The Message Design Logics of Organizational Change

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This study investigated the influence of context in the production of messages by stakeholders about organizational change. We analyzed messages produced in response to hypothetical organizational change scenarios. The message production task was implemented within a 2×2 experimental design (N = 1,205) fielded at three different organizations. We included multiple replications for each manipulation, and multilevel structural equation modeling allowed for analysis across scenario replications. Results indicated that perceptions of change and context do influence message design mediated by intensity of beliefs about a change. The study extends message design logics theory and contributes to a conceptualization of stakeholder interaction during organizational change as a problem of communication design.

Keywords: Planned Organizational Change; Message Design Logics; Communication as Design; Institutional Theory

Communication strategy is an integral part of planned organizational change. Lewis's (2011) extensive review enumerated examples of the strategic choices implementers face about messages including sidedness, gain and loss framing, blanketing versus tailoring messages, balancing the tension between creating a sense of urgency and a sense that change goals can be met, and disseminating information while also soliciting input. The practitioner literature has likewise emphasized the implementer's role in disseminating information about planned change (Lewis, Schmisseur, Stephens, & Weir, 2006).

More recent efforts have reoriented attention to communication among change stakeholders, blurring the previously stark distinction between implementers and

those subject to change. Lewis's (2011) stakeholder model of organizational change communication conceptualizes planned change as driven not just by the efforts of implementers but also by how those efforts play out in complex, communicative negotiations among stakeholders. The emergent character of the sensemaking, storytelling, and framing of planned change by stakeholders (Lewis, 2011) may explain why planned change so often turns out not-as-planned (Kotter, 1996). Communication between stakeholders and implementers *and among stakeholders* does not just influence outcomes but may redefine the change and the outcomes that matter (Leonardi, 2009; Lewis, Richarson, & Hamel, 2003).

Stakeholder communication is important because organizational change is always participative to some degree. In even rigid bureaucracies, change may be resisted, disrupted, and reshaped (Lewis, 2011). Participation in planned change is inherent in democratically governed organizing such as employee-owned firms, social move-ments, cooperatives, and self-managing organizations (Stohl & Cheney, 2001). In organizations such as professional service firms, healthcare organizations, and engineering labs, knowledge workers may exert more influence on change through expertise-based power (Barbour, 2010). Stakeholder interaction is also important in nonprofits' planned change efforts where the pressure for accountability to external entities, complexity of governance, and the importance of volunteers complicate organizational change (Lewis, 2005).

The principal aims of this research were to develop a theoretical means of conceptualizing how stakeholders create messages for other stakeholders about organizational change and to explore the influence of context in message design. Messages reflect stakeholders' notions of what communication is and how it works, as well as their sense making. At the same time, message production draws on aspects of context such as organizational and institutional structures in ways that constrain and enable message design (Lammers, 2011; Lammers & Barbour, 2006). Message production offers a useful starting place for investigating interaction (Wilson, 2002). This study brings together work on message design logics (O'Keefe, 1988), communication as design (Aakhus, 2007), organizational change research (Lewis, 2011), and an institutional theory of organizational communication (Lammers & Barbour, 2006) to test a framework explaining message production that emphasizes and conceptualizes the influence of context.

As stakeholders suss out planned changes and interact with others, they create messages for other stakeholders that articulate and negotiate concerns about planned changes (Lewis, 2011). Their message design occurs in the context of their identity within the organization, their perceptions of the consequences of the change, and institutional and organizational structures. This study contributes to our under-standing of message design by fleshing out the influence of context in design while at the same time yielding insights about communication and organizational change. Although many communicative tasks are involved in interaction among organiza-tional change stakeholders (e.g., seeking information, surmising what to do), we investigated persuasive message production. Persuading stakeholders mirrors con-ceptually implementers' efforts to convince stakeholders. Further, influence is already

an important concern of organizational and message production research (Wilson, 2002).

Understanding how stakeholders design messages can also inform stakeholder interaction design. Whereas previous research has tended to focus on change agents' messages and the influence of those messages on those subject to changes, communication as design (Aakhus, 2007) prompts us to ask how interaction among stakeholders might be (re)designed to influence organizational change. Communication design is a fundamental human activity in the sense that individuals design messages every day as they communicate, but interaction—including interaction among stakeholders—is also designed even if the designers are not aware of how their choices and the context have influence. Whereas individuals design messages in the course of their daily communication, interaction design is the purview of collectives and their members—campaigners, programmers, teachers, and change implementers. Aakhus (2007) argued that collectives use interaction as a "tool for creating communication products such as entertainment, justice, contracts, plans, policies, and information" (p. 113).

Change may be seen as communicatively co-constructed in designed interaction. Barge, Lee, Maddux, and Townsend (2008) argued for the need to understand not just how implementers create messages but also "how change agents invent, conduct, and implement conversational structures that manage dualities during planned change initiatives" (p. 365). The sophistication of messages produced by stakeholders for good or ill scale up from particular conversations to become the unfolding organizational change (i.e., per the communicative constitution of organizing, cf. Kuhn, 2012; Lammers & Barbour, 2006). Well-designed stakeholder interaction may yield value beyond simple uniformity of adoption (Barge et al., 2008). Interaction among stakeholders may solve problems not foreseen by change implementers or recast changes altogether; however, opportunities to shape interaction may be short-lived and depend on understanding members' co-construction of the meanings of a change (Leonardi, 2009). This study contributes insights about stakeholders' message design to inform the design of interaction about planned change.

Message Design Logics

Message design logics is a theory of message production proposed by O'Keefe (1988), and applied to investigate regulative communication, patient–provider communication (Lambert & Gillespie, 1994), supportive relationships between supervisors and subordinates (Peterson & Albrecht, 1996), responses to sensitive disclosures (Caughlin et al., 2008), and workplace sexual harassment (Bingham & Burleson, 1989). The theory of message design logics provides a useful framework for studying message production about organizational change because it conceptualizes (1) design as fundamental to human communication, (2) message production as grounded in context, and (3) message sophistication in ways commensurate with the organizational change literature.

Aakhus (2007) argued that design is "a natural, describable activity that is evident in ordinary communicators' creativity in language use and capacity to exploit mutual knowledge and principles of interaction" (p. 113). Communicators design messages to address multiple goals in context. O'Keefe (1988) described the process of producing messages as "deriving means to serve communicative goals" even if goals are not "clear, consciously recognized objectives" but instead "socially codified representations of situations" (p. 82). Here, "goal" is meant broadly and includes, for example, the goals held by a specific communicator as well as the goals implied by a particular situation. Message designs capture the ways individuals conceptualize communication, and these conceptualizations indicate means for achieving communicative goals. Caughlin et al. (2008) explained, "the 'design logic' is what connects goals to messages (i.e., messages are designed in ways that support the logic of how to accomplish various goals)" (p. 657).

