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Organizational Communication Design Logics: A Theory of Communicative Intervention and Collective Communication Design

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Theorizing communication as design can support the development of theories of intervention by focusing attention not just on how groups, organizations, and communities communicate, but also on how they make and try to enact choices about their communication. We posit a theory of organizational communication design logics aimed at clarifying how collectives intervene in their own communication. We argue that collective communication design (CCD) is comprised of (a) individuals' overlapping communication designs, focused on goals and governed by communication design logics, and (b) the fit, function, and fragmentation of collectives' communication proposals and choices. Future research guided by this theoretical framework should explore the communication skills associated with CCD and the influence of power, authority, emotion, and temporality in CCD.

Keywords: Design, Logics, Tensions, Intervention, Practical Theory, Collective Communication Design.

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Individuals, groups, organizations, and communities try to make choices about how they will communicate, try to implement those choices, and, in doing so, engage in communication design (Aakhus & Jackson, 2005; Jackson & Aakhus, 2014). Put another way, they try to intervene in their own communication. The potential and possibilities of communicative intervention—of efforts to solve problems with and through communication—set the discipline apart (Craig, 1999; Deetz, 1994). Broad disciplinary impulses to create and apply theory to improve communication, to identify or develop effective communication strategies, and to "generate new possibilities for action" (Barge & Craig, 2009, p. 55) emphasize, in

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particular, a focus on communication practice and practical theory. As practical theories of "engaged reflection" (Barge & Craig, 2009, p. 65), communication as design (CAD) approaches are particularly useful in these efforts, because they bring analytical attention and resources to the processes of "structuring, shaping, and conditioning discourse" (Aakhus, 2007, p. 113). The purpose of this article is to specify a theory of intervention—of collective communication design (CCD)—that focuses on the process of making and implementing choices about communication.

This project was motivated in part by a puzzle encountered while we conducted a study of safety oversight processes at the U.S. Nuclear Regulatory Commission (NRC). Our investigation focused on the resident inspector program (Barbour & Gill, 2014). Resident inspectors (RIs) work onsite at nuclear power plants to provide independent verification of information provided by the plants to the NRC. To do so, RIs gather and make sense of information at the plants and share it with their counterparts and leadership at regional offices. They establish and maintain communication processes, such as routine safety meetings, to manage information. We observed their communication, their communication about their communication, and the dynamics between these two related but distinguishable phenomena. In conversations with the participants about what we were observing, what our observations might mean, and what actions they wanted to take as a result, this puzzle struck us: even when organizational members agreed about the wisdom of a particular approach to communication (and they did not always agree), they were not always able to carry off their desired approach. The theorizing at hand reflects our efforts to explain why this might be.

Understanding the difficulties in collectives' efforts to discipline their own communication is especially important in organizational communication scholarship. It has long emphasized the need to explain and offer practical advice for improving organizational processes and practices (Tracy, 2016), for example in managing organizational change (Lewis, 2011), addressing pressing social problems through organizational action (Deetz, 2008), and navigating the complex tensions and contradictions that permeate social life (Putnam, Fairhurst, & Banghart, 2016; Trethewey & Ashcraft, 2004). Tracy (2016) called for scholarship that excels not only at "describing, analyzing, and theorizing" phenomena, but also at realizing "masterful ways of organizing" and "preferred organizational communication practices that achieve desired outcomes" (p. 3). Underscoring the stakes, scholarship has also demonstrated that collectives' efforts to intervene in their own communication can be counterproductive, reifying the very structures in need of redress (e.g., Thackaberry, 2004). Illuminating the mechanisms through which collectives shape what and how they communicate can help address Tracy's call by drawing on and extending CAD theory.

CAD prompts us to consider not only how and why communication messages, flows, formats, and tools emerge and are, but also how and why such communicative phenomena are designed and influence the interactivity that comprises organizational life (Aakhus, 2007; Jackson & Aakhus, 2014). Whether knowingly or unknowingly, when people communicate they are also making choices about how

they communicate. Those choices about communication influence and are influenced by organizing, an idea that is also central to the broader disciplinary effort to understand communication as constitutive (Ashcraft, Kuhn, & Cooren, 2009; Cooren, 2004; Craig, 1999; Deetz, 1994; Taylor & Van Every, 2000).

For example, constitutive approaches to the study of the tensions, contradictions, dialectics, and paradoxes that are part and parcel of relating and organizing (Baxter, 2011; Tracy, 2004) emphasize understanding how they are negotiated in "discourses, social interaction processes, practices, and ongoing organizational activities rather than actors' cognitions or large-scale systems" (Putnam et al., 2016, p. 3). Likewise, discursive approaches to organizational change highlight that changing organizing by modifying existing conversations or introducing new ones offers resources for disrupting and reflecting on the status quo, and generating alternatives can inspire new forms of organizing (Bushe & Marshak, 2015; Lewis, 2011). Even institutional structures can be challenged and changed through communicative intervention (e.g., Barbour & Manly, 2016; Seo & Creed, 2002).

Treating communication as design can offer a useful conceptualization of the interaction between communication and context, actors' struggles with the material realities of communicating, and the roles of creativity and agency in processes that are constrained by organizations and institutions. "Design choices reveal how positions, whether explicit or implied, are taken about how interaction can and should lead to particular, preferred forms of communication for organizing" (Aakhus & Laureij, 2012, p. 42). Taking a CAD approach, we can identify critical junctures through which organizational members make interventions in organizing (Harrison, 2014), and determine how those interventions negotiate (a) the multiple goals and demands inherent to organizing and (b) the influence of differing communication logics (Aakhus & Bzdak, 2015; Aakhus & Rumsey, 2010). CAD approaches need frameworks that link cognitive, communicative, organizational, and institutional phenomena by conceptualizing both the cognitive underpinnings of actors' (re)production of organizational and institutional structures and how embedded choices about communication scale up (Fairhurst & Putnam, 2004).

