (i.e., other-generated content), the pilot study, $F (1, 24) = 238.35$, $p < .001$, indicated a successful manipulation. In both websites, positively-valanced versions were perceived as more positive than negatively-valenced versions.

Procedure

To determine individual perceptions of the weight of instructor traits, participants completed several measures reporting on the importance of traits of an instructor. This procedure is similar to other information integration literature in determining a baseline weight of a trait before participants encounter stimuli (e.g., Chung et al., 2012). After completion of weight measures, participants were presented with mock websites containing information about an instructor at their university. All participants viewed self-generated information appearing to come directly from the target (i.e., a faculty profile on a university website) and other-generated information appearing to come from a third party (i.e., an instructor review website). Participants were instructed to carefully view and consider the information from the website screenshots as if they were considering taking a course next semester with the instructor in question. Online interactants are more likely to carefully view information about others when they anticipate future interactions (Walther, 1994). To identify how engaged participants were with the content of the websites, time spent on the questionnaire was tracked as a proxy variable for engagement with content. Duration was not found to be a significant covariate within any of the significance tests, so it was eliminated from final analyses. After viewing the website screenshots, participants responded to scales concerning their perceptions of the instructor and demographic information.

Measures

To test the moderating effect of **weight** on the impression formation of instructors based on the source and valence of information, the importance of traits needed to be measured. Other tests of weight within information integration theory (e.g., Zalinski & Anderson, 1977) explicitly ask participants to rate the importance

of items within a context. The present study used similar methods, asking partici-
pants to rate attributes on a scale by completing an adapted version of the impres-
sion scales. Participants were asked to complete each scale while considering what
traits are important in a university-level instructor.

Attitude toward instructor was measured both in the beginning of the ques-
tionnaire to determine the weight of attitude toward the instructor for each par-
ticipant and as an impression variable after viewing the stimuli. McCroskey's
(1994) attitude toward instructor items were taken from the overall Instructional
Affect Assessment Instrument. To determine weight of attitude toward instruc-
tor items, an adapted version of McCroskey's (1994) attitude toward instructor
items prompted participants, "How important are the following characteristics
in a college instructor?" and responses ranged from *very unimportant* (1) to *very
important* (7) on a 7-point Likert-type scale. The measure included items, such as
"Good" "Valuable," "Fair," and "Positive" (p. 68). This adapted version differed
from the original because the original uses semantic differential items (e.g., Good/
Bad) within a 7-point Likert-type scale. After viewing the manipulated stimuli,
participants responded to the original attitude toward instructor scale in response
to the stimuli. The prompt read, "My attitude about the instructor is." Previous
research has found acceptable reliability of the overall Instructional Affect Assess-
ment Instrument (α = .93; Banfield, Richmond, & McCroskey, 2006), but the reli-
ability for only attitude toward instructor items was not clear. In the present study,
acceptable reliability was found for the adapted version used to determine weight
(α = .89) and in the impression of attitude scale (α = .90)

To measure both importance of and perceptions of **task and social attraction**
toward the instructor, participants completed the task and social attraction por-
tions of McCroskey and McCain's (1974) measurement of interpersonal attraction.
The scale was adapted to measure the weight by asking, "How important are the
following characteristics in a college instructor?" Each item in McCroskey and
McCain's (1974) original scale describes a short scenario (e.g., "If I wanted to get
things done I could probably depend on her"), which for the purposes of measur-
ing weight, were altered to get at a particular, positively-valenced trait having to
do with both task and social attraction. For example, the task attraction item, "If I
wanted to get things done I could probably depend on her" was changed to "De-
pendable" to allow participants to reflect on the importance of that particular trait.
After viewing the manipulated stimuli, participants responded to the original
task and social attraction items. McCroskey and McCain (1974) found acceptable
reliabilities for the original task and social attraction scales (α = .86 and .75, re-
spectively). The present study found acceptable reliability for the adapted scale to
measure weight of task and social attraction (α = .90 and α = .79, respectively) and
the non-adapted scales to measure impression (α = .88 and α = .88, respectively).