Message design is grounded in context. Communicators' understanding of the context or situation is reflected in their goals and their communication design. Communicators may "fail to adopt and pursue goals that are intrinsically relevant to a given situation" (O'Keefe, 1988, p. 82) and when communicators recognize goals, they may prioritize them differently. Communication situations also have features that structure interaction (i.e., the communicative norms of a classroom vs. a wedding), and yet the meanings of situations are socially constructed. Situations imply goals and suggest the prioritization of goals. Investigating how context can influence message design is not only theoretically justified, but it is also needed to understand message design in organizing.

O'Keefe and McCornack (1987) distinguished between simple and complex communication situations. Complex situations imply more inherent goals and present more difficulty in achieving all goals at once. For example, in giving negative feedback to a subordinate, a supervisor may want to be clear, seek compliance, offer suggestions, maintain the relationship, and help the subordinate cope. This situation is complex: Goals are implied by the situation itself, they are many, and achieving one may make achieving another more difficult.

Message design logics theory conceptualizes message sophistication in ways commensurate with the organizational change literature. In more complex situations, such as those common to organizational change (Bisel & Barge, 2011), "goal achievement is facilitated by reorganizing the communication context" (O'Keefe & McCornack, 1987, p. 74). Communication in organizational change needs to allow for reflexivity about changes, reframing the context of the change, and managing relationships in ways that negotiate multiple, divergent ends (Barge et al., 2008; Bisel & Barge, 2011). In message design logics, more sophisticated messages are those that can redefine context, more effectively manage the multiple and at times contradictory goals held by communicators, and navigate relationships. Previous studies have provided evidence that sophisticated messages are more likely to be effective in such ways (Bingham & Burleson, 1989; Caughlin et al., 2008; O'Keefe, 1992; Peterson & Albrecht, 1996).

Message Sophistication: Expressive, Conventional, and Rhetorical Logics

Message design logics theory posits three means for achieving communicative goals—expressive, conventional, and rhetorical design logics. O'Keefe (1988) argued that these logics "form a natural developmental progression" (p. 89). They may be arrayed from the least (expressive) to the most sophisticated (rhetorical).

The *expressive design logic* holds that communication is simply a "medium for expressing thoughts and feelings" (O'Keefe, 1988, p. 84). Communicators should just tell it like it is. Such messages will not consider context and will not provide elaborate justifications. O'Keefe explained, "[c]ommunication is viewed as successful to the extent that it is clear, and messages are viewed as repositories for meaning, with little reliance on depth interpretation or contextual information in assigning meaning" (p. 84).

The *conventional design logic* assumes that "communication is a game played cooperatively, according to socially conventional rules and procedures" (O'Keefe, 1988, p. 86). Communication is seen not only as a way of expressing oneself but expressions are also guided by social moirés and are intended to have specific, socially understood effects. Successful communication conforms to the social expectations for a situation, or as O'Keefe explained, "using one's conventionally defined resources effectively to obligate one's hearer, enacting the appropriate action competently, and having a competent and cooperative hearer" (1988, p. 87). Conventional messages would tend to be better elaborated than expressive messages, and elaboration will draw on socially accepted ideas. The context gives social cues and social scripts. The conventional design logic takes a stable view of context wherein social structures including "roles and norms" are "manifest to all and relatively inflexible" (O'Keefe, Lambert, & Lambert, 1997, p. 38).

A *rhetorical design logic* sees communication as "the creation and negotiation of social selves and situations" (O'Keefe, 1988, p. 87). A rhetorical logic sees context as reinterpretable and redefinable in the message. Whereas in the expressive view context is irrelevant and in the conventional view context is fixed, in the rhetorical view messages create context. Rhetorical messages would tend to (1) be well-elaborated with material relevant to the context and audience, (2) provide evidence that messages can be seen as defining or redefining self, other, and context, and (3) contain more "arguments and appeals designed to persuade the hearer that the speaker's symbolic reality is true or correct (but not necessarily legitimate or powerful or conventional)" (p. 88).

O'Keefe (1988) argued that "when no obstacles or conflicts present themselves, when simply making one's ideas or wants known to others is sufficient to the purposes at hand, all three message systems will generate similar-looking messages" (p. 91). A key preliminary question is whether the design of messages about change involves enough situational complexity to generate message variation. We asked:

> RQ1:   Will participants' messages about a hypothetical, planned organizational change vary in sophistication?

In our first question, we asked if by using message design logics, we could reliably differentiate sophistication in messages about planned change and if the study's communicative tasks were complex enough to encourage variation. We then sought to explain that variation.

Before considering message design and context, we completed a second preliminary check. O'Keefe's (1988) study of message design logics established a relationship between message design logics employed and stable individual differences (e.g., cognitive complexity, sex) as evidence of the efficacy of the approach. She found that women produced more sophisticated message designs than men. This relationship has received only partial confirmation in subsequent research (Caughlin et al., 2008). We included sex as a control and hypothesized:

> H1:   Women will produce more sophisticated messages about planned organizational changes than men.

The study thus may contribute additional clarification regarding message design and stable characteristics such as sex, but the principal focus of the study is the influence of context on message design.

Message Design and Context

To identify and conceptualize features of context, we sought facets of the experience of planned change that might complicate a stakeholder's communicative situation. Context suggests goals relevant to a situation and the relative importance of goals, and individuals may appropriate ideas from contexts including organizational and institutional structures in the production of their messages (Lammers, 2011; Lammers & Barbour, 2006). Lammers and Barbour's (2006) institutional theory of organizational communication (ITOC) is grounded in the view that communication constitutes organizing wherein actors (re)create organizations through communication and draw on social structures to do so—a view commensurate with message design as the coordination of a flow of ideas (Lammers, 2011). In creating messages, communicators create "collations of thoughts" (including institutional logics; Lammers, 2011); the process of managing that "flow of thought" reflects individuals' message designs (O'Keefe & Lambert, 1995, p. 55). Message design may be seen as a moment when communicators (re)produce organizational and institutional context in their messaging.