The goal of this article is to provide such a framework by formulating a theory of CCD that brings together individual-focused theory of communication design, message design logics (Barbour, Jacocks, & Wesner, 2013; O'Keefe, 1988), and tensional approaches to the study of organizing (Putnam et al., 2016; Trethewey & Ashcraft, 2004). We contend that the puzzle of the inspectors' struggle to realize desired approaches to communication may be about recognizing that such complex organizational problems involve multiple, conflicting goals and are not easily answered and set aside, but require ongoing renegotiation and problem solving (Tracy, 2004; Trethewey & Ashcraft, 2004). In thinking through this puzzle and formulating a theory of CCD, we seek to answer two guiding questions: (1) how do collectives design communication and (2) why are particular collective designs more or less successful?

We begin by providing a rationale for theorizing CCD along these lines, by situating it in the relevant literature. We then forward theoretical propositions to

articulate a theory of CCD, focusing first on the scaling up of individual communication design and then on the collective negotiation of choices about communication. To illustrate the propositions, we draw on the case of safety oversight work and other research examples, though a formal analysis of the NRC study data is not the aim here. We discuss the factors that shape the circulation and operation of choices or proposed choices about communication and conclude by arguing that the efficacy of CCD is influenced by the sophistication of communicators' underlying design logics.

Situating collective communication design

Communication design involves "reflective engagement with a circumstance using communication concepts and methods to figure out how to make forms of communication possible that were once difficult, impossible, or unimagined" (Aakhus, 2007, p. 116). Communication design encompasses both design activity, or the "intentional creation of a communication interaction, system, or process," and objects of communication design, or the "elements of content, structure, and order that exist separate from the intentional process of creation" (Harrison, 2014, p. 2). CAD scholarship reflects interest in applying design theory and thinking (Nelson & Stolterman, 2012) to understand and critique but also reimagine communication phenomena. Examples include studies of online support communities (Aakhus & Rumsey, 2010), health campaigns (Harrison, 2014), public deliberation and stakeholder engagement processes (Aakhus & Bzdak, 2015; Sprain, Carcasson, & Merolla, 2014), the temporal pacing of work (Ballard & McVey, 2014), and interactive learning spaces (Thompson, Steier, & Ostrinko, 2014). Collectives are a locus of design activity (Aakhus, 2007; Nelson & Stolterman, 2012), and this CAD scholarship makes clear the need for theoretical efforts aimed at conceptualizing how individuals, teams, and organizations design communication.

In our study of safety oversight processes at the NRC, we observed and discussed in interviews not only the processes of communication involved in managing information about plants, but also the efforts of RIs to shape these processes (Barbour & Gill, 2014). The study took place in power plants and a regional office. Each plant is staffed by 2–3 RIs and a part-time administrative assistant, and the regional office is staffed by inspectors, administrative assistants, and leadership. Plants are organized into branches, and each branch is represented at the regional level by a branch chief and 2–3 project engineers. When shadowing the inspectors, we conducted simultaneous observations of the day-to-day work of the inspectors at a plant and their branch staff at the regional office (one researcher in the regional office and another at a plant), for six different plants. We also conducted informal field interviews and evening research team conference calls to share stories and compare field notes. We supplemented the shadowing with formal field interviews ($N = 29$), a preliminary findings workshop, and additional member checks. In total, the investigation involved approximately 380 hours of observation.

RIs, the branches, and senior leaders at the NRC made choices about the meetings and conference calls through which they communicated, including who would talk when, what the contents of reporting would include, how reporting should be shared, and when meetings/calls would occur. They questioned, discussed, and tested alternatives relevant to these choices and other "designable features of status meetings" (Barbour & Gill, 2014, pp. 177–182). Examples included a discussion around replacing teleconferences with video conferences, or replacing them altogether with an online discussion board and knowledge management systems supplemented with email. They reflected on how much to share in meetings and how to share it, navigating tensions, for instance, between sharing too much and too little, as well as expectations of certainty alongside the reality of ambiguity inherent in their work (pp. 182–185).

We observed oscillating and overlapping cycles of both communicating and trying to change, hone, and improve the process of communicating (see Figure 1). The inspectors "problematized" their communication: they were aware that they faced complex challenges and understood the difficulties of continuous mindfulness and vigilance. They held varied ideas about how communication ought to work, which they drew on as they talked with each other about how they should communicate and as they evaluated their communication. They crafted new approaches to communication as they made decisions about what innovations they wanted to pursue, at times together and at times in the communicative proposals of individuals or groups. Within their bureaucracy, formal authority had a strong influence on their decisions about communication, but even so, many were involved in a dynamic and ongoing mix of proposed changes, ideas, and adjustments.