To measure **warranting value** of each source, participants completed DeAn-
drea and Carpenter's (2016) General Warranting Value Scale. An example item
states, "(The target) manipulated the information that appeared on (the site) about
(the target)" (DeAndrea & Carpenter, 2016, p. 17). DeAndrea and Carpenter's
(2016) three initial tests of the scale have shown acceptable reliabilities (α = .91, α =
.91, α = .95). The present study also found acceptable scale reliability in each of the
four conditions (α = .70-.84).

Data Analysis

Correlations between study variables are presented in Appendix A.

First, a test of the impact of source on impressions was conducted. Data analysis for this traditional test of warranting theory was modeled after other warranting literature, but included some important differences informed by past studies' results. Past warranting scholarship (e.g., Ballantine et al., 2015) has identified an additivity effect in addition to a warranting effect. In other words, both self- and other-generated content impact impressions to some extent, even if other-generated content has a greater impact. Orthogonal contrast coding was conducted, but diverting slightly from other more classic tests of warranting theory using contrast coding (e.g., Ballantine et al., 2015; Walther et al., 2009), the present study acknowledges the additivity effect in cooperation with the warranting effect. For the condition involving both positively-valenced self- and other-generated content, a weight of +3 was assigned. In the conflicting condition involving negative self- and positive other-generated information, a weight of +1 was assigned. A weight of -1 was assigned to the condition with positive self- and negative other-generated information, and a weight of -3 was assigned when both self- and other-generated information was negatively valenced. An analysis of variance (ANOVA) was conducted with the contrast codes to determine if the predicted mean patterns were observed among the four conditions. In cases where significance tests are conducted to explore focused, directional predictions of differences among conditions, rather than simply explore differences between conditions in general, contrast analyses are superior to other non-directional significance tests like a traditional ANOVA (Rosenthal & Rosnow, 1985). Contrast codes and means for each impression variable are summarized in Appendix B.

H2 predicts that other-generated content will be perceived as higher in warranting value than self-generated content. These associations were tested using multilevel modeling. Because each participant viewed both self-generated and other-generated content, source of the information was nested within each participant in their perceptions of warranting value of the information. It is reasonable to believe that perceptions of warranting value by the same individual are likely to be more similar to each other than perceptions of others, warranting the use of a repeated measures analysis multilevel model. Individual perceptions of warranting value served as the outcome variable, while the source of information (i.e., self- or other-generated) served as the independent variable.

H3 predicts that the relationship between source (i.e., condition variable) and impression will be mediated by perceptions of warranting value. To investigate this mediation model, mediated multiple regression analyses were computed using model 4 of the PROCESS macro in SPSS (Hayes, 2012) for each impression variable (i.e., attitude toward instructor, task attraction, and social attraction). The model included condition (i.e., whether participants viewed positive or negative faculty profiles and instructor review websites) as the independent variable, the impression variable as the dependent variable, and two mediator variables – the perceived warranting value of the faculty profile and the perceived warranting value of the instructor review website. The perceived warranting value variables were mean-centered. Models were calculated with 5000 bootstrapped samples. See Appendix C for a visual representation of the mediation model for H3.

H4 predicted that the relationship between source (i.e., condition variable) and impression would be moderated by weight. To investigate this moderation model, a moderated multiple regression analyses was computed using model 1 of the PROCESS macro in SPSS (Hayes, 2012) for each impression variable (i.e., attitude toward instructor, task attraction, and social attraction). Weights of each impression variable were mean-centered to avoid multicollinearity (Hayes et al., 2012) and to allow for more power in the analysis. Models were calculated with 5000 bootstrapped samples.

Results
Manipulation Checks
To test the effectiveness of the manipulation of self-generated content, participants were asked to respond to two statements including, "The instructor presents herself positively on the faculty profile website," and, "The instructor includes negative information on the faculty profile website" (reverse coded). A manipulation check demonstrated the faculty profiles ($N = 330$) were effective in producing the expected result of significant between-group differences between positively- and negatively-valenced faculty profile websites, $F (1, 327) = 860.39$, $p < .001$. Those exposed to a positively-valenced faculty profile ($M = 6.16$, $SD = 1.09$) reported greater positivity in the profile than those exposed to a negatively-valenced faculty profile ($M = 2.93$, $SD = 1.23$). A manipulation check of other-generated content, $F (1, 326) = 1665.00$, $p < .001$, indicated a successful manipulation. Participants exposed to a positively-valenced instructor review website ($M = 6.26$, $SD = 1.06$) reported greater positivity in the review website than those exposed to a negatively-valenced instructor review website ($M = 1.75$, $SD = 1.07$).

