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LINKS ARE EVERYWHERE: EFFECTS OF WEB-BASED GROUPINGS ON TRUST TRANSFER

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Abstract

One of the most ubiquitous examples of information technology is the World Wide Web. On the Web, hypertext links are everywhere, but trust may be hard to find. This research examines how the presentation of groups of links may affect consumers' trust in organizations encountered on the Web. We use an experimental methodology to examine how the description of a hypertext list and the familiarity of members of the list may affect trust in both familiar and unknown target organizations. Our theoretical model is rooted in the literatures on trust transfer and entitativity, which is the extent to which individual entities are perceived as forming a group. Results are expected to answer practical questions with regard to the use and presentation of hypertext links and also to extend the trust transfer literature by examining factors not previously considered: super-dyadic transfer and potential negative effects of transfer.

Keywords: Hypertext links, trust transfer, entitativity

Introduction

Hypertext links are the glue that holds the World Wide Web together and makes the Internet accessible to individuals and organizations. They are ubiquitous: organizations may provide one or many links to other organizations on their Websites, and millions of people use online search engines to generate lists of links to organizations they may be interested in visiting. Trust, on the other hand, may be scarce (Hoffman et al. 1999). In this research, we seek to understand how an organization's grouping with others in hypertext listings affects individuals' trust in the organization after they visit its Web site. Previous work has provided evidence of the importance of hypertext links to organizations' perceived trustworthiness, credibility, and ability to attract business (Park et al. 2002; Stewart 2003; Stewart and Zhang 2002). We extend this work by focusing on links as a key component in the trust transfer process and examining three questions not previously considered: (1) Does perceived trustworthiness at the group level get transferred to individual members of the group? (2) Can online grouping of links spur trust transfer that results in negative effects in addition to positive effects? (3) Does the description of a group of organizational links moderate the trust transfer process?

This work will both extend the theoretical model of trust transfer and help in understanding how the ubiquitous technology of hypertext linking interacts with cognition to influence individual and organizational outcomes. From a practical perspective, results may be used by organizations to optimize their search engine placement and their presentation of hypertext links.

The next section summarizes the theoretical basis for and presents the hypotheses in our research model. The subsequent section provides an overview of the methods used to test the model and some preliminary results from pilot testing. In the last section, we summarize the expected results and contributions of the research.

Literature Review: Trust Transfer on the Web

In this research, we focus on *trusting beliefs*, defined as the extent to which a trustor sees a target as honest, competent, benevolent, and reliable (McKnight et al. 1998). Trust transfer occurs when trusting beliefs in one target (e.g., a person, group, or organization) are affected by trusting beliefs in another target, based on a perceived association between the two (Doney and Cannon 1997; Uzzi 1996). Stewart (2003) found that transfer may occur when a trusted organization sends a hypertext link to an unknown organization, and suggested that the underlying process depends on the entitativity of the two linked trust targets. Entitativity is the extent to which a collection of entities is perceived as forming a group (Campbell 1958). This concept has seen a recent surge in interest among researchers in social psychology (Brase 2001; Dasgupta and Banaji 1999; Lickel et al. 2001; Lickel et al. 2000; Sherman et al. 2002; Yzerbyt et al. 2001), and when combined with the trust literature, their research provides a rich theoretical backdrop for understanding the effects of hyperlink affiliations among organizations. Stewart brought these two streams of research together and showed that the presentation of a hypertext link increased the perceived entitativity of the two linked organizations, and that higher entitativity perceptions were predictive of higher trust in the less well-known linked organization.

We build on this work in several ways. First, prior studies of trust transfer have focused at the dyadic level. For example, Uzzi (1996) examined transfer from one trusted business associate to one unknown potential business associate and Stewart assessed transfer from one Website to another. The entitativity literature, while accounting for dyads as a special case of groups, may be applied at a larger group level. Larger groupings are relevant on the WWW, where, for example, organizations may provide lists of their partners or search engine results may group links to several organizations on a single page. Thus we extend the study of transfer from examining transfer from one organization to another, to transfer based on the overall impression of a group of targets. At this level, the entitativity literature draws from the categorization literature, which has shown that once a target is categorized as being a member of a group, it is assumed to have the attributes associated with that categorization (Wilder and Simon 1998). The entitativity literature remains a more appropriate basis for our work on trust transfer because it assesses the cognitive grouping of a set of individual entities, which may or may not fit in a preexisting mental category. In other words, groupings are not limited to categories (Lickel et al. 2000). For example, organizational members of a strategic alliance may be perceived as entitative, without being slotted into a category such as Fortune 500 Firms.