They also tested new approaches to communication: individuals tried out new ways of communicating on their own or made formal or informal suggestions to the group or leadership, and the group as a whole tried out new ways of interacting. Testing provided an opportunity to assess the challenges and limitations. At

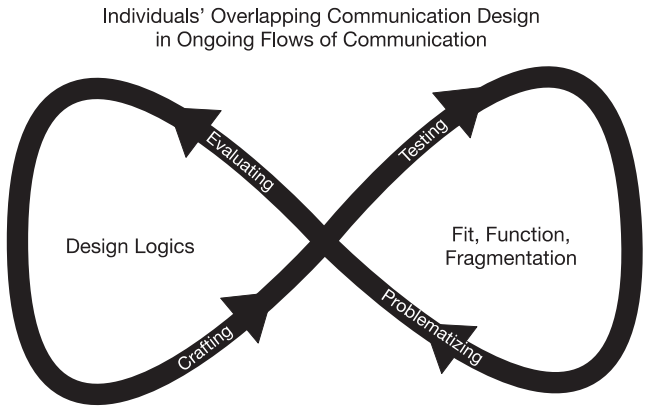

Figure 1 Collective communication design.

times, they disagreed about the wisdom of particular approaches to communication or were unable to execute them as envisioned. This characterization of the communication in the NRC study should highlight CCD as an iterative process wherein collectives move back and forth among problematizing, crafting, testing, and evaluating as they try to make and enact choices about how they communicate.

This vision of CCD reflects several assumptions common to design thinking and management as applied to human systems, but it also differs from these literatures and can extend our understanding of communication as design (Barbour, Gill, & Barge, 2018). CCD no doubt involves patterns observed in other collective design processes. For example, Gruber, de Leon, George, and Thompson (2015) observed that the design process typically consists of (1) discovery, where the designers identify a challenge that emerges from the organizations' context and constraints, (2) definition, where the design challenge is framed, (3) ideation, where alternative solutions to problems are created through prototyping, and (4) delivery, where the solutions are provided and implemented. Design work relies on careful observation of the lived material situations that people find themselves in, thoughtful analysis and reflection on the situation, and a creative (re)imagination of future possibilities to address a design challenge (Jackson & Aakhus, 2014; Nelson & Stolterman, 2012). Our theorizing of CCD, captured in Figure 1, reflects the spirit of the core activities associated with the broader design enterprise, but it builds on them by bringing attention to the design of communication as a distinctive activity.

Furthermore, CCD shares a common interest with participatory design in its focus on the ways that collaboration and co-construction are associated with the design and implementation of innovations in practice (Spinuzzi, 2005). Participatory design (PD) shares a strong resemblance with other collaborative design activities, such as human-centered design (HCD) and codesign. Steen (2015, p. 4) argued "these terms—PD, HCD, and codesign—are often used loosely or interchangeably" and seek to involve relevant stakeholders, encourage collaborative and iterative approaches to design, and align the needs of stakeholders with the objects of design.

Our approach to CCD shares a focus on the joint performance of design work. It differs from other management and organizational design approaches in that (a) it does not assume that communication design need be collaborative and (b) the objects of design are communicative in nature as opposed to process workflows, customer experiences, or products. Workflows and products no doubt are shaped by and shape communication activity, but they are distinct from the choices collectives make about how they will communicate.

A focus on CCD extends our thinking about CAD by giving attention to how designs for communication (Aakhus, 2007) emerge, are transformed, are contested, and are sustained or rejected over time in organizing. An explication of CCD along these lines has the possibility of addressing three issues related to CAD that are particularly important in the study of organizations: (1) the scalability from individual to collective design and design logics, (2) design as an ongoing facet of organizational life in everyday conversation that can be more or less formal, and (3) the emergence,

uptake, and persistence of particular choices about communication in organizing over time. Next, we consider each of these ideas in turn.

First, a distinction between individual and collective communication design is necessary, though they are doubtless connected. For example, the literature on message design has focused attention on how individuals produce messages to achieve goals in context and how message production is influenced by individuals' understandings of how communication works, or their message design logics (Caughlin et al., 2008; O'Keefe, 1988). Messages, in this work, are "collations of thoughts," and message design is the "local management of the flow of thought—both the management of [one's] own thoughts by the message producer and the management of the other's thought in the service of communicative goals" (O'Keefe & Lambert, 1995, p. 55). Communication as an ongoing, unfolding process may also be thought of as the reciprocal design of messages (O'Keefe, Lambert, & Lambert, 1997), wherein alternative communication logics have constitutive force over time: "message design may be seen as a moment when communicators (re)produce context in organizing" (Barbour et al., 2013, p. 22).

In contrast, the interaction design literature has focused on how collectives, such as design teams, develop and implement formats, tools, and procedures for communicating (Ballard & McVey, 2014; Harrison, 2014; Thompson et al., 2014). Actors not only produce particular messages, but may also consider and attempt to craft, affect, or manage the flow of messages that constitute organizational life, in part by how they communicate and in part by how they advocate for or try to dictate interaction. Studies in message and interaction design have recognized that individual and collective logics are in dynamic tension with one another (Aakhus, 2017; Aakhus & Bzdak, 2015; O'Keefe et al., 1997), with one being put in the foreground and the other in the background depending on researcher interests. This work provides a warrant for the further conceptualization of how individual design logics might scale up and how collective and individual design processes interact (Barbour et al., 2018).

Second, CAD has tended to focus on discrete design projects in formalized settings as opposed to viewing design as an ongoing organizational activity that occurs in multiple sites, both formal and informal, over time (Aakhus & Rumsey, 2010; Ballard & McVey, 2014). CAD studies have focused on how formal organizational processes and project teams are created to design solutions to specific organizational problems (Barbour & Gill, 2014). Attention to how impromptu, spontaneous, reflexive conversations enter into the (re)design of communication in organizing can make valuable contributions to this work.