To explicate the myriad ways context may influence message design about organizational change, message design logics and the change literature guided the selection of factors that were conceptualized as complicating the communicative situation. Factors were included because of their previous importance in the management of organizational change, and because of their fit within the theory of message design logics. If they proved to have influence on message design, they would also represent factors that should be considered in the design of organizational change interaction. They included the perceptions of (1) the change itself, (2) concerns about its consequences for stakeholders' goals in organizing, (3) the

stakeholders' connection to their organization, and (4) status differences embedded in organizing.

Need for Change

Seeing a change as needed may complicate the communicative situation and thus influence message design. Armenakis and Harris (2002) argued that creating a sense of discrepancy is an essential function of implementers' messages about planned change: "discrepancy addresses the sentiment regarding whether change is needed and is typically demonstrated by clarifying how an organization's current performance differs from some desired end-state" (p. 170). In stakeholder messages, by extension, a sense of discrepancy, or simply a sense the change is needed, should encourage more sophisticated design. We hypothesized:

> H2:   Participants who see the change as needed will be more likely to produce more sophisticated messages.

Valence of Reaction to Change

Participants should also create differently sophisticated messages regarding changes of which they approve and disapprove. Armenakis and Harris (2002) argued that valence is important in that change may threaten stakeholders' self-interest encouraging resistance. However, resistance may not equate to sophistication, and favoring a change may in fact evoke more effort to support it. We asked:

> RQ2a: What relationship exists between favoring a change and message design?

It may be most likely that stakeholders will produce more sophisticated messages if they feel strongly in either direction. We also asked:

> RQ2b: Are the effects of favoring a change curvilinear?

Performance, Normative, and Uncertainty Concerns

Lewis's (2011) model posits that stakeholders negotiate their uncertainty, normative, and performance concerns in communication about a planned change. Whereas seeing the need for the change and favoring the change reflect stakeholders' perceptions of the change itself, these concerns reflect perceptions of how a change may or may not have consequences for stakeholders. Performance concerns represent "a heightened state of awareness of, or anxiety about, his or her ability to perform, performance-related knowledge, or performance evaluation" (Lewis & Seibold, 1996, p. 134). Normative concerns are "a heightened state of awareness of, or anxiety about, one's congruity in beliefs, actions, and values with members of social groups with which he or she strongly identifies" (p. 135). Uncertainty concerns involve "a heightened state of awareness of, or anxiety regarding, one's own and others' information access and information use" (p. 135). We hypothesized that having such concerns would encourage more sophisticated designs by complicating communicators' goals in message design.

H3a: Performance concerns will be positively related to message sophistication.
H3b: Normative concerns will be positively related to message sophistication.
H3c: Uncertainty concerns will be positively related to message sophistication.

Organizational Identification

Organizational identification reflects perceptions of the individual's connection to an organization (Scott, Corman, & Cheney, 1998). Although a full treatment of organizational identity and identification is beyond the scope of this article, it is well-understood that they may be usefully conceptualized as communicatively negotiated (Alvesson, Ashcraft, & Thomas, 2008; Ashforth, Harrison, & Corley, 2008). Organizational identification may influence message design, because message design occurs in the context of a stakeholder's sense of connection to the organization undergoing change. Miller, Johnson, and Grau (1994) hypothesized that organizational identification could operate as a need state, an antecedent to attitudes about change. They argued, "those identifying with the organization are more likely to believe in the organization's goals, trust in leadership, and consequently, be less anxious about the impact of change on their work roles" (p. 64). Organizational identification was not significantly related to anxiety about change or openness to change, but it was positively related to perceptions of the information received about the change. A highly identified stakeholder might take for granted the wisdom of a change, making the communication situation seem simple. Then again, a highly identified stakeholder might produce more sophisticated designs in service to their organization. We asked,

RQ4: What relationship exists between organizational identification and message sophistication?

Intensity of Belief in the Changes

An underlying assumption applied thus far is that the consequences of context for message design have to do with the situational complexity. Hullman's (2004) investigation of the relationship between interpersonal motives, message design, and perceptions of competence theorized that motivation should explain in part the relationship between situational complexity and design sophistication. If message designs connect means to goals, then motivation captures the intensity of individuals' desire to accomplish those goals. Simple situations evoke less sophistication in part because they involve less motivation. Hullman's study was problematic because of unmeasured interactions between experimental replications and the manipulation of motives and designs; however, motivations and message designs were related. We simplified our treatment of motivation hypothesizing that:

H4a: Intensity of beliefs regarding a planned organizational change will be positively related to message sophistication.

We also predicted that participants' intensity of beliefs would mediate the influence of other perceptions of the change and context on message sophistication:

H4b–e: Intensity of beliefs regarding a planned organizational change will mediate the relationship between message sophistication and favoring a change (H4b), message sophistication and seeing change as needed (H4c), message sophistication and concerns about a change (performance, normative, and uncertainty concerns, H4d), and message sophistication and organizational identification (H4e).

Relative Status of Audience

Status differences are a fundamental feature of organizational life. Existing applications of message design logics have argued that producing messages in mixed-status situations influences message design (Lambert & Gillespie, 1994; Peterson & Albrecht, 1996). O'Keefe et al. (1997) drew on politeness theory (Brown & Levinson, 1987) to argue that message design allows for the negotiation of the instrumental ("accomplishing whatever tasks need to be done," p. 38) and identity goals ("establishing and maintaining appropriate identities for participants," p. 38) in complex communicative situations. Accomplishing these goals requires attending to universal desires to be valued by others (positive face) and to act as we please (negative face).

Wilson (2002) argued that status differences heighten the risks for communicators attempting influence. He explained that seeking compliance always involves some threat to positive and negative face, but that the threat (to negative face especially) "is magnified in cases such as upward influence, where the target possesses greater power (e.g., formal authority, connection to powerful others, expertise)" (p. 311). Design logics offer differing solutions to the problems of negotiating face-threatening situations (O'Keefe, 1997). We hypothesized that:

H5:   Participants will produce more sophisticated messages for audiences perceived to have higher relative status.

We now turn to the methods used to investigate these research questions and hypotheses.

Methods

Participants were recruited through communication courses at three universities. Each participant was offered extra credit (1% of course grade) and received notice via their course's electronic learning system. They were directed to a website that described the study, recorded informed consent, and randomly assigned them to conditions. Participants created one message prompted by one hypothetical planned change scenario:

Imagine that [university] has recently decided to [change scenario]. Imagine that you are discussing the potential change with a specific [audience] that you know. After a few minutes of small talk, you decide that you want to try to convince this person that your position about the change is the right one. What exactly would you say or do to convince them of your position? If you would say something, write down exactly the words you would use.