Much of the recent literature on entitativity has focused on understanding how information is processed about groups and how trait inferences are formed and utilized by observers of groups. Crawford et al. (2002) argue that as multiple members of a group are encountered, an overall impression is formed such that information that was specific to one group member becomes associated with others. Traits associated with individuals in a high entitativity group are abstracted to the group level and may later be applied to other individuals in the group. Thus if several group members are associated with high trust inducing traits, a high trust impression may be abstracted and when the trustworthiness of individual members of the group is later judged, those judgments will be biased upward.

A second way that we extend the work on trust transfer is by examining the possibility of negative effects as well as positive effects. Prior work on transfer has focused on positive effects to unknown targets (Doney and Cannon 1997; Milliman and Fugate 1988; Stewart 2003; Strub and Priest 1976; Uzzi 1996; an exception is Stewart and Zhang 2002). However, by basing our model on recent work on entitativity, we are able to develop the theory to consider the possibility that a known target may experience a decrease in perceived trustworthiness when it is grouped with less trusted targets. In other words, if a majority of group members have traits associated with low trust, then a low level of trustworthiness may be abstracted to the group and later applied in assessing individuals within the group.

In order to develop testable hypotheses based on the theoretical propositions relating to the transference of group traits as discussed above, we must first understand what traits may be associated with trustworthiness. There is a large body of research addressing this question (e.g., Geyskens et al. 1998; Jarvenpaa, et al. 2000; Kollock 1999; Lewicki and Bunker 1996; McKnight et al. 1998). Due to space constraints, we do not review that literature here, but instead focus on only one antecedent to trustworthiness: familiarity. When consumers encounter organizations that they know well, their trust may be knowledge-based, that is, based on their memory of previous experiences with the organization (Lewicki and Bunker 1996) or based on their knowledge of the organization's reputation (Ba and Pavlou 2002; Jarvenpaa et al. 2000). Familiarity may result in high or low trust. The hypotheses below refer to organizations that have established high trust based on familiarity. As noted in the methods section, the assumption that familiarity has resulted in relatively high trust will be empirically validated for the specific organizations chosen to participate in the study.

Hypothesis 1: Trust in an organization will be higher when a link to the organization is presented in a list of familiar trusted organizations than when it is presented alone.

Hypothesis 2: Trust in an organization will be lower when a link to the organization is presented in a list of unfamiliar organizations than when it is presented alone.

As indicated in H1 and H2, the study will examine two cases of hypertext link list presentations: one in which a target organization is included in a list of familiar, trusted organizations, and one in which a target is included in a list of unknown others. Either of these lists may be presented in different ways: they could be presented as a list of advertisers on a host site, as a list of business partners, as a list generated from a search engine, etc. The third extension of the trust transfer model proposed in this study is to examine the impact of qualitatively different kinds of groupings on transfer. Would a list presented as a set of business partners have a different effect on transfer than a list presented as a randomly generated set of companies in the same industry (as might be seen on a search results page)?

Lickel et al. (2000) point out that any collection of individuals, ranging from those with seemingly little relation to one another (such as people in line at a bank or people in the audience at a movie) to those with seemingly strong relations to one another (such as members of a family), may be considered as a group. Different kinds of groups vary in the extent to which they are perceived as entitative. Lickel et al. (2000) found that intimacy groups and task groups were perceived as highest in entitativity, followed by groups based on social categories and loose associations. Some factors that distinguished between these kinds of groups were their permeability (the ease with which members may enter and leave the group) and duration (the length of time over which the group exists). Higher entitativity groups are less permeable and have longer duration than lower entitativity groups.