Third, CAD research has tended to focus on the analysis and development of particular communication approaches tailored to specific challenges, and also needs to explore how choices about communication emerge, circulate, and are taken up and used in routine, mundane interaction and workaday organizing. The need for such research is also clear in other lines of scholarship that seek to give guidance for making communication. For example, research in public relations, crisis

communication, and organizational rhetoric provide examples of analyses that take the collective as the producer of communication (for reviews, see Heath, 2010), wherein organizational messaging is geared toward addressing specific challenges, such as a crisis that threatens the collective's legitimacy. Scholarship in these domains has also pushed researchers to link the communication produced by collectives—its form, argumentation, and effects—with the internal processes that constitute them (e.g., Christensen & Cornelissen, 2011) to answer a key question: how do collectives produce messages?

Likewise, research such as Harrison's (2014) efforts to inform the design of interactions involved in organ-donation campaigns (e.g., talking about it at work, a DMV clerk asking a customer to become a donor) and Thompson et al.'s (2014) study of the participatory processes through which stakeholders made choices about a learning exhibit at a science center, highlight the need to make recommendations for specific choices about communication and to explain how collectives go about making choices about communication. Research along these lines helps to answer the question, simply stated, of how collectives produce interaction, That is, how do they "structure, shape and discipline discourse" (Aakhus, 2007, p. 113)? Building on this existing work of communicators intentionally creating responses to specific challenges and dilemmas can elucidate (a) how communication choices emerge and circulate within organizations, (b) how those choices negotiate competing, tensional ideas about and approaches to communication, and (c) how particular communication choices persist (or not) in the fabric of organizational life.

Organizational communication design logics theory

A principal tenet of CAD recognizes that individuals make choices about communication (Aakhus, 2007; Aakhus & Jackson, 2005), and CCD may be understood as involving individuals' overlapping communication design as well as the circulation and negotiation of those designs by the collective (Figure 1). Explicating this link between individual and collective communication design, we first draw on and extend message design logics theory (O'Keefe, 1988) to forward propositions focused on scaling up individuals' communication design.

Message design and communication design are not equivalent, but they are related. Message design logics is a theory of communication design as a "natural, describable activity that is evident in ordinary communicators' creativity in language use and capacity to exploit mutual knowledge and principles of interaction" (Aakhus, 2007, p. 113). Message design logics is therefore an exemplar of CAD and can be useful for theorizing CCD, because (a) individuals' choices about communication influence and are influenced by CCD and (b) message design logics theory offers a sensitizing framework for conceptualizing CCD.

Message design logics theory seeks to address the problem of instantiation: why and how communicators produce particular utterances and symbols to achieve particular ends, or the connection between message form and function, where

form refers to "the substance, organization, and placement of discourse" and function "involves both the antecedent conditions of message generation (especially the goals of the message producer) and the intended and unintended effects of the message" (O'Keefe & Lambert, 1995, p. 54). This process is complex because of the fuzziness between symbols and meaning, between implication and inference. A particular function may be accomplished by a range of forms, and a particular form may fulfill multiple functions. Yet, communicators nonetheless make particular choices (Harrison, 2014), and typically have little trouble producing and understanding discourse that is coherent, fitting, and meaningful (Jacobs, 2002; see also, McGlone & Giles, 2011).

Any conceptualization of CCD should likewise help explain how and why collectives select particular forms instead of others. Message design logics theory addresses the problem of instantiation by recognizing that in producing and evaluating message forms individuals (a) attend to goals and (b) apply message design logics to select, in most cases automatically and without much reflection, particular forms that they believe will accomplish particular functions (Caughlin et al., 2008; O'Keefe, 1988). Scaling up message design logics theory means shifting from a focus solely on individuals to include collectives, and complicating notions of goals and logics, which become not just a matter of individual cognition but of collective negotiation.

Scaling up individual communication design

First, individual communication design processes may be conceptualized as contributing to CCD, in that individuals' own choices may be mimicked, modified, resisted, and so forth by others. For example, in the NRC study, a few, but not all, RIs followed up on safety meetings with email summaries (Barbour & Gill, 2014, p. 179). The use and form of summary emails were at the discretion of individual RIs, and sending emails reflected particular choices about communication that might or might not be mimicked, modified, or resisted by others. At the same time, the participants' opinions differered regarding the usefulness of summary emails. Aakhus and Rumsey's (2010) study of an online cancer support community focused on a community's negotiation of disagreement about what ought to qualify as supportive communication. Disagreement began as members of the online community questioned one member's contributions and offered alternatives as advocacy for their preferred forms of support (Aakhus and Rumsey, 2010, p. 71). These examples demonstrate the influence of individual design in CCD, and Proposition 1 focuses attention on this idea that individuals' designs for communication interact and overlap.

> Proposition 1: Individual communication design activity affects collective design activity in that (a) communicators' own individual communication design can influence others' communication design over time, and (b) individual communicators may advocate (explicitly or implicitly) for particular communication choices.

Communication goals

Second, the influence in the examples above occurred in part because individuals' choices about communication reflected goals that had a basis in the collective enterprise in play (e.g., participating in an online support group, conducting safety meetings). Individual communication design may contribute to CCD, in that individuals may advocate for communication that reflects their own goals and/or the goals of the collective as they understand them. Complex communication situations tend to involve multiple, overlapping, and often contradictory goals (Caughlin et al., 2008). Goals need not be "clear, consciously recognized objectives" but instead can be "socially codified representations of situations" (O'Keefe, 1988, p. 82). Goals are socially constructed, and individuals must and do find ways of acting through communication even when goals are contradictory, ironic, or tensional (Carlson, Poole, Lambert, & Lammers, 2016; Trethewey & Ashcraft, 2004). Communicative sophistication may be understood as the fluency of particular approaches for managing tensions and contradictions among those multiple goals. Goals are mediated through cognitive processes, though they are independent from them, and communicators' sense of their goals and the communication resources available to them within the communicative situation comprises a field of thoughts that they navigate as they communicate (O'Keefe & Lambert, 1995).