Participants received unlimited space in which to write, and then completed a 65-item questionnaire.

Change Scenarios and Experimental Design

To encourage variation in message design and to make salient differing aspects of context, Lammers and Barbour's (2006) ITOC guided our creation of change scenario replications. The scenarios included a mix of changes—some more specific to the local organization under study and some relevant to universities generally. Communicators making arguments about organizational change may call on organizational and institutional structures to lend legitimacy to their arguments, though in different ways depending on the relevance of a change to particular organizations and institutions.

Organizational changes that are relevant to most similar organizations should have more taken-for-granted rationales (e.g., a university implementing regulation-mandated policy) because they are more institutional. Institutional theory conceptualizes the patterning of organizing as driven by widespread regulative rules, normative expectations, and cultural-cognitive schema (Scott, 2001). Institutions tend to endure and resist change especially from the perspective of day-to-day life in organizations. Actors can exploit institutions to mark their orthodox and unorthodox decisions as legitimate through "micro-institutional affordances" (van Dijk, Berends, Jelinek, Romme, & Weggeman, 2011, p. 1489).

However, any organizational change may reference a mix of organizational and institutional structures. For example, implementing a new student record system would involve local organizational structures (e.g., resources, history with technology, current ways of keeping records, employees' skill with new technology) and extraorganizational institutions (e.g., adoption of systems in the industry, legislation about privacy protections, adoption of records systems from other industries that may retain features that do not fit universities).

A focus on institutional and organizational context shaped multiple other aspects of the design as well: First, the investigation of message design could not be limited to any one scenario or one organization. The consideration of a variety of organizational changes in multiple organizations was needed (see the problem of institutions as hidden constants; Lammers & Barbour, 2006). Second, change scenarios could be usefully varied in terms of their relevance to local organizing versus organizing typical to an institutional field. Incorporating multiple change scenarios for each factor of interest allowed for increased generalizability to a range of potential organizational changes (Jackson, 1992).

A distinct set of planned hypothetical changes was used at three different universities. Change scenarios were generated based on interviews with informants familiar with the organizations under study. Scenarios were meaningful in that context (i.e., possible even though hypothetical). Participants had a plausible interest in the change, and they were able to exert at least some influence in the negotiated unfolding of a change.

We operationalized six organizational changes (three with more local relevance and three that might occur at any similar site) and six audiences (three higher status and three equal status audiences) per site. The resulting design had 36 conditions per site (108 overall). Local changes included, for example, eliminating a much loved orientation program for freshmen, moving a beloved landmark, and reestablishing a controversial event on campus. Changes that we envisioned as more institutional would have had local meaning, but because the changes could apply to any similar organization, they should also have implicated a larger range of institutional beliefs. They included increasing tuition and requiring fewer credits for graduation. Higher status audiences included a professor or academic advisor, whereas equal status audiences included friends and classmates.

The design blended aspects of a posttest only experiment and a scenario survey. Modeling employed measures of participants' perceptions that mediated the influence of experimental variation (O'Keefe, 2003). We were not interested in participants' reactions to particular audiences or changes per se, but we were interested in the ways that categories of audiences and categories of changes influenced their perceptions. For example, manipulating audiences should have had some influence on perceptions of relative status, but it is the perception of status that is of interest not the experimental manipulations per se. The measures of the need for the change, favoring the change, and intensity of belief in the change were developed for this study and reflect participants' perceptions across the change scenarios. Table 1 provides the text of items, reliability indicators, and descriptive statistics.

Measures of Perceptions of Change and Context (Independent Variables)

Relative status. Status may differ in many ways (e.g., hierarchical authority, functional status, tenure status). We measured power, authority, and similarity to construct an index of relative status (where a higher number reflects perceived status equality) based on previous research (Oetzel et al., 2001). Participants constructing a message for audiences in the higher status conditions were less likely to rate their audience as equal to them in power and authority and less likely to rate their audience similar to them, $F(5, 1181) = 112.80$, $p < .001$, $\eta_p^2 = .32$ (mixed-model ANOVA, audience and change as nested random factors).

Concerns about planned changes. We measured participants' concerns about change scenarios based on items developed by Lewis and Seibold (1996). We revised a number of their items and created additional items to improve reliability and fit them to this study. For example, performance concerns were construed as concerns about being able to fulfill goals generally to fit students as stakeholders in a community where particular goals vary.

Organizational identification. Controversy surrounds the measurement of organizational identification and related concepts (Miller, Allen, Casey, & Johnson, 2000)

Table 1 Items and Descriptive Statistics

Item	Mean	SD	ICC
Message sophistication (dependent variable)	2.03	0.58	0.03
Intensity of belief about the change ($\alpha = .82$)			
How strongly do you feel about this change?	4.26	1.35	0.10
How likely would you be to take action to support or resist this change?	3.86	1.43	0.09
Need for the change ($\alpha = .88$)			
[Organization] needs to make this change.	2.57	1.65	0.33
I think this change would have a positive effect on [organization].	2.87	1.68	0.33
Favor the change ($\alpha = .88$)			
This change is a good idea.	2.81	1.75	0.33
I am in favor of this change.	2.73	1.77	0.34
Uncertainty concerns ($\alpha = .85$)			
I am concerned I do not have enough information about this change.	4.15	1.41	0.09
I feel very unclear about what the change would mean.	3.52	1.42	0.05
I am concerned I do not understand how the change would affect me.	3.37	1.43	0.06
Performance concerns ($\alpha = .79$)			
I am concerned about how my participation in the change might influence my success at [organization].	3.21	1.53	0.15
I am worried about my ability to achieve my goals at [organization] given this change.	3.01	1.60	0.22
How this change might influence my ability to achieve my goals at [organization] matters quite a lot to me.	4.16	1.56	0.16
Normative concerns ($\alpha = .89$)			
I am worried that the change will affect traditions at [the organization].	3.67	1.76	0.34
I am concerned that the change might alter the way things are supposed to be at [the organization].	3.78	1.55	0.22
I am concerned that the change could alter the values of [organization].	3.43	1.58	0.18
Organizational identification ($\alpha = .86$)			
When someone criticizes [organization], it feels like a personal insult.	4.58	1.27	0.08
I am very interested in what others think about [organization].	4.62	1.13	0.08
When I talk about [organization], I usually say "we" rather than "they."	4.87	1.20	0.18
[Organization]'s successes are my successes.	4.61	1.17	0.16
When someone praises [organization], it feels like a personal compliment.	4.84	1.10	0.13
If a story in the media criticized [organization], I would feel embarrassed.	4.34	1.26	0.08
Relative status of audience for message ($\alpha = .88$)			
If you have equal power with the person you imagined choose 6, or unequal power choose 1.	4.04	1.82	0.32
If you have equal authority with the person you imagined choose 6, or very unequal authority choose 1.	3.99	1.89	0.34
If you are very similar to the person you imagined choose 6, or very dissimilar choose 1.	4.00	1.89	0.18

Note. Each of the items used 6-point Likert-type rating scales. Cronbach's alpha is reported as an indicator of reliability.

and its myriad explications (Ashforth et al., 2008). Such richness should not be surprising, given the importance of the individual–organization connection for organizational research (Scott et al., 1998). Our use of the concept was simplified to offer a robust measure of participants' connection to their organization but it was not the principal focus of the study. We used Mael and Ashforth's (1992) well-validated and often-used measure.