Test of Warranting
H1 predicted a greater impact of other-generated content on impressions, compared to self-generated content. Contrast analysis supported the predicted directional effects of source on impression for attitude toward instructor, $t (317) = 17.34$, $p < .05$, Cohen's $d = 1.15$, task attraction, $t (318) = 14.31$, $p < .05$, Cohen's $d = 1.03$, and social attraction $t (321) = 12.32$, $p < .05$, Cohen's $d = 1.16$. A significance test of H1 was conducted using a priori contrast coding. H1 was supported. Other-generated content had a significantly greater impact on impressions of attitude, task attraction, and social attraction than self-generated content. Means, standard deviations, and sample sizes for impressions from self-generated and other-generated content are presented in Appendix B.

H2 hypothesized that other-generated content would be perceived as having higher warranting value than self-generated content. A repeated measures multilevel model was conducted, which included source as a fixed effect nested within individual participants as predictors of perceptions of warranting value. The fixed effect of source was found to be significant ($b = -1.23$, $SE = .09$, $t(329) = -13.39$, $p < .05$, $R^2 = .18$), indicating that the source of the information had a significant effect on perceptions of warranting value. Other-generated content ($M = 4.89$, $SD = 1.48$) was perceived to be higher in warranting value than self-generated content ($M = 3.65$, $SD = 1.14$). The random effect of Participant ID was also significant ($b = 0.36$, $SE = .10$, $p < .05$)., indicating that individual perceptions of warranting value

accounted for a significant amount of the variation in perceptions of warranting value. Overall, H2 was supported, but the effect of Participant ID should be taken into account when interpreting the results.

H3 predicted that the source of the content would predict impressions of attitude toward instructor (H3a), task attraction (H3b), and social attraction (H3c), mediated by the perception of warranting value. A mediated multiple regression model significantly predicted impressions of attitude toward instructor, $F (1, 317)$ = 283.95, $p < .001$, $R^2 = .47$. However, more specifically, the mediating effect of perceived warranting value on participants' attitude toward the instructor was not significant for either the perceived warranting value of the faculty profile or the perceived warranting value of the instructor evaluation website. H3a was not supported. The relationship between source and impression of task attraction mediated by perceived warranting value was, overall, significant, $F (1, 318) = 178.70$, $p < .001$, $R^2 = .36$. The results revealed a positive and significant indirect effect of source on task attraction through perceived warranting value of the faculty profile, $b = .04$, 95%CI = .0026, .0764. Looking more closely at this significant mediation, the a_1 path from condition to warranting value of the faculty profile reveals the condition has a significant impact on perceived warranting value of the faculty profile, $b = -.29$, $p < .000$. In an observation of mean levels of perceived warranting value of the faculty profile by condition, Condition 1 ($M = .78$, $SD = .80$) and Condition 3 ($M = .71$, $SD = .98$) both had positive mean perceptions of warranting value, while Condition 2 ($M = -.77$, $SD = .98$) and Condition 4 ($M = -.74$, SD = .94) were both negative perceptions of warranting value. The b_1 path from perceived warranting value of the faculty profile to the impression of task attraction reveals the perception of warranting value has a significant impact on task attraction, $b = -.13$, $p = .03$. In the a_2 path, however, perceived warranting value of the instructor review website did not significantly contribute to the model as an indirect effect, $b = -.00$, 95%CI = -.0227, .0117. H3b was partially supported. A model of impressions of social attraction mediated by perceived warranting value was overall significant, $F (1, 321) = 144.6474$, $p < .001$, $R^2 = .31$, but neither the perceived warranting value of the faculty profile, $b = -.04$, 95%CI = -.0849, .0010, or the instructor review website, $b = -.00$, 95%CI = -.0166, .0146, demonstrated significant indirect effects, so H3c was not supported. Overall, H3 was not supported, except for the significant mediation of the impact of source on impression of task attraction, mediated by perceptions of warranting value of the faculty profile.