Institutional and organizational structures contribute to this field of knowledge. Context, including organizational and institutional structures, can make particular goals more or less salient or can supply them altogether, and goals implied by differing organizational and institutional structures can have more or less encumbrance in communication (Lammers, 2011). Put another way, organizations and institutions offer meaning systems that exist in those fields of thoughts and therefore offer discursive resources that communicators may appropriate (Kuhn, 2009). For example, institutional messages have reach, in part, because they are more likely to be appropriated to craft subsequent messages (Lammers, 2011). Likewise, the communicative forms, formats, objects, and tools created by collective and individual design activity contribute to the discursive resources available to later communication design (Aakhus & Laureij, 2012).

Inasmuch as individual communication design that orients to goals influences CCD (P1), individual communication design mediates the influence of goals in CCD. Returning to the previous examples, disagreement about the actions of one member of the online cancer support community created space for wider discussion regarding the purpose of the community: "the clash in the initial exchange thus exposes the multiple demands and goals related to supportive communication" (Aakhus & Rumsey, 2010, p. 73). In general, CCD should be understood as orienting to conceiving, reconceiving, achieving, and stymying collective goals, as well as, to varying degrees, the idiosyncratic goals of the individuals involved.

> Proposition 2: Individuals' overlapping communication design and, thereby, collective communication design, are goal oriented.

Communication design logics

Communication design not only reflects multiple goals in context, it also reflects more or less sophisticated, fundamental beliefs about how communication works, or design logics (O'Keefe, 1988). Communicators vary in how they design messages to achieve goals, and this variability is clearest in complex situations that present multiple contradictory goals (O'Keefe, 1997). At a cognitive level, the activation of particular constructs depends on goals as well as on communicators' "activity model[s]": their sense of how an activity works and what it should entail based on past experience. The activity model "maps messages onto expected effects" (O'Keefe & Lambert, 1995, p. 77). In their theorizing, message production involves the iterative evaluation of potential messages until the communicator reaches a satisfactory match or runs out of time, and the experience of communication failure and success refines activity models over time.

Design logics can influence not just the production of individual messages in particular moments, but entire flows of interaction, because design logics inform communicators' selection of what to say and of what messages mean, as well as their choices about how to arrange interaction to achieve goals (O'Keefe & Lambert, 1995). In articulating her theory, O'Keefe (1988) specified three logics—expressive, conventional, and rhetorical—that differed in terms of, for example, how they each conceptualize the mutability of the communication situation, the makeup of the audience audience, taking perspectives, what makes communication effective, how messages function, and methods for managing conflicting goals. The efficacy of these three distinct logics has received repeated empirical confirmation (Barbour et al., 2013; Caughlin et al., 2008), and although not intended to be exhaustive (O'Keefe, 1988), they offer a useful starting point for conceptualizing the operation of design logics in CCD, in that these clusters of fundamental beliefs about communication provide different resources for managing the multiple, contradictory goals common to complex, tensional organizing.

An expressive design logic sees communication as "a medium for expressing thoughts and ideas" (O'Keefe, 1988, p. 85). Put simply, the function of communication is self-expression, where "messages…are straightforward expression (or "dumping") of salient mental constructs" (O'Keefe, 1988, p. 85). Employing this logic, messages are evaluated as containers of information where effective messages are clear, accurate, and informative (O'Keefe, 1997). Per expressive designs, goals need not be decided but just exist, information is understood as it is conveyed unless there is a failure to transmit, and context is irrelevant. Contradictions within and among goals would be resolved by selecting a principal goal and ignoring others (e.g., denial as a protypical responses to tensions; Carlson et al., 2016; Poole & Van de Ven, 1989).

Under a conventional design logic, "communication is a game played cooperatively, according to socially conventional rules and procedures" (O'Keefe, 1988, p. 86). Conventional designs manage the "force or point of messages" (O'Keefe, 1997, p. 105). Communicators address contradictory goals by prioritizing and separating

them, and messages focus on the principal goal, but other goals "are addressed in message features such as indirection, redress, and the like" (O'Keefe, 1997, p. 99). Context determines meaning, but is also fixed: "hearers cooperate in playing the game by attending to conventionally significant features of context and cooperatively inferring the speaker's intention and by returning the response that their current social position obligates them to perform" (O'Keefe, 1988, p. 86). Goals are defined by those with the authority to decide them, and context should be understood through the lens of legitimate action. Laws, policy, formal guidance, and professional standards are arbiters of goals and context. Contradictions can and should be decided according to social convention, such as prevailing institutional and organizational structures.

A rhetorical design logic conceptualizes communication as "the creation and negotiation of social selves and situations" (O'Keefe, 1988, p. 87). Addressing contradictory goals "involves rhetorical manipulation of the context to evade conflict among goals" (O'Keefe, 1997, p. 101). Effective messages are those that coordinate the goals in the communicative situation. Communicators "must accomplish … the achievement of a consensus regarding the reality in which they are engaged" (O'Keefe, 1997, p. 88). Rhetorical designs "manage context" (O'Keefe, 1997, p. 105). Goals are negotiated in communication, and decided and defined by the expertise and careful work of communicators. Contradictions are not decidable, requiring continuous negotiation.