Sherman et al. (2002) suggest that the perception of group type precedes and influences the processing of information about group members. Given the distinctions made across different kinds of groupings in the entitativity literature, we posit that the description of a list of organizations, as an indicator of the type and degree of interaction they share, may influence how the organizations are perceived. Organizations grouped in alliances or partnerships might be considered as highly entitative because such associations may involve high levels of embeddedness (e.g., Uzzi 1996) or the sharing of resources (Gulati 1995). Brase (2001) suggests that cooperative and coordinated behavior and shared objectives are hallmarks of entitative groups. In contrast, a randomly composed set of organizations in a particular industry may be seen to represent a less entitative relationship because such a grouping is more representative of a loose association.

Hypothesis 3: A list of organizations presented as having business interactions with one another will be perceived as more entitative than a list presented as a randomly selected set.

As noted above, entitativity has been shown to be critical to the cognitive process underlying trust transfer. It is based on the perceived relationship among targets that transfer occurs (Doney and Cannon 1997; Uzzi 1996), as entitativity results in increasing homogeneity of trait and behavioral inferences (Dasgupta and Banaji 1999).

Stewart showed that perceived similarity and perceived interaction, which are hallmarks of entitativity, had a direct positive impact on trust in an unknown organization when that organization was linked to a more trusted partner. Thus we propose that the perceived entitativity of a group will moderate the transfer process such that abstracted groups traits will have a stronger effect on individual trust judgments when the group is presented in a way that indicates high entitativity than when it is presented in a way that indicates lower entitativity. Figure 1 presents our basic trust transfer model.

Hypothesis 4: Trust transfer (H1 and H2) will be moderated by group description, such that the more entitative the group description (H3), the stronger the hypothesized effect will be.

Methods

Hypotheses are tested using a 2 (list familiarity) \times 2 (target familiarity) \times 2 (list description) experiment with control conditions in which targets are presented alone rather than in a list. The experiment follows closely the methodology outlined by Stewart (2003); however, a different experimental task has been chosen in order to extend results to other contexts. Subjects are asked to assess the Website of a travel company as part of a task of choosing a vacation package. This task has been chosen because it is one in which trust is expected to be important due to price, quality, and service concerns and because it is a task commonly performed online. The *familiarity* of the target organization is varied such that the Web site is either identified with a fictitious company name, or it is identified as a site run by a well-known and trusted travel company. Aside from the logo and text displaying the company name, site content is identical across these two conditions. The target site was developed based on the functionality and design of actual online travel companies' Web sites.

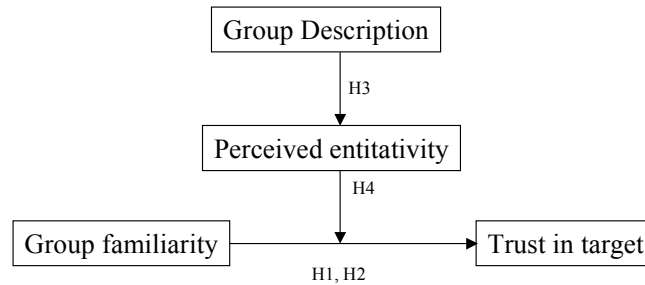


Figure 1. Model of Trust Transfer from a Group

In the control conditions, after reading instructions and answering a control variable survey (following prior work, we control for age, Internet experience, and propensity to trust; McKnight et al. 2002; Stewart 2003), subjects see only one link and are asked to click on it to evaluate the site. In other conditions, subjects see a list of links to travel companies, and they are told that each participant has been randomly assigned to evaluate one of the companies. The *familiarity of the other list members* is varied such that they are either all well-known travel companies or all unknown (fictitious) companies. The well known companies (Travelocity, Southwest Airlines, Orbitz, and Cheaptickets.com) were chosen based on their extensive advertising, their appearance on many top travel site lists, and their ties with other large business partners. The *description of the list* is varied such that it is either presented as a list of companies that work together to provide travel services or a randomly selected list of travel companies. Once the subject views the site, the procedure and questions answered are the same across all conditions.