H4 predicted that the source of the content would predict impressions of attitude toward instructor (H4a), task attraction (H4b), and social attraction (H4c), moderated by the weight of each respective impression variable. When it comes to attitude toward instructor, although the overall moderation model, $F (3, 287) = 78.30$, $p < .001$, $R^2 = .45$, was significant, the weight of attitude toward instructor was not a significant moderator. H4a was not supported. For the impression of task attraction, the moderation model was significant, $F (3, 312) = 61.96$, $p < .001$, $R^2 = .37$, but weight of task attraction did not significantly moderate the source-impression relationship. H4b was not supported. Finally, for the impression variable of social attraction, the moderation model was significant, $F (3, 320) = 50.66$, $p < .001$, $R^2 = .32$, but the source-impression relationship was not significantly moderated by the weight of social attraction. H4c was not supported. Overall, H4 was not supported.

Discussion

The present study explicitly tested several variables to assess assumptions past research has made about warranting theory, including that other-generated content has a greater impact on impressions than self-generated content, other-generated content is perceived to be higher in warranting value than self-generated content, and that perceived warranting value mediates the relationship between source and impression. The variable of weight was also introduced as a potential additional consideration when testing the impact of source of information on impressions.

In a classic test of warranting theory, the source-impression relationship was generally supported. Other-generated content was found to have a greater impact on impressions. This supports the major premise of warranting theory that information that is not easily manipulated by the target has a greater impact on impressions (Walther & Parks, 2002). Other-generated content was also found to be associated with greater perceptions of warranting value. While past literature has worked under the assumption that other-generated content would be perceived as greater in warranting value, the present study supports that assumption.

Interestingly, perceptions of warranting value did not significantly mediate the relationship between source and impression. While traditional tests of warranting theory manipulated stimuli and then tested impressions, they made an assumption that the difference in impression was due to differing perceptions of warranting value. The present study, however, questions that assumption. The only exception to the insignificant mediation of the source-impression relationship by perceived warranting value was the perception of the warranting value of self-generated content in the impression of task attraction. In the task attraction impression formation process, other-generated content did not play a significant role in relationship between source and the impression. Perhaps an explanation exists for why perceptions of warranting value of the faculty profile mediated the relationship between source and task attraction, while no other source-impression relationship was mediated by perceptions of warranting value of the source. For example, it is possible that the faculty profile was especially content-heavy with information related to task attraction, which made impressions of warranting value especially important to the impression formation process for task attraction.

Weight of attitude toward instructor, task attraction, and social attraction did not significantly contribute to any of the respective models of impression formation. The results are surprising given the emphasis placed on weight within person judgments in information integration theory literature (Anderson, 1971; 1981). One interesting observation about the variable of weight in the present study, and one that might help explain the null findings of H4, is that each weight variable was found to have a particularly high mean and small standard deviation. On a 7-point scale, the mean weight of Attitude Toward Instructor was 6.01 (SD = 1.12), the mean weight of Task Attraction was 6.17 (SD = 0.94), and the mean weight of Social Attraction was 4.13 (SD = 1.13). In other words, most participants rated each of these impression variables as highly important, leaving little variability in participant responses. Because participants rated each impression variable as highly important, there was little variability in responses, leading to a range restriction. Because of this range restriction, significance tests failed to observe any relation-

ships between weight variables and other variables. Another possible explanation for the lack of support is that participants did not accurately evaluate their own importance placed on each trait within the context of a student-instructor relationship. Generally, people do not have accurate insight into what is of importance when forming impressions about another person (Anderson, 1982). Information integration theory says that cognitive processes like judgments are complex processes, and it is difficult to point to explanations for how these cognitive processes occur because of multiple causation (Anderson, 1981). It is possible that the present study simplified the process of person perceptions too much by focusing on weight within the source-impression relationship.

Implications

While results from the present study generally support warranting theory, perceived warranting value did not, generally, mediate the relationship between source and impression. This finding has serious implications for past literature on warranting theory that has manipulated sources and tested impressions, assuming that the cause of different impressions was warranting value. Peterson and High (2021) similarly proposed a mediation model, including warranting value as a mediator to the relationship between source and perceived accuracy of the information. The model was also not supported. Interestingly, trust as a proposed mediator variable was supported in the model. The results of the present study in combination with Peterson and High's (2021) results question whether the variable that mediates the relationship between source and impressions in warranting literature is truly perceptions of warranting value, instead of another variable like trust.