These design logics can have important implications in organizing. They reflect a developmental progression (from expressive to rhetorical) where more sophisticated communication should more adroitly manage the multiplicity of goals implicated in complex situations (Fairhurst, 2011). Individuals employ these logics in individual communication design that influences CCD (P1) in part by supplying differing logics of communication that have to be negotiated. O'Keefe, Lambert, and Lambert (1997) demonstrated that patterns of organizational conflict and miscommunication may reflect alignments and misalignments among message design logics. In the Aakhus and Rumsey (2010, p. 74) study, communicators' disagreements not only exposed "multiple demands and goals," but also "differing assumptions about the conduct of supportive communication to manage these demands and goals." In the study of the NRC, negotiations amongst the RIs reflected systematically different beliefs about how communication works (e.g., interpretations as clear-cut versus contingent and multiple), which could be categorized as reflecting more or less expressive, conventional, or rhetorical design logics. That individuals hold different beliefs about how communication ought to work is fundamental to CCD, which necessarily involves negotiating these differences.

Proposition 3: Collective communication design reflects individuals' overlapping communication design logics, which vary in sophistication.

These three specific design logics are not exhaustive, and identification of additional design logics should be a focus of CCD research. For example, documenting

the influence of competing ideas about how communication ought to work in stakeholder engagement processes, Aakhus and Bzdak (2015, p. 192) reconstructed two plausible logics of communication design expressed in organizational strategies for engagement by analyzing the relevant exigency, the purpose and orchestration of communication for addressing that exigency, and the justification of the "effectiveness and legitimacy of the communication activity," or systemic-rationality (see also Aakhus, 2017). Extending O'Keefe's (1988) three design logics should be useful in the study of CCD, because they prompt attention to aspects of communication to which clusters of beliefs attend (i.e., the aforementioned mutability of the communication situation, audience, etc.), providing further scaffolding for the analysis exemplified in Aakhus and Bzdak (2015). Furthermore, the conceptualization of sophistication captured in the logics centers on explaining why the clusters differ in their efficacy for managing tensional, contradictory organizational circumstances (Fairhurst, 2011; O'Keefe et al., 1997) commensurate with efforts to explain the tensional character of organizing (Putnam et al., 2016; Seo & Creed, 2002; Tracy, 2004). Extending the reasoning of message design logics theory, more sophisticated communication design may enable the more effective management of the tensions and contradictions inherent to organizing (see P9 below).

Providing a partial answer to the first guiding question (how do collectives design communication?), these first three propositions capture the idea that individuals' goal-oriented communication and design logics shape collective communication processes over time in two ways (Figure 1): communicators' own crafting and evaluating of messages and interaction and its influence on others' crafting and evaluating of messages and interaction. Communicators may advocate for communication choices that reflect their own constructions of goals and beliefs about communication. Inasmuch as CCD reflects individuals crafting and evaluating communication, their proposed and lived choices also have a life of their own in their circulation in the collective's behavior (i.e., in the ongoing flows of communication/organizing; Cooren, 2004). That is, CCD is about individuals making choices about messages and interaction, and also individuals collaborating to make choices about communication together and trying to carry those choices off together. Answering how collectives design communication needs to encompass and connect these ideas.

Flows of communication/organizing

The operation, circulation, and negotiation of communicative techniques in the flows of communication that constitute organizing comprise CCD (Figure 1). Collective goals and communication design logics themselves become the target of negotiation as individuals try out and advocate for communicative techniques (Aakhus & Rumsey, 2010). Aakhus and Bzdak (2015) argued that communication design logics may be studied by investigating the collective negotiation of design logics, designs for communication, and communication in practice. We conceptualize this negotiation as involving testing out and problematizing communication, and focusing on questions of fit, function, and fragmentation.

Testing and problematizing

In the ongoing flow of communication, groups try out communication techniques, and their communication with each other offers them a continuous stream of evidence about the efficacy of particular communication choices (Aakhus, 2007). CCD occurs when the collective brings its attention in part or as a whole to communication issues as problems to be solved. In Thompson et al.'s (2014) study of the participative design of an interactive learning space, the communication design of the participatory process began with the realization that they were not only crafting the learning space, but also making choices about the communication process through which they crafted it. Similar realizations preceded RIs' discussions of if and how they ought to use summary emails and in the online support community's disagreements in Aakhus and Rumsey (2010).

The question of which communication patterns or practices surface as needing attention for (re)design is already a central concern of communication research. Communication is strategic in the sense that it is driven by goals, yet it typically occurs automatically (i.e., without careful attention to every detail, without reflection, with heuristics and "rules of thumb") except, for example, in situations that encourage awareness. For example, research focused on managing the tensions, ironies, and contradictions inherent to organizing often recommends the need for reflexivity—"an awareness or critical understanding of the existing social conditions" (Seo & Creed, 2002, p. 230)—and reflexivity is often given as a precondition of the successful management of organizational tensions (Barge, Lee, Maddux, Nabring, & Townsend, 2008; Putnam et al., 2016). Seo and Creed (2002) took this idea further to suggest that the presence of contradictions prompts reflexivity (see also, Barbour & Manly, 2016), and we would extend this idea once again to postulate that contradictions prompt CCD.

Implicit in the theorizing so far, CCD also reflects the fundamental idea that communication is indeterminate. The flow of evidence about communication also highlights differences in perceptions of communication. Individuals have different goals and perceive individual and shared goals differently (P2). They hold different beliefs about how communication ought to work (P3). CCD grapples with the tensions inherent to organizing and the indeterminacy of communication.