Measure of Message Sophistication: Coding Message Design Logic (Dependent Variable)

We categorized participants' messages as expressive, conventional, or rhetorical, adapting previous coding schemes (Caughlin et al., 2008; O'Keefe, 1988). Because participants were asked to convince, the coding scheme paid particular attention to justification. We also considered how the messages dealt with the context for the change (if at all) and construed relationships between the communicators.

Messages reflecting an *expressive design logic* were relatively less well elaborated. Expressive messages included direct statements of the participant's stance without elaboration, and messages that adopted a hostile tone, provided only a self-serving justification, or provided irrelevant or redundant content (e.g., "This change is dumb," "We should not increase tuition!" "This is a commuter campus. Either have parking or more dorms.")

Messages reflecting a *conventional design logic* offered at least some justification, and appealed to socially accepted ideas about the change. These messages made use of social scripts and, when entertaining counterarguments, they dismissed them based on accepted beliefs about the situation. These messages appealed to social norms while assuming a shared understanding of context (e.g., "[Our university] is strongly based in traditions . . . [it] should never change," "Online classes and satellite classes make schooling available for people of all ages . . ."). Although the messages reflected convention, they made little explicit reference to the relationship between the communicators or the characteristics of the audience.

Messages reflecting a *rhetorical design logic* offered well-developed justification. These messages contained explicit reference to and redefinition of the context, the relationship between communicators, or the characteristics of the audience. The justifications were offered in terms of the audiences' needs as well as the needs of the community. The messages sometimes tried to redefine the change itself, and participants using a rhetorical logic sometimes took a stance counter to their own beliefs (e.g., I don't personally agree with X, but I can see how it would be beneficial . . .). The messages engaged counterarguments, and offered specific strategies for making a change work (e.g., ". . . student life styles could be more balanced and they could get more involved . . ."). They framed the context explicitly (e.g., "I would tell people that the place of this [landmark] is a tradition at our school. As we do not have as many traditions as other schools, this is one thing that has not changed and should not be changed . . .").

Messages were coded holistically (i.e., the entire message was the coding unit). We first independently reviewed a random sample of 10% of the messages and discussed discrepancies. We repeated this process with two additional random samples, refining the coding scheme and improving intercoder reliability. Two authors both coded all remaining data and met periodically with the entire research team to discuss coding and come to consensus on discrepancies. This iterative process addressed coder drift while maintaining the independence of coding decisions. Reliability was assessed using weighted kappa (Cohen, 1968) to capture the coding discrepancies on an

ordinal scale. The final intercoder reliability was very good (*observed agreement* = 88%, *weighted* κ = .81).

Results

Across the samples, the response rate (RR) was 62.0%, and the rate of cooperation (RC) was 70.4%. The number of participants, response rate, and rate of cooperation varied across the research sites—a large, public university in the rural south ($n = 594$, $RR = 62.0\%$, $RC = 75.2\%$); a small, private institution in the urban south ($n = 216$, $RR = 55.3\%$, $RC = 71.1\%$); and a medium-sized, public, commuter university in the urban Midwest ($n = 395$, $RR = 66.1\%$, $RC = 70.4\%$). Calculating an exact response rate was difficult. Participants may have been enrolled in more than one class (meaning that the total number of recruited participants was lower), though they could not receive credit for and were discouraged from repeat participation. We report the most conservative estimates.

Participants were likely to be female (60.6%), to be a member of a student group (59.3%), and to be enrolled full time (96.5%). They ranged in age from 18 to 69 years ($M = 21.84$, $SD = 4.02$). The sample included participants in the first year (22.7%), second year (26.1%), third year (25.7%), and fourth year or more (23.4%) of study. Participants' ($N = 1,205$) messages ranged in length from 10 to 2,719 characters ($M = 272.15$, $SD = 213.75$). The number of participants in each condition was uneven (median = 10, $M = 11.15$, $SD = 5.46$).

Although we recruited participants in communication courses, the diversity of the sample was improved because we recruited in classes open to other majors. Studying communication phenomena with communication majors may be particularly problematic, because they may be more sensitive to issues such as audience and message design. The most common major (32.2%) involved communication, but students majoring in business (25.6%), university studies (6.1%), engineering (5.5%), education (4.8%), and health (3.8%) also participated. A Mann-Whitney U-test indicated that communication majors ($M = 1.35$) were no more or less likely than other majors ($M = 1.46$) to produce more sophisticated messages, $U = 158,915$, $z = -0.699$, $p = .48$.

Variation in Message Design

The first research question gauged the applicability of the message design logic framework to messages about organizational change. Most messages produced reflected a conventional design logic ($n = 791$, 65.6%), followed by rhetorical ($n = 225$, 18.7%) and expressive ($n = 189$, 15.7%). A binomial test (Fleiss, Levin, & Paik, 2003) indicated that the proportion of logics varied significantly ($p < .001$), and the robustness of the coding scheme confirmed the applicability of message design logics to message production about organizational change.

Hypothesis 1, that women would produce more sophisticated messages than men, was not supported (despite having ample power for detecting even small effects, for

Cohen's $d = .20$, $1 - \beta = .949$). Women were not more likely than men to produce sophisticated messages, $U = 163,454$, $z = 0.916$, $p = .360$. We also included sex as a control in the multilevel structural equation model discussed later, with the same result, $b_{H1} = 0.024$, $SE = 0.035$, $p = .491$.