In an effort to expand the explanatory and predictive power of warranting theory, especially considering the ongoing conversation in literature on warranting theory about mixed results, the present study tested weight as a potential contributor to the impression formation process. Although weight was not found to be a significant part of the model of impression formation, it serves as a starting point in understanding one possible cognitive process happening within warranting theory.

Practically, because the present study found that weight does not impact impressions formed, it is possible that even information that is not determined to be important to the receivers of information will still impact impressions. If, for example, a traveler is reviewing information online to decide which hotel to reserve, the poor review of a hotel's fitness center may negatively impact impressions of the hotel, even if the fitness center is not of importance to the traveler. Similarly, the positive review of the penthouse suite might positively impact impressions, even if the traveler is staying in a standard room and the quality of the penthouse suite is not of importance to him or her. Industries that rely heavily on third-party content should avoid dismissing a negative review over the idea that nobody will care about what is discussed in the review.

Limitations and Future Directions

Although the present study contributed understanding to the study of warranting theory, like all studies, the present study has some limitations. First, a lim-

itation of the present study was the failure to randomize the order in which stimuli were presented to participants. While it is logical that an internet user would seek information using Google results (Fiksdal et al., 2014) in the order they are presented by Google, all participants first viewed the faculty profile website followed by the student review website, which introduces the potential for a primacy effect. The reason this is problematic is because information integration literature has thoroughly documented the presence of a primacy effect in impression formation, due to a decrease in attention over time. In tests of person perception involving a list of adjectives, the adjectives presented early in the list have a larger effect on overall impressions than the adjectives presented later in the list (Anderson, 1981), even if the list is only made up of four to six adjectives (Anderson, 1982). Varying or randomizing the order participants were exposed to content would have randomized the primacy effect, distributing it evenly to all conditions.

Another potential limitation was the attempt to operationalize anticipation of future interaction in the study. Participants were told to assess the website material as if they were considering taking a class with the instructor in question next semester, a hypothetical situation that may have not produced strong anticipated future interaction. Other warranting theory literature has gone to greater lengths to create anticipation of future interaction by bringing participants into a lab and telling them they were about the meet the target face-to-face (Walther et al., 2009) or actually having participants interact with the target or target's connections on social media (Peterson & High, 2021). Any effects of the weak anticipation of future interaction likely impacted all conditions equally.

A third limitation of the present study is the potential impact of the number of sources of information within the self-generated and other-generated content. The self-generated content all came from one presumed source, Joan Smith, the target of the online information and impressions. The other-generated content, however, came from three student reviews on an instructor review webpage. An effort was made in the study design to have both self- and other-generated content contain similar information, using a similar number of words; however, the impact of information from one person vs. three people might have carried differing weight in the impression formation process, an issue in study design about which DeAndrea (2014) warned. Future research investigating warranting theory should make an effort to not only match amount of content but number of sources of information across conditions.

Future researchers should continue to explore the role of perceived warranting value alongside other potential influences to the impression formation process, like weight. If perceived warranting value and weight do not adequately explain the connection between source and impression, that lack of explanation may help clarify some of the inconsistent support for the source-impression relationship explored in much warranting literature. Future researchers should continue to explore what might be (inconsistently) mediating the relationship between source and impression if perceived warranting value is not the explanation. Future research should also explore weight in other contexts, especially contexts that might encourage more variability in weight among participants. The present study experienced a range restriction for weight variables, but not all impressions in all contexts would be weighted so highly or so similarly by all participants. Further

exploring the addition of weight within the impression formation process in other contexts would be a valuable contribution of future research.

Conclusion

The present study further advances warranting theory by explicitly testing some of the assumptions of past studies on warranting theory, including that other-generated content has a greater impact than self-generated content on impressions and that other-generated content is perceived as having greater warranting value. The study provides support for warranting theory in a traditional sense, but calls into question the mediating role of perceived warranting value in the impression formation process due to lack of support. Additionally, the supplementary variable of weight is introduced in the impression formation process, with origins in information integration theory, which offers a potential explanation for mixed support for the source-impression relationship in literature on warranting theory. The moderating role of weight, however, was not supported.