> Proposition 4: Ongoing communication provides evidence about collective communication choices that can highlight tensions and contradictions, evoke different interpretations of them, and prompt collective communication design.

Fit, function, and fragmentation

The substance of these negotiations centers on questions of fit, function, and fragmentation (Barbour & Gill, 2014, p. 186–187). Considering the negotiation of fit (and difference in interpretations of fit) first, the idea is that communicators try to select and advocate for communicative approaches that are complex enough to address the goals, dilemmas, and problems at hand. The questions here are

whether a technique fits the situation whether it is sufficiently sophisticated without being overly complex. Fit may be most difficult in communicative situations that are complex because they imply multiple and contradictory goals that can be interpreted in different ways. The point is that communicators orient to fit in CCD even though they may or may not be successful.

A collective may employ an overly simple design logic when the situation requires a more complex one or a rhetorical logic may be excessive for straightforward problems; in the latter case, the logic may not work well even though it is more sophisticated (O'Keefe et al., 1997). In the NRC study, one engineer was concerned that his way of working be preserved. He codified his approaches in complex, visual communication workflows. Though many in the unit expressed appreciation for his expertise, his efforts had little traction with others because of their complexity. Carlson et al. (2016) addressed notions of fit in the context of disaster management, forwarding a contingency model wherein the inherent sophistication of prototypical responses (e.g., denial, cosmetic, selection, segmentation/alternation, transcendence) was less explanatory than the social construction of the fit between responses and situational demands. Questions of fit point to the need for a distinction between the sophistication of communication design, the persistence of an approach to communication, and communication effects and effectiveness.

> Proposition 5: The fit of the underlying design logic of a communication technique with the communicative situation influences its persistence and effectiveness.

Fit is related to but distinct from function, in that selecting a sufficiently sophisticated approach is not the same as being able to, and having the individual and collective will to, carry it off, which is further distinguishable from persistence and effectiveness. Individual message design research has tended to assume that a person capable of producing a rhetorical message would be able to produce a message using any of the three design logics and that they would know when to employ each, but there may not be a perfect correspondence between (a) having sophisticated ideas about how communication ought to work and (b) the ability and willingness to engage in disciplined communicative practice consistent with those ideas. A person capable of enacting communication behaviors reflecting a conventional design logic might agree in principle with the need for practice that reflects a rhetorical logic, and yet be incapable of enacting more sophisticated designs.

CCD orients to issues of function, asking whether the collective can and will carry off a successful performance of a given communication technique. The difficulty in negotiating contradictory goals reflects a distinction between being aware of the tensions and alternatives, and having the skill and discipline to enact patterns of action (Putnam et al., 2016; Seo & Creed, 2002). In the NRC study, agreements regarding how safety meetings ought to run were not always enacted, even when endorsed by leadership, because individual communicators struggled to do so (they were not able) or they held beliefs inconsistent with the prevailing design

(they were not willing). The persistence and effectiveness of communication also reflects factors related to fit and function but outside their control. For example, in the NRC study, inspectors worried that external circumstances such as natural disasters might dash their efforts, no matter how well-disciplined their team.

> Proposition 6: The ability and willingness of individuals and collectives to enact the techniques of the collective influences their persistence and effectiveness.

Fit and function are foci of CCD also further complicated by fragmentation. A key difference between individual and collective communication design is the proliferation of goals, logics, and communication techniques in the ongoing flow of interaction. Collective negotiations of communication designs are unlikely to be neat or simple. For instance, communicators are likely to present multiple bids, proposals, and alternatives for communication that may solicit agreement, support, resistance, reformation, rejection, or a combination of all these. We refer to this multiplicity as the fragmentation of CCD.

To navigate this fragmentation, communicators will appeal to what seems to be working well enough (i.e., what is not yet problematic) and to the prevailing authorities for action (Taylor & Van Every, 2014). For example, Aakhus and Rumsey's (2010) analysis revealed not only conflict about how to communicate support, but also the inability of the community to design a new form of engagement that reconciled competing alternatives. As a result, some participants abandoned the community while others carried on. We capture these ideas in a pair of propositions:

> Proposition 7: The persistence and effectiveness of a particular communication technique depends on the circulation and negotiation of competing alternatives.
> Proposition 8: In the negotiation of this fragmentation, communicators will appeal to what they see working and to what they understand as the prevailing authority.

Thus far, addressing the first guiding question, we have offered eight propositions that together illuminate connections between individual and collective communication design. Collectives design communication by integrating the contributions of individual communication designers (P1–3) and the collective negotiation of fit, function, and fragmentation (P4–8). To address the second guiding question and to make explicit the meaning of these ideas for intervention, in the next section we propose a ninth proposition that focuses on persistence and effectiveness of communication as distinct from but related to CCD.

Collective communication design as a theory of intervention

Collectives intervene in their communication through communication design. Explaining intervention necessitates conceptualizing (a) the persistence of particular

techniques, (b) the effectiveness of efforts to intervene, and (c) the resulting effectiveness of communication as influenced by CCD. In this framework, the effectiveness of a collective's interventions into their own communication depends on their shared ability and willingness to reflect on and make disciplined communication choices and the sophistication of the logics underlying those choices.