All data is collected online using scales drawn from previous research (McKnight et al. 2002; Stewart 2003). Following Stewart, entitativity is measured using scales for perceived similarity and perceived interaction, which is operationalized as the extent to which the organizations were seen as having a business relationship with one another.

As the study seeks to test psychological effects expected to generalize across most consumers, the only significant constraint in subject selection is that participants must have access to the Internet. Thus subjects are recruited using advertisements that provide the URL of the study and a password to enter the site. Subjects are offered a chance to win a \$300 cash prize as an incentive to participate.

Preliminary Results

Pilot data has been collected from 52 subjects, who ranged in age from 18 to 31 with a mean of 21 years old, 42 percent of whom were males. Manipulation checks indicate that the group description manipulation was successful ($X^2 = 6.87, p < .01$). Similarly, 78 percent of subjects indicated that they were familiar with the known target and 94 percent indicated that they were not familiar with the unknown target. Organizations in the familiar list were, on average, recognized by 75 percent of subjects while organizations on the unfamiliar list were only recognized by 2 percent of subjects. The familiar target was generally more highly trusted than the unfamiliar target ($t = 3.9, p < .01$). Overall, the targets in the familiar list were more trusted than the targets in the unfamiliar list ($t = 3.3, p < .01$).

Initial testing was conducted using ANCOVA. To examine H1, H2, and H4, trust was entered as a dependent variable, list familiarity and list description were entered as factors, and control variables were entered as covariates. Separate analyses were run for the familiar and unfamiliar targets. For the unfamiliar target, the overall model showed a significant impact on trust ($F = 2.67, p < .05$, adjusted $R^2 = 0.29$), with significant effects for list familiarity ($F = 4.55, p < .05$) and Internet experience ($F = 16.97, p < .01$). Although pair-wise tests for the list familiarity conditions were not significant, differences between the means were in the expected direction (mean for the no list control condition = 48.89, unknown list = 45.57, known list = 53.56). The interaction effect between list familiarity and list description was not significant. Effects for the known target were not significant. Thus there was some indication of support for H1 and H2 for the unfamiliar but not the familiar target, and no indication of support for H4. Hypothesis 3 was tested using ANCOVA, entering perceived interaction as the dependent variable with list description as the independent variable and control variables as covariates. The result was not significant.

Discussion

This paper develops a theoretical model based on the literatures on trust transfer and entitativity and outlines an experimental test of that model. The research is aimed at addressing three questions relevant to the presentation of hypertext links on the WWW: (1) Does perceived trustworthiness at the group level get transferred to individual members of the group? (2) Can trust transfer result in negative effects in addition to positive effects? (3) Does the description of a group moderate the trust transfer process?

Although data collection is ongoing and the results presented here are based on a small pilot study, they are promising in that there is some support for the hypotheses regarding the impact of list familiarity on trust in a target organization. As the sample size is increased, increased power may allow us to uncover further effects of the manipulations.

When completed, we expect the study to extend the trust transfer literature beyond its current focus on positive effects in dyads and also support the applicability of the theoretical lens used to view effects of hypertext links. Given the ubiquity of such links and the relative dearth of research on how their presentation influences organizational outcomes, we believe this will constitute a significant theoretical contribution to the IS literature.

From a practical perspective, the questions addressed in this study may be important for businesses in terms of making decisions concerning the formation and online public presentation of partnerships, alliances, and memberships in other kinds of organizational groups. We expect results to indicate that such decisions may have significant impacts on levels of trust bestowed on organizations by consumers.

Web sites present a particularly interesting context for studying trust transfer for a number of reasons. Many consumers find sites by using search engines. Most sites only attempt to manipulate their placement in search results. However, this might not prove the best strategy. Our results could indicate that a better approach may be to attempt to appear on a results page with well-known companies. In addition, organizations may be advised to monitor and attempt to influence lists of links on which they appear. Such lists can be generated from trade organizations, mass media reports, and Web sites focused on specific industries. Our theory suggests that inclusion on these lists may have strong positive or negative effects on trust.

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