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Appendix A

Table 1: Correlations between study variables

	M (SD)	2	3	4	5	6	7	8
1. Attitude Toward Instructor	4.45 (1.62)	.79**	.69**	.18**	.15**	-0.04	0.01	-0.02
2. Task Attraction	4.63 (1.37)	--	.59**	0.08	0.06	0.01	0.01	0.02
3. Social Attraction	3.45 (1.41)		--	.26**	0.08	-0.06	0.01	0.08
4. Warranting Value of Faculty Profile	3.66 (1.14)			--	.22**	-0.04	-0.12*	0.00
5. Warranting Value of Review Site	4.88 (1.48)				--	-0.01	0.04	-0.18**
6. Weight of Attitude Toward Instructor	6.01 (1.12)					--	0.46**	0.17**
7. Weight of Task Attraction	6.17 (0.94)						--	0.18**
8. Weight of Social Attraction	4.13 (1.13)							--

p < .05; ** p < .01

Appendix B

Table 2: Means, Standard Deviations, and Sample Sizes for Impressions from Self-Generated and Other-Generated Content

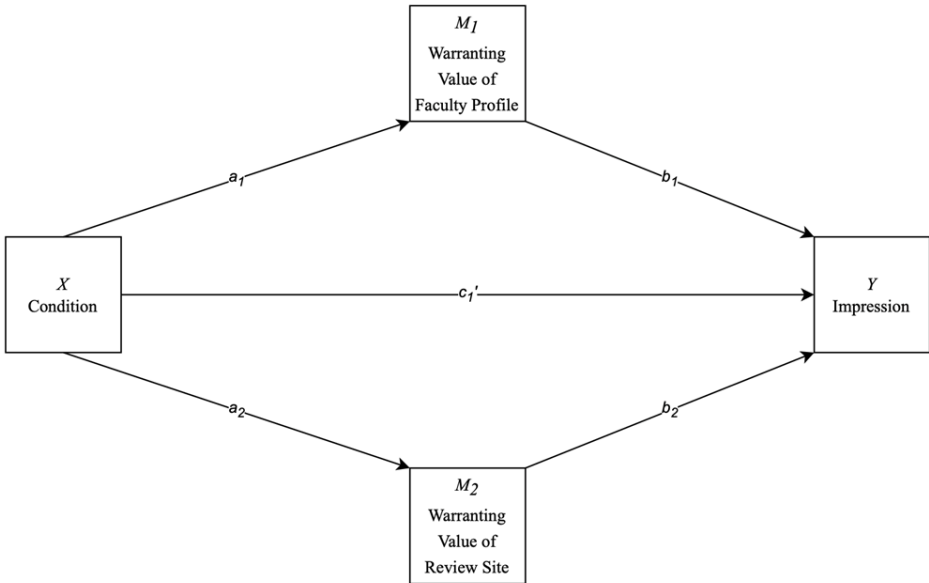| | | Self-Generated content | | | | | |
| | | Positively-valenced | | | Negatively-valenced | | |
	Other-Generated content	*Contrast Code*	*M (SD)*	*n*	*Contrast Code*	*M (SD)*	*n*
Attitude toward Instructor	Positively-valenced	+3	6.07 (1.09)	81	+1	4.94 (1.09)	79
	Negatively-valenced	-1	3.61 (1.27)	81	-3	3.19 (1.15)	80
Task Attraction	Positively-valenced	+3	5.81 (.93)	79	+1	5.23 (1.00)	81
	Negatively-valenced	-1	3.68 (1.19)	82	-3	3.86 (.99)	80
Social Attraction	Positively-valenced	+3	4.65 (1.10)	81	+1	3.55 (1.19)	81
	Negatively-valenced	-1	3.21 (1.17)	81	-3	2.39 (1.19)	82

Appendix C

Figure 1: Mediation model for H3

X Condition variable is Condition 1 = positive self-generated content and positive other-generated content, Condition 2 = negative self-generated content and positive other-generated content, Condition 3 = positive self-generated content and negative other-generated content, Condition 4 = negative self-generated content and negative other-generated content

Y Impression variable is Attitude Toward Instructor, Task Attraction, or Social Attraction. A separate model was run for each impression variable.