Evidence abounds of collectives retaining communication techniques that are strange, counterproductive, or destructive, as well as those that are helpful and productive (Rice, 2008). Effective and ineffective communication patterns can and do persist, and we would explain the persistence of such patterns as occurring when a particular choice about communication is not seen as problematic, and is therefore not surfaced for evaluation and reconsideration (P4). They may also persist because no alternative exists (fragmentation), because the collective is unable to or lacks the power or collective will to try another approach (function), or because the collective does not have a good enough sense of what the communication situation necessitates (fit). In other words, the communication techniques that persist seem to fit the situation, are ones that the collective can and will enact, and face little competition from alternatives; thus, they appear to the collective to be working regardless of actual efficacy.

Once a communication technique is recognized as a problem to be solved, individuals and collectives will be more likely to take steps to try to change it. Such interventions typically try to address (explicitly or implicitly) multiple, contradictory, and even tensional goals inherent to complex communication situations, and what is considered successful intervention may be understood in terms of the sophistication of and effectiveness with which actors are able to negotiate these tensions, including attending to multiple relevant goals. For example, Pitts, Fowler, Kaplan, Nussbaum, and Becker's (2009) research on family farm succession planning found that families tended to be more adaptive when they recognized the tensions involved in business succession. Sophistication should be positively related to effectiveness, but understood as distinct from it (Barbour et al., 2013). The ability to navigate the interactions among situation, goals, and action turns on the sophistication of the communication design logics that actors employ. Communication effectiveness may be conceptualized as the successful management of the tensions, contradictions, and ironies inherent to complex communication situations, and communication skill as the efficacy of the actions through which individuals and collectives execute communication techniques that reflect more or less sophisticated design logics.

Communication that employs a rhetorical design logic may be most likely to enable the successful negotiation of organizational tensions, as actors construe contradictions in ways that help them define their symbolic reality (Barge et al., 2008). Users of an expressive logic may fail to attend to the requirements of the communicative situation (ignoring the existence of tension), and users of a conventional logic would treat the situation as fixed (disabling more integrative management of organizational tensions in communication). More sophisticated design logics are

more likely to work because they enable a more reflexive and creative exploitation of discursive resources, including organizational and institutional contradictions.

> Proposition 9: Communication techniques that reflect more sophisticated design logics will enable more effective management of the tensions inherent to organizing, assuming that they (a) fit the communicative situation, (b) can and will be accomplished by the collective, and (c) are not diminished by the circulation of competing alternatives.

A research agenda for organizational communication design logics

These propositions provide direction for the generation of hypotheses and research questions for subsequent empirical study. Specifically, research needs to investigate both the kinds of design logics available to collectives and the processes through which members decide to employ them. They likely include (but are not limited to) expressive, conventional, and rhetorical design logics (O'Keefe et al., 1997). These logics offer heuristic value by highlighting characteristics to which logics apply (e.g., the mutability of the communication situation, audience, perspective taking), and can enrich efforts such as Aakhus and Bzdak's (2015) work to identify of communication logics according to their exigency, purpose, orchestration, and rationality. For example, research on issues of fit might investigate how collectives become aware of and make sense of the differing ideas about the requirements of communication situations; research on issues of function could investigate how collectives actually enact logics to more or less adaptive ends. The fragmentation and circulation of alternatives regarding the designable features of communication presents an opportunity for the study of the negotiation of competing design logics over time and across multiple levels and sites of organizing.

More specifically, this theory of CCD highlights many emphases for future research. First, the specific micro-skills associated with principal design activities, such as problematizing, evaluating, crafting, and testing, need further illumination. The reflective practice and discursive leadership literatures indicate that problem setting and framing skills are important for understanding problem boundary and scope (Fairhurst, 2011; Schon, 1984), but it is also crucial to recognize that different problem formulations can evoke varied choices about communication and involve differing levels of skill in carrying off those choices. Future research should explore the individual and collective skills and practices of CCD.

Second, further study of CCD also needs to attend to emotion. The propositions focused on fit, function, and fragmentation may inadvertently evoke a dry, cognitive imagining of CCD, when in fact research has demonstrated that CCD can involve deep feeling about how communication ought to be (e.g., Aakhus & Rumsey, 2010). Communicative intervention, by design or in effect, involves and evokes emotion, even when (perhaps especially when), CCD seeks to keep the

emotional tenor of organizing neutral, controlled, or hidden, as was the case with how the NRC crafted their safety meetings.

Third, future CCD research needs to take seriously questions of temporality (Ballard & McVey, 2014). In ongoing flows of communication, choices may have more traction when timing is propitious. Interventions depend on timing, which should prompt attention to the rhythms and pacing of communication flows. Future CCD research should also focus on the role of timing in intervention, and how different time signatures associated with competing approaches to communication are managed.

Fourth, another area for future research involves elaborating on issues of authority and power. To support this research, this explication grounds the theory of CCD in individuals' communication design as well as the circulation and negotiation of those designs by the collective. Understanding why particular approaches rise to dominance (Harrison, 2014; Nelson & Stolterman, 2012) through negotiations of fit, function, and fragmentation requires additional attention to build on the likely-too-simple idea that what persists is what works (or seems to). Clarification of the influence of "what works" and "prevailing authority" (P7–8) is key.

Organizing gives rise to authoritative texts, and these orient members as they navigate organizational life (Cooren, 2004). Like authoritative texts, designs for communication have implications for how individuals and the collective construct and manage identity and power dynamics. Future research should investigate how organizational and institutional authority are negotiated and contested in how we communicate (Taylor & Van Every, 2014) and also how we decide to communicate. In that CCD focuses attention on intervention, it also highlights strategic efforts to shape organizational life (Tracy, 2016) through the introduction of, advocacy for, and reproduction of communication that becomes authoritative and powerful over time.

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