Multilevel Model Building

The remaining analysis departed from previous approaches. An essential concern in the analysis of our change scenarios was capturing and controlling for the differences between the scenarios in this study to eliminate potential confounds between the particulars of the scenarios and factors of interest (Jackson, 1992). That is, our interest was perceptions of changes and context that cut across the scenarios. Multilevel structural equation modeling (MSEM) allowed for the disambiguation of variation attributable to individuals' perceptions of changes and context and variation attributable to the idiosyncrasies of scenarios producing more accurate parameter estimates and tests of statistical significance. MSEM also offered additional advantages, including the robust treatment of measurement error and model estimation despite missing data and unequal participation in conditions (Hox, 2010). The magnitude of the intraclass correlation coefficient (ICC) indicates the degree to which variation was attributable to participants seeing the same scenario. ICCs ranged in our data from 0.02 to 0.34, indicating that measures did vary from scenario to scenario. That variation could be explained in part by individuals' perceptions across scenarios but also in part by perceptions of the particular scenarios themselves. To make inferences across scenarios, we constructed a MSEM using Mplus 6.11 with full information maximum likelihood estimation (Hox, 2010; Muthén, 1994).

Data screening. Before building the model, we screened the data. The univariate measures of skewness or kurtosis met recommendations (West, Finch, & Curran, 1995). Mardia's measures of multivariate skewness, $b1 = 37.63$, $p < .01$, and kurtosis, $b2 = 765.99$, $p < .01$, were significant; however, ML estimation has been shown to be robust despite departures from multivariate normality for large samples (West, et al., 1995). The data had few missing values. Missing data ranged from 0.00% to 1.99% per variable. ML estimation used all available data, an appropriate approach when data are missing at random (Alison, 2002)—a reasonable assumption in this case. Variables were grand mean centered.

Overall model fit. To address nesting within scenarios, we specified models at only the within or individual level of analysis (see Figure 1), leaving the between model unspecified (Muthén, 1994). We report the chi-square test of model fit, but, given its problems, we report the standardized root mean squared residual (SRMR) and the root mean squared error of approximation (RMSEA) and use values 0.08 and 0.06
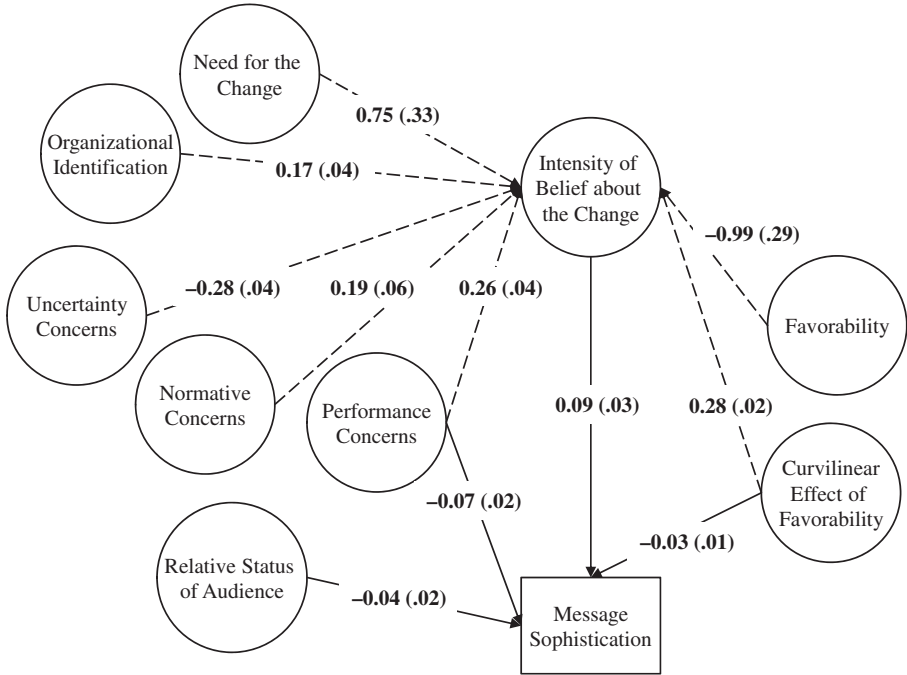
Figure 1 Model of direct and indirect effects on message sophistication. Path coefficients are unstandardized. Standard errors are in parenthesis. Paths predicting intensity of beliefs are dashed. Paths predicting message sophistication are solid. Only statistically significant relationships are depicted.

respectively as indicative of good fit (Holbert & Stephenson, 2008; Marsh, Hau, & Wen, 2004).

We tested the measurement model before testing the structural model. The measurement model was consistent with the data, $\chi^2(273, N=1,205) = 871.0$, $p < .001$, SRMR $= 0.041$, RMSEA $= 0.043$ (90% CI $= 0.040, 0.047$); as was the structural model, $\chi^2(263, N=1,205) = 829.1$, $p < .001$, SRMR $= 0.038$, RMSEA $= 0.042$ (90% CI $= 0.039, 0.046$). The modification indices of the structural model suggested small improvement by removing an item from the performance concerns index. We retained it, given its use in previous research and theoretical value. Overall, the model explained a small proportion of the variability in sophistication ($R^2_{MDL} = 0.05$), and a large proportion of the variability in the intensity of belief about changes ($R^2_{INTENSITY} = 0.42$).

Direct relationships. The hypotheses predicting direct paths between perceptions of a planned change and message sophistication received mixed support. There was no direct support for our hypothesis that participants believing that a planned change was needed would encourage the production of more sophisticated messages, $b_{H2} = -0.266$, $SE = 0.179$, $p = .138$. We tested for curvilinear relationships between

favoring (or not) a change and message sophistication. We compared the nested models with and without the addition, and the addition produced a significantly improved fit, $\chi^2 = 308.57$, $df = 2$, $p < .001$. The relationship between favoring the change and message sophistication was curvilinear. An initially positive relationship, between favoring a change and message sophistication leveled off asymptotically $b_{RQ2b} = -0.028$, $SE = 0.012$, $p = .017$. Participants who felt a little favorable produced more sophisticated messages than participants who felt a little unfavorable, but as feelings of favorability increased the relationship with sophistication diminished.

The results regarding Hypotheses 3a, 3b, and 3c were mixed. Reporting performance concerns was related to message sophistication, $b_{H3a} = -0.066$, $SE = 0.023$, $p = .004$, but not as expected. Participants reporting performance concerns produced *less* sophisticated designs unless those concerns intensified their beliefs about the issue (see the discussion of mediation below). Reporting normative or uncertainty concerns was not directly related to message sophistication, $b_{H3b} = -0.017$, $SE = 0.024$, $p = .485$; $b_{H3c} = -0.021$, $SE = 0.023$, $p = .376$. We also asked what relationship existed between organizational identification and message sophistication, but there was no significant relationship, $b_{RQ3} = 0.033$, $SE = 0.021$, $p = .121$. We did find support for our hypothesis that the intensity of beliefs regarding a change would be positively related to message sophistication, $b_{H4a} = 0.151$, $SE = 0.053$, $p = .004$. Intensity of beliefs proved the strongest single predictor of message design and a mediator of other variables.

We hypothesized that participants would produce more sophisticated messages for audiences they perceived as having relatively higher status. A significant direct path between relative status and sophistication ($b_{H5} = -0.039$, $SE = 0.019$, $p = .040$) supported this hypothesis. Participants produced less sophisticated messages when they perceived their audience as having a relatively equal status. (Not surprisingly, those in the relatively higher status conditions produced more sophisticated messages, $U = 170,898$, $z = 2.021$, $p = .043$.)

Mediation. The model offered strong evidence of the mediating role of intensity of beliefs. We tested for specific mediation between variables using the products of coefficients approach (Holbert & Stephenson, 2003; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). We found as hypothesized (H4b) that intensity of beliefs mediated the relationship between favoring a change and message sophistication, z-score product $[zsp] = 59.589$, $p < .01$. The relationship between favoring a change and intensity of beliefs was curvilinear such that the relationship intensified at higher magnitudes of favoring *or* not favoring the change. The valence of support for a change thus had direct and indirect curvilinear relationships with message sophistication. Intensity of beliefs also mediated the relationship between message sophistication and seeing a change as needed (H4c), $zsp = 7.969$, $p < .01$, performance, normative, uncertainty concerns (H4d), $zsp_{pc} = 21.616$, $p < .01$, $zsp_{nc} =$

15.347, $p < .01$, $zsp_{uc} = -21.981$, $p < .01$, and organizational identification (H4e), $zsp = 14.719$, $p < .01$.

Discussion

This study contributes an extension of message design logics theory, a conceptualization and empirical confirmation of the influence of context on design, an application of message design logics to organizational change, and insights useful for the design of interaction about change. Context acted through perceptions of (1) the change itself, (2) concerns about its consequences for stakeholders' goals in organizing, (3) the stakeholders' connection to their organization, and (4) status differences embedded in organizing. The study also contributes a focus on *actual* messages produced by stakeholders. The Discussion frames the results in terms of contributions to the study of message design and stakeholder interaction design.

Motivation Mediates the Influence of Context on Message Design

A principal contribution to the study of message design is confirmation of the mediating role of intensity of beliefs. Intensity of beliefs about a change mediated relationships between message sophistication and favoring (or disfavoring) the change; seeing the change as needed; performance, uncertainty, and normative concerns; and organizational identification. The direct and indirect curvilinear relationships between favoring a change and sophistication painted a fascinating picture of the ways valence influences intensity of beliefs about change and message design. Higher magnitudes of being for *or against* a change had positive effects on intensity of beliefs and indirectly on sophistication. This relationship is not surprising; however, the direct, asymptotic, curvilinear relationship between favorability and message sophistication was. As favorability became stronger, the relationship with sophistication leveled off. Support for a change was positively related to message sophistication but only to a point. Future research should disambiguate the ways valence operates at different magnitudes.

Organizational identification influenced sophistication when it was related to an intensity of beliefs about the change. Those identifying more strongly with the organization were more likely to feel intensely about a particular change and thus more likely to produce sophisticated messages. Aspects of motivation in message design are not limited to perceptions of the change itself, but also to other features of context including individuals' perceptions of their connection with an organization.

Performance, normative, and uncertainty concerns influenced sophistication through intensity of belief. Only performance concerns had a direct influence on message sophistication. We had hypothesized that these concerns reflect perceptions of how a change may or may not have consequences for stakeholders. Although that may be true to the extent that these concerns influenced intensity of beliefs, our conceptualization was incomplete. It might be the case that having an overwhelming burden of concern might prompt individuals to give up and employ less sophisticated

designs. Performance concerns, for example, had the expected effect when they coincided with increased intensity of beliefs about the change.

As expected, reporting normative concerns was positively, though indirectly, related to message sophistication. Participants who were concerned about how a change was inconsistent with norms were more likely to feel intensely about the change and produce more sophisticated messages. Reporting uncertainty concerns, however, had an indirect, but *negative* effect on message sophistication. It may be that uncertainty concerns meant they had a poor understanding of the hypothetical change limiting how strongly they could feel about the change and the sophistication of their messages about the change.

Uncertainty is not uniformly or simply related to motivation in communication (Kramer, Dougherty, & Pierce, 2004). Uncertainty management theory (Brashers, 2007) contends that how we manage uncertainty depends on how we appraise it. Appraisals may prompt efforts to alleviate uncertainty concerns or inaction or action to maintain or increase uncertainty. Future research should incorporate measures not just of the experience of uncertainty but also the appraisal of that uncertainty for message design.

Having performance concerns in and of themselves also encouraged less sophisticated messages *unless* those performance concerns translated into intensity of beliefs about the change. One plausible explanation for these results may be that those with high performance concerns possessed less self-efficacy or were weaker communicators in some cases. Future research should clarify why performance concerns are or are not motivating and the relationship of those concerns to self-efficacy. Conceptualizations and operationalizations of uncertainty, normative, and performance concerns should disambiguate (1) simply having uncertainty, seeing norms as changing, and lacking self-efficacy or seeing performance as implicated by change, and (2) feeling concerned (or excited, or hopeful, or in denial) about uncertainty, changing norms, and performance.

Message Design Involved Multiple Levels of Experience

These findings yielded another contribution to the study of message design—confirming that message design involves multiple levels of experience. Communicators elected more sophisticated designs in communicating about organizational change when speaking with someone they perceived as having relatively higher status. Status differences may have made additional identity goals relevant. Status differences caused more sophisticated design per message design logics theory, and that raises interesting questions for the design of mixed-status interaction about organizational change (see discussion of stakeholder interaction design below).

It is also of note that communicators generated more sophisticated messages when communicating about organizational changes that we had conceived of as organizationally local. A Mann-Whitney U-test indicated that participants in the so-called local conditions produced more sophisticated messages than those in the institutional conditions ($U = 166,847$, $z = 2.86$, $p < .01$). Participants creating

messages about changes we had intended as local were less likely to produce expressive messages (37.6% of the expressive messages appeared in the local conditions). Conventional messages were somewhat more common in the local conditions (54.2%) as were rhetorical messages (52.8%). Any particular organizational change evokes a mix of institutional and organizational structures, so the manipulation of local organizational versus institutional relevance, although methodologically useful, raises more questions than it answered.

Future research should unpack how stakeholders design messages drawing on institutional and organizational context. The potential effects of organizational and institutional contexts not considered include the specific discursive resources offered by the contexts. The variables considered here had relatively small effects on message sophistication; however, in our coding of the messages, we were struck by the prevalence of not just the same arguments but in many cases the same language used to make the same arguments. Institutional and organizational structures may offer the discursive resources that explain those similarities.

Message Design Applied by Individuals and Apparent in Messages

The results also pointed to the value of disambiguating message design logics as part of individuals' message production and as a feature of messages themselves. Message design logics represent individuals' mental models of how communication works, but message design logics may also be seen in messages. Messages reflect designs, and individuals employ designs. More sophisticated communicators (those who have the more sophisticated mental model) are able to make more sophisticated messages. Simple situations may elicit no rhetorical messages, because even individuals capable of constructing them would use less sophisticated designs. Recognizing and addressing this duality may be useful.

Findings regarding sex and message design bear on the problem. The lack of a reliable relationship between message sophistication and sex may be because the sex of the audience was ambiguous, or sex differences may depend on the message design task. However, support would have provided evidence that "message design is a stable knowledge structure within any individual" (O'Keefe, 1988, p. 97). Yet, the inconsistent findings regarding sex and message design in this study and others may reflect that we have been asking if women or men are more likely to make more or less sophisticated messages when we should have also asked if they are more or less likely to see the need for sophistication. Future research needs to explore interactions between message design as an ability that people have and message design logics as ways of thinking about communication that are reflected in the messages people produce. These conceptualizations are commensurate, but the distinction warrants attention. An extension of message design logics theory might ask not only if more sophisticated individuals can design more sophisticated messages, but also if they can identify when more sophisticated messages are warranted.

Stakeholder Interaction Design

Whereas most research on organizational change has predicated outcomes on the interests of implementers, this study shifts focus from the interests of implementers to stakeholder interaction itself. Taking a communication as design perspective warrants research drawing on the insights in this study that investigates interaction designed to encourage more sophisticated messages about organizational change. The variables measured in this study represent the sorts of issues that designers should consider. Such research could investigate the links between the design of interaction processes, resulting message design and conversations, and change outcomes.

Although we see this shift as just and intellectually interesting, the utility of these results rests on a prosaic conception of stakeholders. The degree to which stakeholders will want more sophisticated interactions in the first place likely varies. We have assumed that encouraging more sophisticated message design is in and of itself valuable because doing so may improve stakeholder interaction and the unfolding change, but Lewis (2011) argued, "stakeholder groups may perceive that their stakes are best met by having a more dominant role in the change initiative and be less willing even than implementers to consider an adaptive approach to implementation" (p. 151). The results raise ethical concerns, because interaction might be designed to discourage sophistication. Still, the findings have value for those interested in designing stakeholder interaction more likely to produce sophisticated message design.

Motivation in interaction design. Stakeholder interaction design should consider perceptions of changes in terms of influence on motivation. Assessment of these factors before implementation can not only inform messaging but also stakeholder interaction design. First, interaction design needs to create space for the negotiation of discrepancy in ways that are motivating. It was not uniformly motivating—an insight important for change research. Second, favoring and not favoring a change influenced sophistication when it was motivating, but the direct positive relationship of supporting a change on message sophistication leveled off. Support may be necessary but is not wholly sufficient in implementation (Leonardi, 2009). Although the direct relationship indicated that being against a change was related to less sophisticated messages, being *against* a change indirectly encouraged sophisticated message design through intensity of beliefs. Stakeholders who might be dismissed as resistant may nonetheless make sophisticated contributions to the extent that being against a change translates into intensity of belief. Third, interaction seeking sophistication in message design should be framed in ways that (1) make the change relevant to performance in ways that are motivating, (2) connect to the norms of the organization, and (3) provide information about the change while influencing uncertainty appraisals of that information. Fourth, the stakeholders' connection to the organization also acts on message design through intensity of belief and should be considered.

Status differences create a stakeholder interaction design paradox. Participative processes might be organized so that stakeholders of relatively equal status collaborate. This choice may be preferable because it may reduce the face threats in participation and lessen the political consequences of sharing ideas, yet the *absence* of status differences results in less sophisticated messages. The presence of status differences may raise the stakes in ways that can be uncomfortable and politically dangerous but doing so yields more sophisticated messages—a paradoxical tension that may inform interaction design about organizational change.

Limitations

A few important limitations merit attention. The study was predicated on the assumption that sophisticated messages would scale up in organizing. Though we argued that this was a theoretically justified assumption, our results do not offer evidence confirming that assumption. The study did not measure interaction or previous conversations participants may have had about a change—likely sources of robust predictors of message sophistication. The study focused on the messages produced by only one particular stakeholder group and considered only one communicative task (convincing others) that may not have made sense in situations where participants were uncertain about the change.

The sample allowed us to manipulate specific changes in meaningful ways. We took steps to ensure that the changes would be plausible and relevant. Students were stakeholders (or at least they could realistically imagine what it would be like to be one), but their ability to influence such changes directly may be limited. Students may also have had limited experience with organizational change, including for example, exposure to the ideology of continuous change that pervades many organizations (Zorn, Page, & Cheney, 2000).

For some of the changes, students may not have seen a connection to their own goals increasing measurement error. An analysis of the reliability of measures within audiences and changes revealed that all of the measures were still reliable except the measure of performance concerns was not for three changes. Removing those conditions and redoing the analysis yielded very similar results. The magnitude and direction of path coefficients were unchanged, and the model fit and variance explained were nearly identical.

Conclusion

Message design may be seen as a moment when communicators (re)produce context in organizing. Message design research attending to context should disentangle design sophistication as an attribute of messages (and the ability to design them) and of individuals (especially the ability to see the need for sophistication). This study joins efforts shifting focus from the concerns of implementers to stakeholder interaction itself, and this shift raises theoretical questions and ethical concerns about the negotiation of power and meaning in stakeholder interactions. The study

contributes to change research by investigating factors that matter for intensity of beliefs about change and thus message sophistication. These factors can inform the design of stakeholder interaction. Communicators who identify with an organization may not necessarily produce more sophisticated messages, although identification may operate through intensity of beliefs about the change. Status differences create a paradox for design that must be negotiated, and being against as well as for a change may contribute to the sophistication messages during interaction confirming the need to reconsider resistance in change processes.

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